

Cannabinoids and Cancer 2/17/2017

1. Jamwal, R., Topletz, A. R., Ramratnam, B. & Akhlaghi, F. Ultra-high performance liquid chromatography tandem mass-spectrometry for simple and simultaneous quantification of cannabinoids. *J Chromatogr B Analyt Technol Biomed Life Sci* **1048**, 10-18 (2017).
2. Tateo, S. State of the evidence: Cannabinoids and cancer pain-A systematic review. *J Am Assoc Nurse Pract* **29**, 94-103 (2017).
3. ElSohly, M. A., Radwan, M. M., Gul, W., Chandra, S. & Galal, A. Phytochemistry of *Cannabis sativa* L. *Prog Chem Org Nat Prod* **103**, 1-36 (2017).
4. Fung, S. et al. Novel indole-based compounds that differentiate alkylindole-sensitive receptors from cannabinoid receptors and microtubules: Characterization of their activity on glioma cell migration. *Pharmacol Res* **115**, 233-241 (2017).
5. Utomo, W. K. et al. Modulation of Human Peripheral Blood Mononuclear Cell Signaling by Medicinal Cannabinoids. *Front Mol Neurosci* **10**, 14 (2017).
6. Braun, I. M. et al. Experts' perspectives on the role of medical marijuana in oncology: A semistructured interview study. *Psychooncology* (2017).
7. Barbado, M. V. et al. Cannabinoid derivatives exert a potent anti-myeloma activity both in vitro and in vivo. *Int J Cancer* **140**, 674-685 (2017).
8. Cuba, L. F., Salum, F. G., Cherubini, K. & Figueiredo, M. A. Cannabidiol: an alternative therapeutic agent for oral mucositis. *J Clin Pharm Ther* (2017).
9. Kevin, R. C. et al. Acute and residual effects in adolescent rats resulting from exposure to the novel synthetic cannabinoids AB-PINACA and AB-FUBINACA. *J Psychopharmacol* 269881116684336 (2017).
10. Xian, X. et al. WIN 55,212-2 Inhibits the Epithelial Mesenchymal Transition of Gastric Cancer Cells via COX-2 Signals. *Cell Physiol Biochem* **39**, 2149-2157 (2016).
11. Friedrich, J., Khatib, D., Parsa, K., Santopietro, A. & Gallicano, G. I. The grass isn't always greener: The effects of cannabis on embryological development. *BMC Pharmacol Toxicol* **17**, 45 (2016).
12. Franks, L. N., Ford, B. M. & Prather, P. L. Selective Estrogen Receptor Modulators: Cannabinoid Receptor Inverse Agonists with Differential CB1 and CB2 Selectivity. *Front Pharmacol* **7**, 503 (2016).
13. Ladin, D. A., Soliman, E., Griffin, L. & Van Dross, R. Preclinical and Clinical Assessment of Cannabinoids as Anti-Cancer Agents. *Front Pharmacol* **7**, 361 (2016).
14. Fraguas-Sánchez, A. I., Fernández-Carballido, A. & Torres-Suárez, A. I. Phyto-, endo- and synthetic cannabinoids: promising chemotherapeutic agents in the treatment of breast and prostate carcinomas. *Expert Opin Investig Drugs* **25**, 1311-1323 (2016).
15. Dobovišek, L., Hojnik, M. & Ferk, P. Overlapping molecular pathways between cannabinoid receptors type 1 and 2 and estrogens/androgens on the periphery and their involvement in the pathogenesis of common diseases (Review). *Int J Mol Med* **38**, 1642-1651 (2016).
16. Lee, Y., Jo, J., Chung, H. Y., Pothoulakis, C. & Im, E. Endocannabinoids in the gastrointestinal tract. *Am J Physiol Gastrointest Liver Physiol* **311**, G655-G666

- (2016).
17. Giaginis, C. et al. Endocannabinoid System: A Promising Therapeutic Target for the Treatment of Haematological Malignancies. *Curr Med Chem* **23**, 2350-2362 (2016).
 18. Ranieri, R., Laezza, C., Bifulco, M., Marasco, D. & Malfitano, A. M. Endocannabinoid System in Neurological Disorders. *Recent Pat CNS Drug Discov* **10**, 90-112 (2016).
 19. Pyszniak, M., Tabarkiewicz, J. & Łuszczki, J. J. Endocannabinoid system as a regulator of tumor cell malignancy - biological pathways and clinical significance. *Onco Targets Ther* **9**, 4323-4336 (2016).
 20. Osman, N. A. et al. Discovery of novel Tetrahydrobenzo[b]thiophene and pyrrole based scaffolds as potent and selective CB2 receptor ligands: The structural elements controlling binding affinity, selectivity and functionality. *Eur J Med Chem* **122**, 619-634 (2016).
 21. Hernández-Tiedra, S. et al. Dihydroceramide accumulation mediates cytotoxic autophagy of cancer cells via autolysosome destabilization. *Autophagy* **12**, 2213-2229 (2016).
 22. Yayan, J. & Rasche, K. Damaging Effects of Cannabis Use on the Lungs. *Adv Exp Med Biol* **952**, 31-34 (2016).
 23. Van Ryckeghem, F. Corticosteroids, the oldest agent in the prevention of chemotherapy-induced nausea and vomiting: What about the guidelines. *J Transl Int Med* **4**, 46-51 (2016).
 24. Ortega, A. et al. Comparing the effects of endogenous and synthetic cannabinoid receptor agonists on survival of gastric cancer cells. *Life Sci* **165**, 56-62 (2016).
 25. Martínez-Martínez, E. et al. CB2 cannabinoid receptor activation promotes colon cancer progression via AKT/GSK3 β signaling pathway. *Oncotarget* **7**, 68781-68791 (2016).
 26. Nabissi, M. et al. Cannabinoids synergize with carfilzomib, reducing multiple myeloma cells viability and migration. *Oncotarget* **7**, 77543-77557 (2016).
 27. Davis, M. P. Cannabinoids for Symptom Management and Cancer Therapy: The Evidence. *J Natl Compr Canc Netw* **14**, 915-922 (2016).
 28. Vargas Mondaca, A. Cannabinoids and cancer pain: some considerations. *Medwave* **16**, e6597 (2016).
 29. Pokrywka, M., Góralaska, J. & Solnica, B. Cannabinoids - a new weapon against cancer. *Postepy Hig Med Dosw (Online)* **70**, 1309-1320 (2016).
 30. Lukhele, S. T. & Motadi, L. R. Cannabidiol rather than Cannabis sativa extracts inhibit cell growth and induce apoptosis in cervical cancer cells. *BMC Complement Altern Med* **16**, 335 (2016).
 31. Graul, A. I., Stringer, M. & Sorbera, L. Cachexia. *Drugs Today (Barc)* **52**, 519-529 (2016).
 32. Lobos Urbina, D. & Peña Durán, J. Are cannabinoids effective for treatment of pain in patients with active cancer. *Medwave* **16 Suppl 3**, e6539 (2016).
 33. Maida, V. & Daeninck, P. J. A user's guide to cannabinoid therapies in oncology. *Curr Oncol* **23**, 398-406 (2016).
 34. Kreuter, M. et al. [Cannabis--Position Paper of the German Respiratory Society (DGP)]. *Pneumologie* **70**, 87-97 (2016).

35. Mücke, M. et al. [Cannabinoids in palliative care: Systematic review and meta-analysis of efficacy, tolerability and safety]. *Schmerz* **30**, 25-36 (2016).
36. Aggarwal, S. K. Use of cannabinoids in cancer care: palliative care. *Curr Oncol* **23**, S33-6 (2016).
37. Velasco, G., Hernández-Tiedra, S., Dávila, D. & Lorente, M. The use of cannabinoids as anticancer agents. *Prog Neuropsychopharmacol Biol Psychiatry* **64**, 259-266 (2016).
38. Khan, M. I. et al. The Therapeutic Aspects of the Endocannabinoid System (ECS) for Cancer and their Development: From Nature to Laboratory. *Curr Pharm Des* **22**, 1756-1766 (2016).
39. Morell, C. et al. The cannabinoid WIN 55,212-2 prevents neuroendocrine differentiation of LNCaP prostate cancer cells. *Prostate Cancer Prostatic Dis* (2016).
40. Manera, C., Arena, C. & Chicca, A. Synthetic cannabinoid receptor agonists and antagonists: implication in CNS disorders. *Recent Pat CNS Drug Discov* (2016).
41. Coke, C. J. et al. Simultaneous Activation of Induced Heterodimerization between CXCR4 Chemokine Receptor and Cannabinoid Receptor 2 (CB2) Reveals a Mechanism for Regulation of Tumor Progression. *J Biol Chem* **291**, 9991-10005 (2016).
42. Farzaei, M. H., Bahramsoltani, R. & Rahimi, R. Phytochemicals as adjunctive with conventional anticancer therapies. *Curr Pharm Des* (2016).
43. van den Beuken-van Everdingen, M. H. et al. Pharmacological Treatment of Pain in Cancer Patients: The Role of Adjuvant Analgesics, a Systematic Review. *Pain Pract* (2016).
44. Reuter, S. E. & Martin, J. H. Pharmacokinetics of Cannabis in Cancer Cachexia-Anorexia Syndrome. *Clin Pharmacokinet* **55**, 807-812 (2016).
45. Suk, K. T. et al. Opposite roles of cannabinoid receptors 1 and 2 in hepatocarcinogenesis. *Gut* (2016).
46. Rodrigues, T., Sieglitz, F. & Bernardes, G. J. Natural product modulators of transient receptor potential (TRP) channels as potential anti-cancer agents. *Chem Soc Rev* (2016).
47. Tsang, C. C. & Giudice, M. G. Nabilone for the Management of Pain. *Pharmacotherapy* **36**, 273-286 (2016).
48. Ablin, J., Ste-Marie, P. A., Schäfer, M., Häuser, W. & Fitzcharles, M. A. Medical use of cannabis products: Lessons to be learned from Israel and Canada. *Schmerz* **30**, 3-13 (2016).
49. Beaulieu, P., Boulanger, A., Desroches, J. & Clark, A. J. Medical cannabis: considerations for the anesthesiologist and pain physician. *Can J Anaesth* **63**, 608-624 (2016).
50. Nikan, M., Nabavi, S. M. & Manayi, A. Ligands for cannabinoid receptors, promising anticancer agents. *Life Sci* **146**, 124-130 (2016).
51. Abrams, D. I. Integrating cannabis into clinical cancer care. *Curr Oncol* **23**, S8-S14 (2016).
52. Fisher, T. et al. In vitro and in vivo efficacy of non-psychoactive cannabidiol in neuroblastoma. *Curr Oncol* **23**, S15-22 (2016).
53. Bileck, A. et al. Impact of a synthetic cannabinoid (CP-47,497-C8) on protein

- expression in human cells: evidence for induction of inflammation and DNA damage. *Arch Toxicol* **90**, 1369-1382 (2016).
54. Li, A. M. & Rassekh, S. R. Hypotension associated with ingestion of cannabinoids in two children with cancer. *CMAJ* **188**, 596-597 (2016).
 55. Ferk, F. et al. Genotoxic properties of XLR-11, a widely consumed synthetic cannabinoid, and of the benzoyl indole RCS-4. *Arch Toxicol* (2016).
 56. Kaur, R., Ambwani, S. R. & Singh, S. ENDOCANNABINOID SYSTEM: A multi-facet therapeutic target. *Curr Clin Pharmacol* (2016).
 57. May, M. B. & Glode, A. E. Dronabinol for chemotherapy-induced nausea and vomiting unresponsive to antiemetics. *Cancer Manag Res* **8**, 49-55 (2016).
 58. Reece, A. S. & Hulse, G. K. Chromothripsis and epigenomics complete causality criteria for cannabis- and addiction-connected carcinogenicity, congenital toxicity and heritable genotoxicity. *Mutat Res* **789**, 15-25 (2016).
 59. Andrade, C. Cannabis and neuropsychiatry, 1: benefits and risks. *J Clin Psychiatry* **77**, e551-4 (2016).
 60. Schrot, R. J. & Hubbard, J. R. Cannabinoids: Medical implications. *Ann Med* **48**, 128-141 (2016).
 61. Costa, L., Amaral, C., Teixeira, N., Correia-da-Silva, G. & Fonseca, B. M. Cannabinoid-induced autophagy: Protective or death role. *Prostaglandins Other Lipid Mediat* **122**, 54-63 (2016).
 62. Javid, F. A., Phillips, R. M., Afshinjavid, S., Verde, R. & Ligresti, A. Cannabinoid pharmacology in cancer research: A new hope for cancer patients. *Eur J Pharmacol* **775**, 1-14 (2016).
 63. Soliman, E., Henderson, K. L., Danell, A. S. & Van Dross, R. Arachidonoyl-ethanolamide activates endoplasmic reticulum stress-apoptosis in tumorigenic keratinocytes: Role of cyclooxygenase-2 and novel J-series prostamides. *Mol Carcinog* **55**, 117-130 (2016).
 64. Ramer, R. & Hinz, B. Antitumorigenic targets of cannabinoids - current status and implications. *Expert Opin Ther Targets* 1-17 (2016).
 65. Phillips, R. S. et al. Antiemetic medication for prevention and treatment of chemotherapy-induced nausea and vomiting in childhood. *Cochrane Database Syst Rev* **2**, CD007786 (2016).
 66. Velasco, G., Sánchez, C. & Guzmán, M. Anticancer mechanisms of cannabinoids. *Curr Oncol* **23**, S23-32 (2016).
 67. Andradas, C. et al. Activation of the orphan receptor GPR55 by lysophosphatidylinositol promotes metastasis in triple-negative breast cancer. *Oncotarget* (2016).
 68. Sido, J. M., Yang, X., Nagarkatti, P. S. & Nagarkatti, M. Δ^9 -Tetrahydrocannabinol-mediated epigenetic modifications elicit myeloid-derived suppressor cell activation via STAT3/S100A8. *J Leukoc Biol* **97**, 677-688 (2015).
 69. Ostadhadi, S., Rahmatollahi, M., Dehpour, A. R. & Rahimian, R. Therapeutic potential of cannabinoids in counteracting chemotherapy-induced adverse effects: an exploratory review. *Phytother Res* **29**, 332-338 (2015).
 70. Xian, S., Parayath, N. N., Nehoff, H., Giles, N. M. & Greish, K. The Use of Styrene Maleic Acid Nanomicelles Encapsulating the Synthetic Cannabinoid Analog WIN55,212-2 for the Treatment of Cancer. *Anticancer Res* **35**, 4707-4712 (2015).

71. Ayakannu, T., Taylor, A. H., Willets, J. M. & Konje, J. C. The evolving role of the endocannabinoid system in gynaecological cancer. *Hum Reprod Update* **21**, 517-535 (2015).
72. Chiurchiù, V., Lanuti, M., De Bardi, M., Battistini, L. & Maccarrone, M. The differential characterization of GPR55 receptor in human peripheral blood reveals a distinctive expression in monocytes and NK cells and a proinflammatory role in these innate cells. *Int Immunol* **27**, 153-160 (2015).
73. McAllister, S. D., Soroceanu, L. & Desprez, P. Y. The Antitumor Activity of Plant-Derived Non-Psychoactive Cannabinoids. *J Neuroimmune Pharmacol* **10**, 255-267 (2015).
74. Zogopoulos, P., Korkolopoulou, P., Patsouris, E. & Theocharis, S. The antitumor action of cannabinoids on glioma tumorigenesis. *Histol Histopathol* **30**, 629-645 (2015).
75. Morales, P. et al. Selective, nontoxic CB(2) cannabinoid o-quinone with in vivo activity against triple-negative breast cancer. *J Med Chem* **58**, 2256-2264 (2015).
76. Gasperi, V. et al. Regulation of inflammation and proliferation of human bladder carcinoma cells by type-1 and type-2 cannabinoid receptors. *Life Sci* **138**, 41-51 (2015).
77. Singer, E. et al. Reactive oxygen species-mediated therapeutic response and resistance in glioblastoma. *Cell Death Dis* **6**, e1601 (2015).
78. Fridlender, M., Kapulnik, Y. & Koltai, H. Plant derived substances with anti-cancer activity: from folklore to practice. *Front Plant Sci* **6**, 799 (2015).
79. Patil, K. R., Goyal, S. N., Sharma, C., Patil, C. R. & Ojha, S. Phytocannabinoids for Cancer Therapeutics: Recent Updates and Future Prospects. *Curr Med Chem* **22**, 3472-3501 (2015).
80. Afsharimani, B., Kindl, K., Good, P. & Hardy, J. Pharmacological options for the management of refractory cancer pain-what is the evidence. *Support Care Cancer* **23**, 1473-1481 (2015).
81. Sasso, O. et al. Peripheral FAAH and soluble epoxide hydrolase inhibitors are synergistically antinociceptive. *Pharmacol Res* **97**, 7-15 (2015).
82. Ezeoke, C. C. & Morley, J. E. Pathophysiology of anorexia in the cancer cachexia syndrome. *J Cachexia Sarcopenia Muscle* **6**, 287-302 (2015).
83. Salazar, M. et al. Oncosuppressive functions of tribbles pseudokinase 3. *Biochem Soc Trans* **43**, 1122-1126 (2015).
84. Ortega, A. et al. On the effects of CP 55-940 and other cannabinoid receptor agonists in C6 and U373 cell lines. *Toxicol In Vitro* **29**, 1941-1951 (2015).
85. Awan, S. & Wilcock, A. Nonopioid medication for the relief of refractory breathlessness. *Curr Opin Support Palliat Care* **9**, 227-231 (2015).
86. Ramer, R. & Hinz, B. New insights into antimetastatic and antiangiogenic effects of cannabinoids. *Int Rev Cell Mol Biol* **314**, 43-116 (2015).
87. Elbaz, M. et al. Modulation of the tumor microenvironment and inhibition of EGF/EGFR pathway: novel anti-tumor mechanisms of Cannabidiol in breast cancer. *Mol Oncol* **9**, 906-919 (2015).
88. Santana, T. A., Trufelli, D. C., Matos, L. L., Cruz, F. M. & Del Giglio, A. Meta-analysis of adjunctive non-NK1 receptor antagonist medications for the control of acute and delayed chemotherapy-induced nausea and vomiting. *Support Care*

- Cancer* **23**, 213-222 (2015).
89. Murnion, B. Medicinal cannabis. *Aust Prescr* **38**, 212-215 (2015).
 90. Kramer, J. L. Medical marijuana for cancer. *CA Cancer J Clin* **65**, 109-122 (2015).
 91. Jensen, B., Chen, J., Furnish, T. & Wallace, M. Medical Marijuana and Chronic Pain: a Review of Basic Science and Clinical Evidence. *Curr Pain Headache Rep* **19**, 50 (2015).
 92. Kihara, Y., Mizuno, H. & Chun, J. Lysophospholipid receptors in drug discovery. *Exp Cell Res* **333**, 171-177 (2015).
 93. Pac-Soo, C. K., Mathew, H. & Ma, D. Ischaemic conditioning strategies reduce ischaemia/reperfusion-induced organ injury. *Br J Anaesth* **114**, 204-216 (2015).
 94. Uhelski, M. L., Khasabova, I. A. & Simone, D. A. Inhibition of anandamide hydrolysis attenuates nociceptor sensitization in a murine model of chemotherapy-induced peripheral neuropathy. *J Neurophysiol* **113**, 1501-1510 (2015).
 95. Scott, K. A., Dennis, J. L., Dalglish, A. G. & Liu, W. M. Inhibiting Heat Shock Proteins Can Potentiate the Cytotoxic Effect of Cannabidiol in Human Glioma Cells. *Anticancer Res* **35**, 5827-5837 (2015).
 96. Martín-Banderas, L. et al. In vitro and in vivo evaluation of Δ^9 -tetrahydrocannabinol/PLGA nanoparticles for cancer chemotherapy. *Int J Pharm* **487**, 205-212 (2015).
 97. Koller, V. J. et al. Genotoxic properties of representatives of alkylindazoles and aminoalkyl-indoles which are consumed as synthetic cannabinoids. *Food Chem Toxicol* **80**, 130-136 (2015).
 98. Armstrong, J. L. et al. Exploiting cannabinoid-induced cytotoxic autophagy to drive melanoma cell death. *J Invest Dermatol* **135**, 1629-1637 (2015).
 99. Degenhardt, L. et al. Experience of adjunctive cannabis use for chronic non-cancer pain: findings from the Pain and Opioids IN Treatment (POINT) study. *Drug Alcohol Depend* **147**, 144-150 (2015).
 100. Dion, C. et al. Evaluation of the anti-inflammatory and antioxidative potential of four fern species from China intended for use as food supplements. *Nat Prod Commun* **10**, 597-603 (2015).
 101. Izzo, A. A., Muccioli, G. G., Ruggieri, M. R. & Schicho, R. Endocannabinoids and the Digestive Tract and Bladder in Health and Disease. *Handb Exp Pharmacol* **231**, 423-447 (2015).
 102. Velasco, G., Sánchez, C. & Guzmán, M. Endocannabinoids and Cancer. *Handb Exp Pharmacol* **231**, 449-472 (2015).
 103. Glodde, N., Jakobs, M., Bald, T., Tüting, T. & Gaffal, E. Differential role of cannabinoids in the pathogenesis of skin cancer. *Life Sci* **138**, 35-40 (2015).
 104. Fowler, C. J. Delta(9) -tetrahydrocannabinol and cannabidiol as potential curative agents for cancer: A critical examination of the preclinical literature. *Clin Pharmacol Ther* **97**, 587-596 (2015).
 105. Abrams, D. I. & Guzman, M. Cannabis in cancer care. *Clin Pharmacol Ther* **97**, 575-586 (2015).
 106. Nelson, B. Cannabis conundrum: evidence of harm?: Opposition to marijuana use is often rooted in arguments about the drug's harm to children and adults, but the scientific evidence is seldom clear-cut. *Cancer Cytopathol* **123**, 1-2 (2015).
 107. Cathcart, P., de Giorgio, A. & Stebbing, J. Cannabis and cancer: reality or pipe

- dream. *Lancet Oncol* **16**, 1291-1292 (2015).
108. Martínez-Martínez, E. et al. Cannabinoids receptor type 2, CB2, expression correlates with human colon cancer progression and predicts patient survival. *Oncoscience* **2**, 131-141 (2015).
 109. Lynch, M. E. & Ware, M. A. Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials. *J Neuroimmune Pharmacol* **10**, 293-301 (2015).
 110. Smith, L. A., Azariah, F., Lavender, V. T., Stoner, N. S. & Bettiol, S. Cannabinoids for nausea and vomiting in adults with cancer receiving chemotherapy. *Cochrane Database Syst Rev* CD009464 (2015).
 111. Xu, D., Wang, J., Zhou, Z., He, Z. & Zhao, Q. Cannabinoid WIN55, 212-2 induces cell cycle arrest and inhibits the proliferation and migration of human BEL7402 hepatocellular carcinoma cells. *Mol Med Rep* **12**, 7963-7970 (2015).
 112. Esain, V. et al. Cannabinoid Receptor-2 Regulates Embryonic Hematopoietic Stem Cell Development via Prostaglandin E2 and P-Selectin Activity. *Stem Cells* **33**, 2596-2612 (2015).
 113. Nabissi, M. et al. Cannabidiol stimulates Aml-1a-dependent glial differentiation and inhibits glioma stem-like cells proliferation by inducing autophagy in a TRPV2-dependent manner. *Int J Cancer* **137**, 1855-1869 (2015).
 114. Sophocleous, A. et al. Bone Cell-autonomous Contribution of Type 2 Cannabinoid Receptor to Breast Cancer-induced Osteolysis. *J Biol Chem* **290**, 22049-22060 (2015).
 115. Takeda, S. Δ 9-Tetrahydrocannabinol targeting estrogen receptor signaling: the possible mechanism of action coupled with endocrine disruption. *Biol Pharm Bull* **37**, 1435-1438 (2014).
 116. Takeda, S. et al. Δ (9)-THC modulation of fatty acid 2-hydroxylase (FA2H) gene expression: possible involvement of induced levels of PPAR α in MDA-MB-231 breast cancer cells. *Toxicology* **326**, 18-24 (2014).
 117. Benyamina, A. & Reynaud, M. [Therapeutic use of cannabis derivatives]. *Rev Prat* **64**, 165-168 (2014).
 118. Zdrojewicz, Z., Pypno, D., Cabafa, K., Bugaj, B. & Waracki, M. [Potential applications of marijuana and cannabinoids in medicine]. *Pol Merkur Lekarski* **37**, 248-252 (2014).
 119. Pellerito, O. et al. WIN induces apoptotic cell death in human colon cancer cells through a block of autophagic flux dependent on PPAR γ down-regulation. *Apoptosis* **19**, 1029-1042 (2014).
 120. Currie, G. L., Sena, E. S., Fallon, M. T., Macleod, M. R. & Colvin, L. A. Using animal models to understand cancer pain in humans. *Curr Pain Headache Rep* **18**, 423 (2014).
 121. Pedro, E. & Rodríguez, F. M. Use and medicalization of marijuana in cancer patients. *Bol Asoc Med P R* **106**, 55-59 (2014).
 122. Morty, R. E. & Kuebler, W. M. TRPV4: an exciting new target to promote alveolocapillary barrier function. *Am J Physiol Lung Cell Mol Physiol* **307**, L817-21 (2014).
 123. Robson, P. J. Therapeutic potential of cannabinoid medicines. *Drug Test Anal* **6**, 24-30 (2014).

124. Cao, C. et al. The potential therapeutic effects of THC on Alzheimer's disease. *J Alzheimers Dis* **42**, 973-984 (2014).
125. Cipriano, M., Gouveia-Figueira, S., Persson, E., Nording, M. & Fowler, C. J. The influence of monoacylglycerol lipase inhibition upon the expression of epidermal growth factor receptor in human PC-3 prostate cancer cells. *BMC Res Notes* **7**, 441 (2014).
126. Morelli, M. B. et al. The effects of cannabidiol and its synergism with bortezomib in multiple myeloma cell lines. A role for transient receptor potential vanilloid type-2. *Int J Cancer* **134**, 2534-2546 (2014).
127. Scott, K. A., Dalglish, A. G. & Liu, W. M. The combination of cannabidiol and Δ^9 -tetrahydrocannabinol enhances the anticancer effects of radiation in an orthotopic murine glioma model. *Mol Cancer Ther* **13**, 2955-2967 (2014).
128. Hall, W. & Degenhardt, L. The adverse health effects of chronic cannabis use. *Drug Test Anal* **6**, 39-45 (2014).
129. Murase, R. et al. Targeting multiple cannabinoid anti-tumour pathways with a resorcinol derivative leads to inhibition of advanced stages of breast cancer. *Br J Pharmacol* **171**, 4464-4477 (2014).
130. Moreno, E. et al. Targeting CB2-GPR55 receptor heteromers modulates cancer cell signaling. *J Biol Chem* **289**, 21960-21972 (2014).
131. Rocha, F. C., Dos Santos Júnior, J. G., Stefano, S. C. & da Silveira, D. X. Systematic review of the literature on clinical and experimental trials on the antitumor effects of cannabinoids in gliomas. *J Neurooncol* **116**, 11-24 (2014).
132. Castaneto, M. S. et al. Synthetic cannabinoids: epidemiology, pharmacodynamics, and clinical implications. *Drug Alcohol Depend* **144**, 12-41 (2014).
133. Hermanson, D. J., Gamble-George, J. C., Marnett, L. J. & Patel, S. Substrate-selective COX-2 inhibition as a novel strategy for therapeutic endocannabinoid augmentation. *Trends Pharmacol Sci* **35**, 358-367 (2014).
134. Moreno-Sanz, G. et al. Structural determinants of peripheral O-arylcarbamate FAAH inhibitors render them dual substrates for Abcb1 and Abcg2 and restrict their access to the brain. *Pharmacol Res* **87**, 87-93 (2014).
135. Farrell, M., Buchbinder, R. & Hall, W. Should doctors prescribe cannabinoids. *BMJ* **348**, g2737 (2014).
136. Kushchayeva, Y., Jensen, K., Burman, K. D. & Vasko, V. Repositioning therapy for thyroid cancer: new insights on established medications. *Endocr Relat Cancer* **21**, R183-94 (2014).
137. Sharkey, K. A., Darmani, N. A. & Parker, L. A. Regulation of nausea and vomiting by cannabinoids and the endocannabinoid system. *Eur J Pharmacol* **722**, 134-146 (2014).
138. Sailler, S. et al. Regulation of circulating endocannabinoids associated with cancer and metastases in mice and humans. *Oncoscience* **1**, 272-282 (2014).
139. Nevalainen, T. Recent development of CB2 selective and peripheral CB1/CB2 cannabinoid receptor ligands. *Curr Med Chem* **21**, 187-203 (2014).
140. Kiagia, M., Syrigos, K. N. & Saif, M. W. Quality of life in patients with pancreatic cancer. *JOP* **15**, 317-318 (2014).
141. Gebeh, A. K., Willets, J. M., Marczylo, T. H. & Konje, J. C. Plasma anandamide and related n-acylethanolamide levels are not elevated in pregnancies complicated

- by hyperemesis gravidarum. *J Matern Fetal Neonatal Med* **27**, 954-959 (2014).
142. Macpherson, T., Armstrong, J. A., Criddle, D. N. & Wright, K. L. Physiological intestinal oxygen modulates the Caco-2 cell model and increases sensitivity to the phytocannabinoid cannabidiol. *In Vitro Cell Dev Biol Anim* **50**, 417-426 (2014).
 143. Kokubun, H., Uezono, Y. & Matoba, M. Novel method of determination of D9-tetrahydrocannabinol(THC) in human serum by high-performance liquid chromatography with electrochemical detection. *Gan To Kagaku Ryoho* **41**, 471-473 (2014).
 144. Gough, N., Miah, A. B. & Linch, M. Nonsurgical oncological management of cancer pain. *Curr Opin Support Palliat Care* **8**, 102-111 (2014).
 145. Esin, E. & Yalcin, S. Neuropathic cancer pain: What we are dealing with? How to manage it. *Onco Targets Ther* **7**, 599-618 (2014).
 146. Hill, K. P. Medical marijuana: more questions than answers. *J Psychiatr Pract* **20**, 389-391 (2014).
 147. Lee, S. K. et al. Management of cancer pain: 1. Wider implications of orthodox analgesics. *Int J Gen Med* **7**, 49-58 (2014).
 148. Bar-Sela, G., Avisar, A., Batash, R. & Schaffer, M. Is the clinical use of cannabis by oncology patients advisable. *Curr Med Chem* **21**, 1923-1930 (2014).
 149. Notaro, A. et al. Involvement of PAR-4 in cannabinoid-dependent sensitization of osteosarcoma cells to TRAIL-induced apoptosis. *Int J Biol Sci* **10**, 466-478 (2014).
 150. Koller, V. J. et al. Investigation of the in vitro toxicological properties of the synthetic cannabimimetic drug CP-47,497-C8. *Toxicol Appl Pharmacol* **277**, 164-171 (2014).
 151. Stachtari, C. C. et al. Interaction of a Cannabinoid-2 Agonist With Tramadol on Nociceptive Thresholds and Immune Responses in a Rat Model of Incisional Pain. *Am J Ther* (2014).
 152. Romano, B. et al. Inhibition of colon carcinogenesis by a standardized Cannabis sativa extract with high content of cannabidiol. *Phytomedicine* **21**, 631-639 (2014).
 153. Bakali, E. et al. Human urothelial cell lines as potential models for studying cannabinoid and excitatory receptor interactions in the urinary bladder. *Naunyn Schmiedebergs Arch Pharmacol* **387**, 581-589 (2014).
 154. Regal, K. M., Mercer, S. L. & Deweese, J. E. HU-331 is a catalytic inhibitor of topoisomerase II α . *Chem Res Toxicol* **27**, 2044-2051 (2014).
 155. Husni, A. S. et al. Evaluation of Phytocannabinoids from High Potency Cannabis sativa using In Vitro Bioassays to Determine Structure-Activity Relationships for Cannabinoid Receptor 1 and Cannabinoid Receptor 2. *Med Chem Res* **23**, 4295-4300 (2014).
 156. Walter, C. et al. Effects of 20 mg oral $\Delta(9)$ -tetrahydrocannabinol on the olfactory function of healthy volunteers. *Br J Clin Pharmacol* **78**, 961-969 (2014).
 157. Takeda, S. et al. Down-regulation of cyclooxygenase-2 (COX-2) by cannabidiolic acid in human breast cancer cells. *J Toxicol Sci* **39**, 711-716 (2014).
 158. Rosenthaler, S. et al. Differences in receptor binding affinity of several phytocannabinoids do not explain their effects on neural cell cultures. *Neurotoxicol Teratol* **46**, 49-56 (2014).
 159. Emery, S. M. et al. Combined antiproliferative effects of the aminoalkylindole WIN55,212-2 and radiation in breast cancer cells. *J Pharmacol Exp Ther* **348**, 293-

- 302 (2014).
160. Borrelli, F. et al. Colon carcinogenesis is inhibited by the TRPM8 antagonist cannabigerol, a Cannabis-derived non-psychotropic cannabinoid. *Carcinogenesis* **35**, 2787-2797 (2014).
 161. Kohnz, R. A. & Nomura, D. K. Chemical approaches to therapeutically target the metabolism and signaling of the endocannabinoid 2-AG and eicosanoids. *Chem Soc Rev* **43**, 6859-6869 (2014).
 162. Ramer, R., Fischer, S., Haustein, M., Manda, K. & Hinz, B. Cannabinoids inhibit angiogenic capacities of endothelial cells via release of tissue inhibitor of matrix metalloproteinases-1 from lung cancer cells. *Biochem Pharmacol* **91**, 202-216 (2014).
 163. Haustein, M., Ramer, R., Linnebacher, M., Manda, K. & Hinz, B. Cannabinoids increase lung cancer cell lysis by lymphokine-activated killer cells via upregulation of ICAM-1. *Biochem Pharmacol* **92**, 312-325 (2014).
 164. Davis, M. P. Cannabinoids in pain management: CB1, CB2 and non-classic receptor ligands. *Expert Opin Investig Drugs* **23**, 1123-1140 (2014).
 165. Chakravarti, B., Ravi, J. & Ganju, R. K. Cannabinoids as therapeutic agents in cancer: current status and future implications. *Oncotarget* **5**, 5852-5872 (2014).
 166. Yang, L. et al. Cannabidiol protects liver from binge alcohol-induced steatosis by mechanisms including inhibition of oxidative stress and increase in autophagy. *Free Radic Biol Med* **68**, 260-267 (2014).
 167. Ward, S. J. et al. Cannabidiol inhibits paclitaxel-induced neuropathic pain through 5-HT(1A) receptors without diminishing nervous system function or chemotherapy efficacy. *Br J Pharmacol* **171**, 636-645 (2014).
 168. Marks, M. A. et al. Association of marijuana smoking with oropharyngeal and oral tongue cancers: pooled analysis from the INHANCE consortium. *Cancer Epidemiol Biomarkers Prev* **23**, 160-171 (2014).
 169. Sousa-Valente, J., Varga, A., Ananthan, K., Khajuria, A. & Nagy, I. Anandamide in primary sensory neurons: too much of a good thing. *Eur J Neurosci* **39**, 409-418 (2014).
 170. Liberati, S. et al. Advances in transient receptor potential vanilloid-2 channel expression and function in tumor growth and progression. *Curr Protein Pept Sci* **15**, 732-737 (2014).
 171. Lynch, M. E., Cesar-Rittenberg, P. & Hohmann, A. G. A double-blind, placebo-controlled, crossover pilot trial with extension using an oral mucosal cannabinoid extract for treatment of chemotherapy-induced neuropathic pain. *J Pain Symptom Manage* **47**, 166-173 (2014).
 172. Takeda, S. et al. $\Delta(9)$ -Tetrahydrocannabinol disrupts estrogen-signaling through up-regulation of estrogen receptor β (ER β). *Chem Res Toxicol* **26**, 1073-1079 (2013).
 173. Sagie, S., Eliasi, Y., Livneh, I., Bart, Y. & Monovich, E. [Short-and long-term effects of cannabinoids on memory, cognition and mental illness]. *Harefuah* **152**, 737-41, 751 (2013).
 174. Björkhem-Bergman, L. & Wallin, C. [Methylphenidate and cannabinoids may have a place in palliative care. Literature review and clinical experience provides evidence]. *Lakartidningen* **110**, 1409-1411 (2013).
 175. Takeda, S. [Medicinal chemistry and pharmacology focused on cannabidiol, a

- major component of the fiber-type cannabis]. *Yakugaku Zasshi* **133**, 1093-1101 (2013).
176. Quah, S. C. Would you go broke to stay alive in Singapore? Further analysis of a survey on how costs may affect choice of therapy. *Am J Hosp Palliat Care* **30**, 541-547 (2013).
 177. Nabissi, M., Morelli, M. B., Santoni, M. & Santoni, G. Triggering of the TRPV2 channel by cannabidiol sensitizes glioblastoma cells to cytotoxic chemotherapeutic agents. *Carcinogenesis* **34**, 48-57 (2013).
 178. Koller, V. J., Zlabinger, G. J., Auwärter, V., Fuchs, S. & Knasmueller, S. Toxicological profiles of selected synthetic cannabinoids showing high binding affinities to the cannabinoid receptor subtype CB₁. *Arch Toxicol* **87**, 1287-1297 (2013).
 179. Pacher, P. Towards the use of non-psychoactive cannabinoids for prostate cancer. *Br J Pharmacol* **168**, 76-78 (2013).
 180. Mulvihill, M. M. & Nomura, D. K. Therapeutic potential of monoacylglycerol lipase inhibitors. *Life Sci* **92**, 492-497 (2013).
 181. Reynolds, T. D. & Osborn, H. L. The use of cannabinoids in chronic pain. *BMJ Case Rep* **2013**, (2013).
 182. Salazar, M. et al. The pseudokinase tribbles homologue-3 plays a crucial role in cannabinoid anticancer action. *Biochim Biophys Acta* **1831**, 1573-1578 (2013).
 183. Hazekamp, A. & Heerdink, E. R. The prevalence and incidence of medicinal cannabis on prescription in The Netherlands. *Eur J Clin Pharmacol* **69**, 1575-1580 (2013).
 184. Borgelt, L. M., Franson, K. L., Nussbaum, A. M. & Wang, G. S. The pharmacologic and clinical effects of medical cannabis. *Pharmacotherapy* **33**, 195-209 (2013).
 185. Kapoor, S. The inhibitory effects of cannabidiol on systemic malignant tumors. *J Pain Symptom Manage* **45**, e1 (2013).
 186. Nallu, A., Mannuel, H. D. & Hussain, A. Testicular germ cell tumors: biology and clinical update. *Curr Opin Oncol* **25**, 266-272 (2013).
 187. Morales, P. et al. Synthetic cannabinoid quinones: preparation, in vitro antiproliferative effects and in vivo prostate antitumor activity. *Eur J Med Chem* **70**, 111-119 (2013).
 188. Nakajima, J., Nakae, D. & Yasukawa, K. Structure-dependent inhibitory effects of synthetic cannabinoids against 12-O-tetradecanoylphorbol-13-acetate-induced inflammation and skin tumour promotion in mice. *J Pharm Pharmacol* **65**, 1223-1230 (2013).
 189. Van Dross, R., Soliman, E., Jha, S., Johnson, T. & Mukhopadhyay, S. Receptor-dependent and receptor-independent endocannabinoid signaling: a therapeutic target for regulation of cancer growth. *Life Sci* **92**, 463-466 (2013).
 190. Hernán Pérez de la Ossa, D. et al. Preparation and characterization of $\Delta(9)$ -tetrahydrocannabinol-loaded biodegradable polymeric microparticles and their antitumoral efficacy on cancer cell lines. *J Drug Target* **21**, 710-718 (2013).
 191. Hong, Y. et al. PPAR γ mediates the effects of WIN55,212-2, an synthetic cannabinoid, on the proliferation and apoptosis of the BEL-7402 hepatocarcinoma cells. *Mol Biol Rep* **40**, 6287-6293 (2013).

192. Cui, J. H., Ju, J. & Yoon, M. H. Pharmacology of cannabinoid receptor agonists and a cyclooxygenase-2 inhibitor in rat bone tumor pain. *Pharmacology* **92**, 150-157 (2013).
193. Tanasescu, R. & Constantinescu, C. S. Pharmacokinetic evaluation of nabiximols for the treatment of multiple sclerosis pain. *Expert Opin Drug Metab Toxicol* **9**, 1219-1228 (2013).
194. Benedetti, F., Thoen, W., Blanchard, C., Vighetti, S. & Arduino, C. Pain as a reward: changing the meaning of pain from negative to positive co-activates opioid and cannabinoid systems. *Pain* **154**, 361-367 (2013).
195. Kargl, J. et al. O-1602, an atypical cannabinoid, inhibits tumor growth in colitis-associated colon cancer through multiple mechanisms. *J Mol Med (Berl)* **91**, 449-458 (2013).
196. De Petrocellis, L. et al. Non-THC cannabinoids inhibit prostate carcinoma growth in vitro and in vivo: pro-apoptotic effects and underlying mechanisms. *Br J Pharmacol* **168**, 79-102 (2013).
197. Nejati, R., Kovacic, D. & Slominski, A. Neuro-immune-endocrine functions of the skin: an overview. *Expert Rev Dermatol* **8**, 581-583 (2013).
198. Gupta, M., Davis, M., LeGrand, S., Walsh, D. & Lagman, R. Nausea and vomiting in advanced cancer: the Cleveland Clinic protocol. *J Support Oncol* **11**, 8-13 (2013).
199. Hernán Pérez de la Ossa, D. et al. Local delivery of cannabinoid-loaded microparticles inhibits tumor growth in a murine xenograft model of glioblastoma multiforme. *PLoS One* **8**, e54795 (2013).
200. Stanley, C. P., Hind, W. H. & O'Sullivan, S. E. Is the cardiovascular system a therapeutic target for cannabidiol. *Br J Clin Pharmacol* **75**, 313-322 (2013).
201. Vara, D., Morell, C., Rodríguez-Henche, N. & Diaz-Laviada, I. Involvement of PPAR γ in the antitumoral action of cannabinoids on hepatocellular carcinoma. *Cell Death Dis* **4**, e618 (2013).
202. Takeda, S. et al. Induction of the fatty acid 2-hydroxylase (FA2H) gene by $\Delta(9)$ -tetrahydrocannabinol in human breast cancer cells. *J Toxicol Sci* **38**, 305-308 (2013).
203. Soroceanu, L. et al. Id-1 is a key transcriptional regulator of glioblastoma aggressiveness and a novel therapeutic target. *Cancer Res* **73**, 1559-1569 (2013).
204. Wu, C. S. et al. GPR55, a G-protein coupled receptor for lysophosphatidylinositol, plays a role in motor coordination. *PLoS One* **8**, e60314 (2013).
205. Zhao, P. & Abood, M. E. GPR55 and GPR35 and their relationship to cannabinoid and lysophospholipid receptors. *Life Sci* **92**, 453-457 (2013).
206. Pourkhalili, N. et al. Evaluation of anti-invasion effect of cannabinoids on human hepatocarcinoma cells. *Toxicol Mech Methods* **23**, 120-126 (2013).
207. Gustafsson, S. B. et al. Effects of cannabinoids and related fatty acids upon the viability of P19 embryonal carcinoma cells. *Arch Toxicol* **87**, 1939-1951 (2013).
208. Lozano-Ondoua, A. N. et al. Disease modification of breast cancer-induced bone remodeling by cannabinoid 2 receptor agonists. *J Bone Miner Res* **28**, 92-107 (2013).
209. Rimmerman, N. et al. Direct modulation of the outer mitochondrial membrane channel, voltage-dependent anion channel 1 (VDAC1) by cannabidiol: a novel

- mechanism for cannabinoid-induced cell death. *Cell Death Dis* **4**, e949 (2013).
210. Higgins, A., Yuan, S., Wang, Y. & Burrell, B. D. Differential modulation of nociceptive versus non-nociceptive synapses by endocannabinoids. *Mol Pain* **9**, 26 (2013).
 211. Petronzi, C. et al. Cyclohexa-2,5-diene-1,4-dione-based antiproliferative agents: design, synthesis, and cytotoxic evaluation. *J Exp Clin Cancer Res* **32**, 24 (2013).
 212. Cridge, B. J. & Rosengren, R. J. Critical appraisal of the potential use of cannabinoids in cancer management. *Cancer Manag Res* **5**, 301-313 (2013).
 213. Ramer, R. et al. COX-2 and PPAR- γ confer cannabidiol-induced apoptosis of human lung cancer cells. *Mol Cancer Ther* **12**, 69-82 (2013).
 214. Brandi, J., Dando, I., Palmieri, M., Donadelli, M. & Cecconi, D. Comparative proteomic and phosphoproteomic profiling of pancreatic adenocarcinoma cells treated with CB1 or CB2 agonists. *Electrophoresis* **34**, 1359-1368 (2013).
 215. Tuca, A., Jimenez-Fonseca, P. & Gascón, P. Clinical evaluation and optimal management of cancer cachexia. *Crit Rev Oncol Hematol* **88**, 625-636 (2013).
 216. El Amrani, L. et al. Changes on metabolic parameters induced by acute cannabinoid administration (CBD, THC) in a rat experimental model of nutritional vitamin A deficiency. *Nutr Hosp* **28**, 857-867 (2013).
 217. Prather, P. L. et al. CB1 and CB2 receptors are novel molecular targets for Tamoxifen and 4OH-Tamoxifen. *Biochem Biophys Res Commun* **441**, 339-343 (2013).
 218. Singh, Y. & Bali, C. Cannabis extract treatment for terminal acute lymphoblastic leukemia with a Philadelphia chromosome mutation. *Case Rep Oncol* **6**, 585-592 (2013).
 219. Howard, P., Twycross, R., Shuster, J., Mihalyo, M. & Wilcock, A. Cannabinoids. *J Pain Symptom Manage* **46**, 142-149 (2013).
 220. Behrend, S. W. Cannabinoids may be therapeutic in breast cancer. *Oncol Nurs Forum* **40**, 191-192 (2013).
 221. Dando, I. et al. Cannabinoids inhibit energetic metabolism and induce AMPK-dependent autophagy in pancreatic cancer cells. *Cell Death Dis* **4**, e664 (2013).
 222. Brown, I. et al. Cannabinoids and omega-3/6 endocannabinoids as cell death and anticancer modulators. *Prog Lipid Res* **52**, 80-109 (2013).
 223. Ellert-Miklaszewska, A., Ciecchomska, I. & Kaminska, B. Cannabinoid signaling in glioma cells. *Adv Exp Med Biol* **986**, 209-220 (2013).
 224. Klein Nulent, T. J. et al. Cannabinoid receptor-2 immunoreactivity is associated with survival in squamous cell carcinoma of the head and neck. *Br J Oral Maxillofac Surg* **51**, 604-609 (2013).
 225. Xian, X. S., Park, H., Choi, M. G. & Park, J. M. Cannabinoid receptor agonist as an alternative drug in 5-fluorouracil-resistant gastric cancer cells. *Anticancer Res* **33**, 2541-2547 (2013).
 226. Harvey, B. S., Nicotra, L. L., Vu, M. & Smid, S. D. Cannabinoid CB2 receptor activation attenuates cytokine-evoked mucosal damage in a human colonic explant model without changing epithelial permeability. *Cytokine* **63**, 209-217 (2013).
 227. Solinas, M. et al. Cannabidiol, a non-psychoactive cannabinoid compound, inhibits proliferation and invasion in U87-MG and T98G glioma cells through a multitarget effect. *PLoS One* **8**, e76918 (2013).

228. Feinshtein, V. et al. Cannabidiol enhances xenobiotic permeability through the human placental barrier by direct inhibition of breast cancer resistance protein: an ex vivo study. *Am J Obstet Gynecol* **209**, 573.e1-573.e15 (2013).
229. Feinshtein, V. et al. Cannabidiol changes P-gp and BCRP expression in trophoblast cell lines. *PeerJ* **1**, e153 (2013).
230. Massi, P., Solinas, M., Cinquina, V. & Parolaro, D. Cannabidiol as potential anticancer drug. *Br J Clin Pharmacol* **75**, 303-312 (2013).
231. Adinolfi, B. et al. Anticancer activity of anandamide in human cutaneous melanoma cells. *Eur J Pharmacol* **718**, 154-159 (2013).
232. Johnson, J. R., Lossignol, D., Burnell-Nugent, M. & Fallon, M. T. An open-label extension study to investigate the long-term safety and tolerability of THC/CBD oromucosal spray and oromucosal THC spray in patients with terminal cancer-related pain refractory to strong opioid analgesics. *J Pain Symptom Manage* **46**, 207-218 (2013).
233. Cannarsa, R., Carretta, D., Lattanzio, F., Candeletti, S. & Romualdi, P. $\Delta(9)$ -Tetrahydrocannabinol decreases NOP receptor density and mRNA levels in human SH-SY5Y cells. *J Mol Neurosci* **46**, 285-292 (2012).
234. Benze, G., Geyer, A., Alt-Epping, B. & Nauck, F. [Treatment of nausea and vomiting with 5HT₃ receptor antagonists, steroids, antihistamines, anticholinergics, somatostatin antagonists, benzodiazepines and cannabinoids in palliative care patients : a systematic review]. *Schmerz* **26**, 481-499 (2012).
235. Tkaczyk, M., Florek, E. & Piekoszewski, W. [Marihuana and cannabinoids as medicaments]. *Przeegl Lek* **69**, 1095-1097 (2012).
236. Velasco, G., Sánchez, C. & Guzmán, M. Towards the use of cannabinoids as antitumour agents. *Nat Rev Cancer* **12**, 436-444 (2012).
237. Cheng, K. C., Li, Y. X. & Cheng, J. T. The use of herbal medicine in cancer-related anorexia/ cachexia treatment around the world. *Curr Pharm Des* **18**, 4819-4826 (2012).
238. Morelli, M. B. et al. The transient receptor potential vanilloid-2 cation channel impairs glioblastoma stem-like cell proliferation and promotes differentiation. *Int J Cancer* **131**, E1067-77 (2012).
239. Ramos, J. A. & Bianco, F. J. The role of cannabinoids in prostate cancer: Basic science perspective and potential clinical applications. *Indian J Urol* **28**, 9-14 (2012).
240. Bowles, D. W., O'Bryant, C. L., Camidge, D. R. & Jimeno, A. The intersection between cannabis and cancer in the United States. *Crit Rev Oncol Hematol* **83**, 1-10 (2012).
241. Horváth, B., Mukhopadhyay, P., Haskó, G. & Pacher, P. The endocannabinoid system and plant-derived cannabinoids in diabetes and diabetic complications. *Am J Pathol* **180**, 432-442 (2012).
242. Pertwee, R. G. Targeting the endocannabinoid system with cannabinoid receptor agonists: pharmacological strategies and therapeutic possibilities. *Philos Trans R Soc Lond B Biol Sci* **367**, 3353-3363 (2012).
243. van Hasselt, J. G. et al. Severe cannabinoid intoxication in a patient with non-small-cell lung cancer. *J Palliat Care* **28**, 60-61 (2012).
244. Idris, A. I. & Ralston, S. H. Role of cannabinoids in the regulation of bone

- remodeling. *Front Endocrinol (Lausanne)* **3**, 136 (2012).
245. Farsandaj, N., Ghahremani, M. H. & Ostad, S. N. Role of cannabinoid and vanilloid receptors in invasion of human breast carcinoma cells. *J Environ Pathol Toxicol Oncol* **31**, 377-387 (2012).
 246. Kenessey, I. et al. Revisiting CB1 receptor as drug target in human melanoma. *Pathol Oncol Res* **18**, 857-866 (2012).
 247. Lacson, J. C. et al. Population-based case-control study of recreational drug use and testis cancer risk confirms an association between marijuana use and nonseminoma risk. *Cancer* **118**, 5374-5383 (2012).
 248. Hernán Pérez de la Ossa, D. et al. Poly- ϵ -caprolactone microspheres as a drug delivery system for cannabinoid administration: development, characterization and in vitro evaluation of their antitumoral efficacy. *J Control Release* **161**, 927-932 (2012).
 249. Henstridge, C. M. Off-target cannabinoid effects mediated by GPR55. *Pharmacology* **89**, 179-187 (2012).
 250. Klumpers, L. E. et al. Novel $\Delta(9)$ -tetrahydrocannabinol formulation Namisol® has beneficial pharmacokinetics and promising pharmacodynamic effects. *Br J Clin Pharmacol* **74**, 42-53 (2012).
 251. Brower, V. New pain drugs in pipeline, but challenges to usage remain. *J Natl Cancer Inst* **104**, 503-505 (2012).
 252. Portenoy, R. K. et al. Nabiximols for opioid-treated cancer patients with poorly-controlled chronic pain: a randomized, placebo-controlled, graded-dose trial. *J Pain* **13**, 438-449 (2012).
 253. Gurley, S. N. et al. Mechanism of anti-glioma activity and in vivo efficacy of the cannabinoid ligand KM-233. *J Neurooncol* **110**, 163-177 (2012).
 254. Spiro, A. S., Wong, A., Boucher, A. A. & Arnold, J. C. Enhanced brain disposition and effects of $\Delta 9$ -tetrahydrocannabinol in P-glycoprotein and breast cancer resistance protein knockout mice. *PLoS One* **7**, e35937 (2012).
 255. Harvey, B. S., Ohlsson, K. S., Mååg, J. L., Musgrave, I. F. & Smid, S. D. Contrasting protective effects of cannabinoids against oxidative stress and amyloid- β evoked neurotoxicity in vitro. *Neurotoxicology* **33**, 138-146 (2012).
 256. Lopes, C. F. et al. Concomitant consumption of marijuana, alcohol and tobacco in oral squamous cell carcinoma development and progression: recent advances and challenges. *Arch Oral Biol* **57**, 1026-1033 (2012).
 257. Aviello, G. et al. Chemopreventive effect of the non-psychoactive phytocannabinoid cannabidiol on experimental colon cancer. *J Mol Med (Berl)* **90**, 925-934 (2012).
 258. Arnold, J. C., Hone, P., Holland, M. L. & Allen, J. D. CB2 and TRPV1 receptors mediate cannabinoid actions on MDR1 expression in multidrug resistant cells. *Pharmacol Rep* **64**, 751-757 (2012).
 259. Sagredo, O., Pazos, M. R., Valdeolivas, S. & Fernandez-Ruiz, J. Cannabinoids: novel medicines for the treatment of Huntington's disease. *Recent Pat CNS Drug Discov* **7**, 41-48 (2012).
 260. Caffarel, M. M., Andradas, C., Pérez-Gómez, E., Guzmán, M. & Sánchez, C. Cannabinoids: a new hope for breast cancer therapy. *Cancer Treat Rev* **38**, 911-918 (2012).

261. Echigo, R., Sugimoto, N., Yachie, A. & Ohno-Shosaku, T. Cannabinoids inhibit peptidoglycan-induced phosphorylation of NF- κ B and cell growth in U87MG human malignant glioma cells. *Oncol Rep* **28**, 1176-1180 (2012).
262. Todaro, B. Cannabinoids in the treatment of chemotherapy-induced nausea and vomiting. *J Natl Compr Canc Netw* **10**, 487-492 (2012).
263. Calvaruso, G., Pellerito, O., Notaro, A. & Giuliano, M. Cannabinoid-associated cell death mechanisms in tumor models (review). *Int J Oncol* **41**, 407-413 (2012).
264. Kleyer, J. et al. Cannabinoid receptor trafficking in peripheral cells is dynamically regulated by a binary biochemical switch. *Biochem Pharmacol* **83**, 1393-1412 (2012).
265. Takeda, S. et al. Cannabidiolic acid, a major cannabinoid in fiber-type cannabis, is an inhibitor of MDA-MB-231 breast cancer cell migration. *Toxicol Lett* **214**, 314-319 (2012).
266. Ramer, R. et al. Cannabidiol inhibits lung cancer cell invasion and metastasis via intercellular adhesion molecule-1. *FASEB J* **26**, 1535-1548 (2012).
267. Solinas, M. et al. Cannabidiol inhibits angiogenesis by multiple mechanisms. *Br J Pharmacol* **167**, 1218-1231 (2012).
268. Thapa, D. et al. Anti-tumor activity of the novel hexahydrocannabinol analog LYR-8 in Human colorectal tumor xenograft is mediated through the inhibition of Akt and hypoxia-inducible factor-1 α activation. *Biol Pharm Bull* **35**, 924-932 (2012).
269. Vidinský, B. et al. Anti-proliferative and anti-angiogenic effects of CB2R agonist (JWH-133) in non-small lung cancer cells (A549) and human umbilical vein endothelial cells: an in vitro investigation. *Folia Biol (Praha)* **58**, 75-80 (2012).
270. Schicho, R. & Storr, M. A potential role for GPR55 in gastrointestinal functions. *Curr Opin Pharmacol* **12**, 653-658 (2012).
271. Gray, K. M. et al. A double-blind randomized controlled trial of N-acetylcysteine in cannabis-dependent adolescents. *Am J Psychiatry* **169**, 805-812 (2012).
272. Naftali, T. [Medical cannabis: the opportunity versus the temptation]. *Harefuah* **150**, 911-2, 935 (2011).
273. Wasik, A. M. et al. WIN55,212-2 induces cytoplasmic vacuolation in apoptosis-resistant MCL cells. *Cell Death Dis* **2**, e225 (2011).
274. Glare, P., Miller, J., Nikolova, T. & Tickoo, R. Treating nausea and vomiting in palliative care: a review. *Clin Interv Aging* **6**, 243-259 (2011).
275. Karasu, T., Marczylo, T. H., Maccarrone, M. & Konje, J. C. The role of sex steroid hormones, cytokines and the endocannabinoid system in female fertility. *Hum Reprod Update* **17**, 347-361 (2011).
276. Wasik, A. M., Christensson, B. & Sander, B. The role of cannabinoid receptors and the endocannabinoid system in mantle cell lymphoma and other non-Hodgkin lymphomas. *Semin Cancer Biol* **21**, 313-321 (2011).
277. Hu, G., Ren, G. & Shi, Y. The putative cannabinoid receptor GPR55 promotes cancer cell proliferation. *Oncogene* **30**, 139-141 (2011).
278. Díaz-Laviada, I. The endocannabinoid system in prostate cancer. *Nat Rev Urol* **8**, 553-561 (2011).
279. Guindon, J. & Hohmann, A. G. The endocannabinoid system and cancer: therapeutic implication. *Br J Pharmacol* **163**, 1447-1463 (2011).
280. Scuderi, M. R. et al. The antimitogenic effect of the cannabinoid receptor agonist

- WIN55212-2 on human melanoma cells is mediated by the membrane lipid raft. *Cancer Lett* **310**, 240-249 (2011).
281. Moreno-Sanz, G. et al. The ABC membrane transporter ABCG2 prevents access of FAAH inhibitor URB937 to the central nervous system. *Pharmacol Res* **64**, 359-363 (2011).
282. Russo, E. B. Taming THC: potential cannabis synergy and phytocannabinoid-terpenoid entourage effects. *Br J Pharmacol* **163**, 1344-1364 (2011).
283. Mavromoustakos, T. et al. Strategies in the rational drug design. *Curr Med Chem* **18**, 2517-2530 (2011).
284. Lorente, M. et al. Stimulation of the midkine/ALK axis renders glioma cells resistant to cannabinoid antitumoral action. *Cell Death Differ* **18**, 959-973 (2011).
285. Lorente, M. et al. Stimulation of ALK by the growth factor midkine renders glioma cells resistant to autophagy-mediated cell death. *Autophagy* **7**, 1071-1073 (2011).
286. Foroughi, M., Hendson, G., Sargent, M. A. & Steinbok, P. Spontaneous regression of septum pellucidum/forniceal pilocytic astrocytomas--possible role of Cannabis inhalation. *Childs Nerv Syst* **27**, 671-679 (2011).
287. Karschner, E. L., Darwin, W. D., Goodwin, R. S., Wright, S. & Huestis, M. A. Plasma cannabinoid pharmacokinetics following controlled oral delta9-tetrahydrocannabinol and oromucosal cannabis extract administration. *Clin Chem* **57**, 66-75 (2011).
288. McAllister, S. D. et al. Pathways mediating the effects of cannabidiol on the reduction of breast cancer cell proliferation, invasion, and metastasis. *Breast Cancer Res Treat* **129**, 37-47 (2011).
289. Gullett, N. P., Mazurak, V. C., Hebbar, G. & Ziegler, T. R. Nutritional interventions for cancer-induced cachexia. *Curr Probl Cancer* **35**, 58-90 (2011).
290. Thapa, D. et al. Novel hexahydrocannabinol analogs as potential anti-cancer agents inhibit cell proliferation and tumor angiogenesis. *Eur J Pharmacol* **650**, 64-71 (2011).
291. Gu, X. et al. Intrathecal administration of the cannabinoid 2 receptor agonist JWH015 can attenuate cancer pain and decrease mRNA expression of the 2B subunit of N-methyl-D-aspartic acid. *Anesth Analg* **113**, 405-411 (2011).
292. Sreevalsan, S., Joseph, S., Jutooru, I., Chadalapaka, G. & Safe, S. H. Induction of apoptosis by cannabinoids in prostate and colon cancer cells is phosphatase dependent. *Anticancer Res* **31**, 3799-3807 (2011).
293. Donadelli, M. et al. Gemcitabine/cannabinoid combination triggers autophagy in pancreatic cancer cells through a ROS-mediated mechanism. *Cell Death Dis* **2**, e152 (2011).
294. Ruhaak, L. R. et al. Evaluation of the cyclooxygenase inhibiting effects of six major cannabinoids isolated from Cannabis sativa. *Biol Pharm Bull* **34**, 774-778 (2011).
295. De Petrocellis, L. et al. Effects of cannabinoids and cannabinoid-enriched Cannabis extracts on TRP channels and endocannabinoid metabolic enzymes. *Br J Pharmacol* **163**, 1479-1494 (2011).
296. Brisbois, T. D. et al. Delta-9-tetrahydrocannabinol may palliate altered chemosensory perception in cancer patients: results of a randomized, double-blind, placebo-controlled pilot trial. *Ann Oncol* **22**, 2086-2093 (2011).
297. Nasser, M. W. et al. Crosstalk between chemokine receptor CXCR4 and

- cannabinoid receptor CB2 in modulating breast cancer growth and invasion. *PLoS One* **6**, e23901 (2011).
298. Ware, M. A. Clearing the smoke around medical marijuana. *Clin Pharmacol Ther* **90**, 769-771 (2011).
 299. Simone, D. A., Khasabov, S. G., Cain, D. M., Hamamoto, D. T. & Khasabova, I. A. Changes in response properties of nociceptors and dorsal horn neurons in a murine model of cancer pain. *Fiziol Zh* **57**, 75-77 (2011).
 300. Khasabova, I. A. et al. CB1 and CB2 receptor agonists promote analgesia through synergy in a murine model of tumor pain. *Behav Pharmacol* **22**, 607-616 (2011).
 301. Carter, G. T. et al. Cannabis in palliative medicine: improving care and reducing opioid-related morbidity. *Am J Hosp Palliat Care* **28**, 297-303 (2011).
 302. Hermanson, D. J. & Marnett, L. J. Cannabinoids, endocannabinoids, and cancer. *Cancer Metastasis Rev* **30**, 599-612 (2011).
 303. Wilner, L. S. & Arnold, R. M. Cannabinoids in the treatment of symptoms in cancer and AIDS, 2nd edition #93. *J Palliat Med* **14**, 509-510 (2011).
 304. Lynch, M. E. & Campbell, F. Cannabinoids for treatment of chronic non-cancer pain; a systematic review of randomized trials. *Br J Clin Pharmacol* **72**, 735-744 (2011).
 305. Saghafi, N., Lam, D. K. & Schmidt, B. L. Cannabinoids attenuate cancer pain and proliferation in a mouse model. *Neurosci Lett* **488**, 247-251 (2011).
 306. Shrivastava, A., Kuzontkoski, P. M., Groopman, J. E. & Prasad, A. Cannabidiol induces programmed cell death in breast cancer cells by coordinating the cross-talk between apoptosis and autophagy. *Mol Cancer Ther* **10**, 1161-1172 (2011).
 307. Park, J. M. et al. Antiproliferative mechanism of a cannabinoid agonist by cell cycle arrest in human gastric cancer cells. *J Cell Biochem* **112**, 1192-1205 (2011).
 308. Curto-Reyes, V., Boto, T., Hidalgo, A., Menéndez, L. & Baamonde, A. Antinociceptive effects induced through the stimulation of spinal cannabinoid type 2 receptors in chronically inflamed mice. *Eur J Pharmacol* **668**, 184-189 (2011).
 309. Cui, J. H. et al. Antinociceptive effect of intrathecal cannabinoid receptor agonist WIN 55,212-2 in a rat bone tumor pain model. *Neurosci Lett* **493**, 67-71 (2011).
 310. Jordan, K. et al. Antiemetics in children receiving chemotherapy. MASCC/ESMO guideline update 2009. *Support Care Cancer* **19 Suppl 1**, S37-42 (2011).
 311. Vara, D. et al. Anti-tumoral action of cannabinoids on hepatocellular carcinoma: role of AMPK-dependent activation of autophagy. *Cell Death Differ* **18**, 1099-1111 (2011).
 312. Perwitasari, D. A. et al. Anti-emetic drugs in oncology: pharmacology and individualization by pharmacogenetics. *Int J Clin Pharm* **33**, 33-43 (2011).
 313. Schicho, R. & Storr, M. Alternative targets within the endocannabinoid system for future treatment of gastrointestinal diseases. *Can J Gastroenterol* **25**, 377-383 (2011).
 314. Adverse effects of cannabis. *Prescrire Int* **20**, 18-23 (2011).
 315. Torres, S. et al. A combined preclinical therapy of cannabinoids and temozolomide against glioma. *Mol Cancer Ther* **10**, 90-103 (2011).
 316. Grendelmeier, P. [Cannabis and the lung - chill or kill?]. *Ther Umsch* **67**, 427-430 (2010).
 317. Peat, S. Using cannabinoids in pain and palliative care. *Int J Palliat Nurs* **16**, 481-

- 485 (2010).
318. Tazi, E. & Errihani, H. Treatment of cachexia in oncology. *Indian J Palliat Care* **16**, 129-137 (2010).
 319. Pellerito, O. et al. The synthetic cannabinoid WIN 55,212-2 sensitizes hepatocellular carcinoma cells to tumor necrosis factor-related apoptosis-inducing ligand (TRAIL)-induced apoptosis by activating p8/CCAAT/enhancer binding protein homologous protein (CHOP)/death receptor 5 (DR5) axis. *Mol Pharmacol* **77**, 854-863 (2010).
 320. Cudaback, E., Marrs, W., Moeller, T. & Stella, N. The expression level of CB1 and CB2 receptors determines their efficacy at inducing apoptosis in astrocytomas. *PLoS One* **5**, e8702 (2010).
 321. Leelawat, S., Leelawat, K., Narong, S. & Matangkasombut, O. The dual effects of delta(9)-tetrahydrocannabinol on cholangiocarcinoma cells: anti-invasion activity at low concentration and apoptosis induction at high concentration. *Cancer Invest* **28**, 357-363 (2010).
 322. Fowler, C. J. et al. Targeting the endocannabinoid system for the treatment of cancer--a practical view. *Curr Top Med Chem* **10**, 814-827 (2010).
 323. Gao, M., Wang, M., Miller, K. D., Hutchins, G. D. & Zheng, Q. H. Synthesis and in vitro biological evaluation of carbon-11-labeled quinoline derivatives as new candidate PET radioligands for cannabinoid CB2 receptor imaging. *Bioorg Med Chem* **18**, 2099-2106 (2010).
 324. Curto-Reyes, V., Llamas, S., Hidalgo, A., Menéndez, L. & Baamonde, A. Spinal and peripheral analgesic effects of the CB2 cannabinoid receptor agonist AM1241 in two models of bone cancer-induced pain. *Br J Pharmacol* **160**, 561-573 (2010).
 325. Xu, J. J. et al. Pharmacological characterization of a novel cannabinoid ligand, MDA19, for treatment of neuropathic pain. *Anesth Analg* **111**, 99-109 (2010).
 326. Dupuis, L. L. & Nathan, P. C. Optimizing emetic control in children receiving antineoplastic therapy: beyond the guidelines. *Paediatr Drugs* **12**, 51-61 (2010).
 327. De Jesús, M. L. et al. Opposite changes in cannabinoid CB1 and CB2 receptor expression in human gliomas. *Neurochem Int* **56**, 829-833 (2010).
 328. Johnson, J. R. et al. Multicenter, double-blind, randomized, placebo-controlled, parallel-group study of the efficacy, safety, and tolerability of THC:CBD extract and THC extract in patients with intractable cancer-related pain. *J Pain Symptom Manage* **39**, 167-179 (2010).
 329. Massi, P., Valenti, M., Solinas, M. & Parolaro, D. Molecular mechanisms involved in the antitumor activity of cannabinoids on gliomas: role for oxidative stress. *Cancers (Basel)* **2**, 1013-1026 (2010).
 330. Van Ryckeghem, F. & Van Belle, S. Management of chemotherapy-induced nausea and vomiting. *Acta Clin Belg* **65**, 305-310 (2010).
 331. Tournier, N. et al. Interaction of drugs of abuse and maintenance treatments with human P-glycoprotein (ABCB1) and breast cancer resistance protein (ABCG2). *Int J Neuropsychopharmacol* **13**, 905-915 (2010).
 332. Thapa, D. et al. Induction of p53-independent apoptosis by a novel synthetic hexahydrocannabinol analog is mediated via Sp1-dependent NSAID-activated gene-1 in colon cancer cells. *Biochem Pharmacol* **80**, 62-71 (2010).
 333. Taylor, A. H., Abbas, M. S., Habiba, M. A. & Konje, J. C. Histomorphometric

- evaluation of cannabinoid receptor and anandamide modulating enzyme expression in the human endometrium through the menstrual cycle. *Histochem Cell Biol* **133**, 557-565 (2010).
334. Blum, D. et al. Evolving classification systems for cancer cachexia: ready for clinical practice. *Support Care Cancer* **18**, 273-279 (2010).
 335. Soneji, N. D., Paule, C. C., Mlynarczyk, M. & Nagy, I. Effects of cannabinoids on capsaicin receptor activity following exposure of primary sensory neurons to inflammatory mediators. *Life Sci* **87**, 162-168 (2010).
 336. Xian, X. S. et al. Effect of a synthetic cannabinoid agonist on the proliferation and invasion of gastric cancer cells. *J Cell Biochem* **110**, 321-332 (2010).
 337. Martini, L., Thompson, D., Kharazia, V. & Whistler, J. L. Differential regulation of behavioral tolerance to WIN55,212-2 by GASP1. *Neuropsychopharmacology* **35**, 1363-1373 (2010).
 338. Ramer, R., Rohde, A., Merkord, J., Rohde, H. & Hinz, B. Decrease of plasminogen activator inhibitor-1 may contribute to the anti-invasive action of cannabidiol on human lung cancer cells. *Pharm Res* **27**, 2162-2174 (2010).
 339. Hanlon, K. E. & Vanderah, T. W. Constitutive activity at the cannabinoid CB(1) receptor and behavioral responses. *Methods Enzymol* **484**, 3-30 (2010).
 340. Liu, W. M., Fowler, D. W. & Dalglish, A. G. Cannabis-derived substances in cancer therapy--an emerging anti-inflammatory role for the cannabinoids. *Curr Clin Pharmacol* **5**, 281-287 (2010).
 341. Caffarel, M. M. et al. Cannabinoids reduce ErbB2-driven breast cancer progression through Akt inhibition. *Mol Cancer* **9**, 196 (2010).
 342. Whyte, D. A. et al. Cannabinoids inhibit cellular respiration of human oral cancer cells. *Pharmacology* **85**, 328-335 (2010).
 343. Reiss, C. S. Cannabinoids and Viral Infections. *Pharmaceuticals (Basel)* **3**, 1873-1886 (2010).
 344. Larrinaga, G. et al. Cannabinoid CB₁ receptor is downregulated in clear cell renal cell carcinoma. *J Histochem Cytochem* **58**, 1129-1134 (2010).
 345. Patel, K. D., Davison, J. S., Pittman, Q. J. & Sharkey, K. A. Cannabinoid CB(2) receptors in health and disease. *Curr Med Chem* **17**, 1393-1410 (2010).
 346. Stella, N. Cannabinoid and cannabinoid-like receptors in microglia, astrocytes, and astrocytomas. *Glia* **58**, 1017-1030 (2010).
 347. Ramer, R., Merkord, J., Rohde, H. & Hinz, B. Cannabidiol inhibits cancer cell invasion via upregulation of tissue inhibitor of matrix metalloproteinases-1. *Biochem Pharmacol* **79**, 955-966 (2010).
 348. Marcu, J. P. et al. Cannabidiol enhances the inhibitory effects of delta9-tetrahydrocannabinol on human glioblastoma cell proliferation and survival. *Mol Cancer Ther* **9**, 180-189 (2010).
 349. Paudel, K. S., Hammell, D. C., Agu, R. U., Valiveti, S. & Stinchcomb, A. L. Cannabidiol bioavailability after nasal and transdermal application: effect of permeation enhancers. *Drug Dev Ind Pharm* **36**, 1088-1097 (2010).
 350. Mantovani, G. & Madeddu, C. Cancer cachexia: medical management. *Support Care Cancer* **18**, 1-9 (2010).
 351. Freimuth, N., Ramer, R. & Hinz, B. Antitumorigenic effects of cannabinoids beyond apoptosis. *J Pharmacol Exp Ther* **332**, 336-344 (2010).

352. Phillips, R. S. et al. Antiemetic medication for prevention and treatment of chemotherapy induced nausea and vomiting in childhood. *Cochrane Database Syst Rev* CD007786 (2010).
353. Hsu, E. S. A review of granisetron, 5-hydroxytryptamine₃ receptor antagonists, and other antiemetics. *Am J Ther* **17**, 476-486 (2010).
354. Cozzolino, R., Calì, G., Bifulco, M. & Laccetti, P. A metabolically stable analogue of anandamide, Met-F-AEA, inhibits human thyroid carcinoma cell lines by activation of apoptosis. *Invest New Drugs* **28**, 115-123 (2010).
355. Lozano-Ondoua, A. N. et al. A cannabinoid 2 receptor agonist attenuates bone cancer-induced pain and bone loss. *Life Sci* **86**, 646-653 (2010).
356. Pisanti, S. et al. Use of cannabinoid receptor agonists in cancer therapy as palliative and curative agents. *Best Pract Res Clin Endocrinol Metab* **23**, 117-131 (2009).
357. Salazar, M. et al. TRB3 links ER stress to autophagy in cannabinoid anti-tumoral action. *Autophagy* **5**, 1048-1049 (2009).
358. Bíró, T., Tóth, B. I., Haskó, G., Paus, R. & Pacher, P. The endocannabinoid system of the skin in health and disease: novel perspectives and therapeutic opportunities. *Trends Pharmacol Sci* **30**, 411-420 (2009).
359. Guindon, J. & Hohmann, A. G. The endocannabinoid system and pain. *CNS Neurol Disord Drug Targets* **8**, 403-421 (2009).
360. Luca, T. et al. The CB1/CB2 receptor agonist WIN-55,212-2 reduces viability of human Kaposi's sarcoma cells in vitro. *Eur J Pharmacol* **616**, 16-21 (2009).
361. Qamri, Z. et al. Synthetic cannabinoid receptor agonists inhibit tumor growth and metastasis of breast cancer. *Mol Cancer Ther* **8**, 3117-3129 (2009).
362. Eichele, K., Ramer, R. & Hinz, B. R(+)-methanandamide-induced apoptosis of human cervical carcinoma cells involves a cyclooxygenase-2-dependent pathway. *Pharm Res* **26**, 346-355 (2009).
363. Schley, M. et al. Predominant CB2 receptor expression in endothelial cells of glioblastoma in humans. *Brain Res Bull* **79**, 333-337 (2009).
364. Gustafsson, K., Sander, B., Bielawski, J., Hannun, Y. A. & Flygare, J. Potentiation of cannabinoid-induced cytotoxicity in mantle cell lymphoma through modulation of ceramide metabolism. *Mol Cancer Res* **7**, 1086-1098 (2009).
365. Miyato, H. et al. Pharmacological synergism between cannabinoids and paclitaxel in gastric cancer cell lines. *J Surg Res* **155**, 40-47 (2009).
366. Ramesh, Shukla, N. K. & Bhatnagar, S. Phantom breast syndrome. *Indian J Palliat Care* **15**, 103-107 (2009).
367. Izzo, A. A., Borrelli, F., Capasso, R., Di Marzo, V. & Mechoulam, R. Non-psychoactive plant cannabinoids: new therapeutic opportunities from an ancient herb. *Trends Pharmacol Sci* **30**, 515-527 (2009).
368. Wegener, N. & Koch, M. Neurobiology and systems physiology of the endocannabinoid system. *Pharmacopsychiatry* **42 Suppl 1**, S79-86 (2009).
369. Keeley, P. W. Nausea and vomiting in people with cancer and other chronic diseases. *BMJ Clin Evid* **2009**, (2009).
370. Galal, A. M. et al. Naturally occurring and related synthetic cannabinoids and their potential therapeutic applications. *Recent Pat CNS Drug Discov* **4**, 112-136 (2009).
371. Takeda, S., Yamamoto, I. & Watanabe, K. Modulation of Delta9-tetrahydrocannabinol-induced MCF-7 breast cancer cell growth by cyclooxygenase

- and aromatase. *Toxicology* **259**, 25-32 (2009).
372. Yin, H. et al. Lipid G protein-coupled receptor ligand identification using beta-arrestin PathHunter assay. *J Biol Chem* **284**, 12328-12338 (2009).
 373. Olea-Herrero, N., Vara, D., Malagarie-Cazenave, S. & Díaz-Laviada, I. Inhibition of human tumour prostate PC-3 cell growth by cannabinoids R(+)-Methanandamide and JWH-015: involvement of CB2. *Br J Cancer* **101**, 940-950 (2009).
 374. Darmani, N. A. & Ray, A. P. Evidence for a re-evaluation of the neurochemical and anatomical bases of chemotherapy-induced vomiting. *Chem Rev* **109**, 3158-3199 (2009).
 375. Pertwee, R. G. Emerging strategies for exploiting cannabinoid receptor agonists as medicines. *Br J Pharmacol* **156**, 397-411 (2009).
 376. Cotter, J. Efficacy of Crude Marijuana and Synthetic Delta-9-Tetrahydrocannabinol as Treatment for Chemotherapy-Induced Nausea and Vomiting: A Systematic Literature Review. *Oncol Nurs Forum* **36**, 345-352 (2009).
 377. Farquhar-Smith, W. P. Do cannabinoids have a role in cancer pain management. *Curr Opin Support Palliat Care* **3**, 7-13 (2009).
 378. Bosier, B., Hermans, E. & Lambert, D. M. Concomitant activation of adenylyl cyclase suppresses the opposite influences of CB(1) cannabinoid receptor agonists on tyrosine hydroxylase expression. *Biochem Pharmacol* **77**, 216-227 (2009).
 379. Gevirtz, C. Cannabinoids: an emerging role in pain management. *Nursing* **39**, 59-60 (2009).
 380. Alexander, A., Smith, P. F. & Rosengren, R. J. Cannabinoids in the treatment of cancer. *Cancer Lett* **285**, 6-12 (2009).
 381. Izzo, A. A. & Camilleri, M. Cannabinoids in intestinal inflammation and cancer. *Pharmacol Res* **60**, 117-125 (2009).
 382. Gustafsson, S. B., Lindgren, T., Jonsson, M. & Jacobsson, S. O. Cannabinoid receptor-independent cytotoxic effects of cannabinoids in human colorectal carcinoma cells: synergism with 5-fluorouracil. *Cancer Chemother Pharmacol* **63**, 691-701 (2009).
 383. Oesch, S. & Gertsch, J. Cannabinoid receptor ligands as potential anticancer agents-high hopes for new therapies. *J Pharm Pharmacol* **61**, 839-853 (2009).
 384. Oesch, S. et al. Cannabinoid receptor 1 is a potential drug target for treatment of translocation-positive rhabdomyosarcoma. *Mol Cancer Ther* **8**, 1838-1845 (2009).
 385. Salazar, M. et al. Cannabinoid action induces autophagy-mediated cell death through stimulation of ER stress in human glioma cells. *J Clin Invest* **119**, 1359-1372 (2009).
 386. Gullett, N., Rossi, P., Kucuk, O. & Johnstone, P. A. Cancer-induced cachexia: a guide for the oncologist. *J Soc Integr Oncol* **7**, 155-169 (2009).
 387. Giuliano, M. et al. Apoptosis induced in HepG2 cells by the synthetic cannabinoid WIN: involvement of the transcription factor PPARgamma. *Biochimie* **91**, 457-465 (2009).
 388. Navari, R. M. Antiemetic control: toward a new standard of care for emetogenic chemotherapy. *Expert Opin Pharmacother* **10**, 629-644 (2009).
 389. Madeddu, C. & Mantovani, G. An update on promising agents for the treatment of cancer cachexia. *Curr Opin Support Palliat Care* **3**, 258-262 (2009).
 390. Lorente, M. et al. Amphiregulin is a factor for resistance of glioma cells to

- cannabinoid-induced apoptosis. *Glia* **57**, 1374-1385 (2009).
391. Liang, C. et al. A population-based case-control study of marijuana use and head and neck squamous cell carcinoma. *Cancer Prev Res (Phila)* **2**, 759-768 (2009).
 392. Chung, S. C. et al. A high cannabinoid CB(1) receptor immunoreactivity is associated with disease severity and outcome in prostate cancer. *Eur J Cancer* **45**, 174-182 (2009).
 393. Ernst, G. & Kongsgaard, U. E. [Use of cannabinoids in palliative medicine]. *Tidsskr Nor Laegeforen* **128**, 822-825 (2008).
 394. Lenk, R. & Likar, R. [Cannabinoids in medicine]. *Wien Med Wochenschr* **158**, 668-673 (2008).
 395. Lam, P. M. et al. Ultra performance liquid chromatography tandem mass spectrometry method for the measurement of anandamide in human plasma. *Anal Biochem* **380**, 195-201 (2008).
 396. Machado Rocha, F. C., Stéfano, S. C., De Cássia Haiek, R., Rosa Oliveira, L. M. & Da Silveira, D. X. Therapeutic use of Cannabis sativa on chemotherapy-induced nausea and vomiting among cancer patients: systematic review and meta-analysis. *Eur J Cancer Care (Engl)* **17**, 431-443 (2008).
 397. Rudolph, M. I. et al. The influence of mast cell mediators on migration of SW756 cervical carcinoma cells. *J Pharmacol Sci* **106**, 208-218 (2008).
 398. Flygare, J. & Sander, B. The endocannabinoid system in cancer-potential therapeutic target. *Semin Cancer Biol* **18**, 176-189 (2008).
 399. Bilsland, L. G. & Greensmith, L. The endocannabinoid system in amyotrophic lateral sclerosis. *Curr Pharm Des* **14**, 2306-2316 (2008).
 400. Lissoni, P. et al. The endocannabinoid anandamide neither impairs in vitro T-cell function nor induces regulatory T-cell generation. *Anticancer Res* **28**, 3743-3748 (2008).
 401. Coffman, K. L. The debate about marijuana usage in transplant candidates: recent medical evidence on marijuana health effects. *Curr Opin Organ Transplant* **13**, 189-195 (2008).
 402. Potenzieri, C., Harding-Rose, C. & Simone, D. A. The cannabinoid receptor agonist, WIN 55, 212-2, attenuates tumor-evoked hyperalgesia through peripheral mechanisms. *Brain Res* **1215**, 69-75 (2008).
 403. Laezza, C., Pisanti, S., Malfitano, A. M. & Bifulco, M. The anandamide analog, Met-F-AEA, controls human breast cancer cell migration via the RHOA/RHO kinase signaling pathway. *Endocr Relat Cancer* **15**, 965-974 (2008).
 404. Dahlstrom, K. R. et al. Squamous cell carcinoma of the head and neck in never smoker-never drinkers: a descriptive epidemiologic study. *Head Neck* **30**, 75-84 (2008).
 405. Idris, A. I. Role of cannabinoid receptors in bone disorders: alternatives for treatment. *Drug News Perspect* **21**, 533-540 (2008).
 406. van Diepen, H., Schlicker, E. & Michel, M. C. Prejunctional and peripheral effects of the cannabinoid CB(1) receptor inverse agonist rimonabant (SR 141716). *Naunyn Schmiedebergs Arch Pharmacol* **378**, 345-369 (2008).
 407. De Petrocellis, L. et al. Plant-derived cannabinoids modulate the activity of transient receptor potential channels of ankyrin type-1 and melastatin type-8. *J Pharmacol Exp Ther* **325**, 1007-1015 (2008).

408. Guerrero, A. V., Quang, P., Dekker, N., Jordan, R. C. & Schmidt, B. L. Peripheral cannabinoids attenuate carcinoma-induced nociception in mice. *Neurosci Lett* **433**, 77-81 (2008).
409. Davis, M. P. Oral nabilone capsules in the treatment of chemotherapy-induced nausea and vomiting and pain. *Expert Opin Investig Drugs* **17**, 85-95 (2008).
410. Maida, V. Nabilone for the treatment of paraneoplastic night sweats: a report of four cases. *J Palliat Med* **11**, 929-934 (2008).
411. Araújo, J. R., Gonçalves, P. & Martel, F. Modulation of glucose uptake in a human choriocarcinoma cell line (BeWo) by dietary bioactive compounds and drugs of abuse. *J Biochem* **144**, 177-186 (2008).
412. Bonneau, A. Management of bone metastases. *Can Fam Physician* **54**, 524-527 (2008).
413. Wright, K. L., Robertson, D. A., Moyer, M. P. & Ward, S. G. Long term cannabinoid receptor (CB1) blockade in obesity: implications for the development of colorectal cancer. *Int J Cancer* **122**, 1920-1921 (2008).
414. Caffarel, M. M. et al. JunD is involved in the antiproliferative effect of Delta9-tetrahydrocannabinol on human breast cancer cells. *Oncogene* **27**, 5033-5044 (2008).
415. Holland, M. L., Allen, J. D. & Arnold, J. C. Interaction of plant cannabinoids with the multidrug transporter ABCC1 (MRP1). *Eur J Pharmacol* **591**, 128-131 (2008).
416. Ramer, R. & Hinz, B. Inhibition of cancer cell invasion by cannabinoids via increased expression of tissue inhibitor of matrix metalloproteinases-1. *J Natl Cancer Inst* **100**, 59-69 (2008).
417. Widmer, M., Hanemann, C. O. & Zajicek, J. High concentrations of cannabinoids activate apoptosis in human U373MG glioma cells. *J Neurosci Res* **86**, 3212-3220 (2008).
418. Gustafsson, K. et al. Expression of cannabinoid receptors type 1 and type 2 in non-Hodgkin lymphoma: growth inhibition by receptor activation. *Int J Cancer* **123**, 1025-1033 (2008).
419. Krishnamurthy, M., Gurley, S. & Moore, B. M. Exploring the substituent effects on a novel series of C1'-dimethyl-aryl Delta8-tetrahydrocannabinol analogs. *Bioorg Med Chem* **16**, 6489-6500 (2008).
420. Notarnicola, M. et al. Estrogenic induction of cannabinoid CB1 receptor in human colon cancer cell lines. *Scand J Gastroenterol* **43**, 66-72 (2008).
421. Liu, W. M., Scott, K. A., Shamash, J., Joel, S. & Powles, T. B. Enhancing the in vitro cytotoxic activity of Delta9-tetrahydrocannabinol in leukemic cells through a combinatorial approach. *Leuk Lymphoma* **49**, 1800-1809 (2008).
422. Yazulla, S. Endocannabinoids in the retina: from marijuana to neuroprotection. *Prog Retin Eye Res* **27**, 501-526 (2008).
423. Blázquez, C. et al. Down-regulation of tissue inhibitor of metalloproteinases-1 in gliomas: a new marker of cannabinoid antitumoral activity. *Neuropharmacology* **54**, 235-243 (2008).
424. Preet, A., Ganju, R. K. & Groopman, J. E. Delta9-Tetrahydrocannabinol inhibits epithelial growth factor-induced lung cancer cell migration in vitro as well as its growth and metastasis in vivo. *Oncogene* **27**, 339-346 (2008).
425. von Bueren, A. O., Schlumpf, M. & Lichtensteiger, W. Delta(9)-

- tetrahydrocannabinol inhibits 17beta-estradiol-induced proliferation and fails to activate androgen and estrogen receptors in MCF7 human breast cancer cells. *Anticancer Res* **28**, 85-89 (2008).
426. Takeda, S. et al. Delta(9)-Tetrahydrocannabinol enhances MCF-7 cell proliferation via cannabinoid receptor-independent signaling. *Toxicology* **245**, 141-146 (2008).
427. Galanti, G. et al. Delta 9-tetrahydrocannabinol inhibits cell cycle progression by downregulation of E2F1 in human glioblastoma multiforme cells. *Acta Oncol* **47**, 1062-1070 (2008).
428. Deutsch, S. I. et al. Current status of cannabis treatment of multiple sclerosis with an illustrative case presentation of a patient with MS, complex vocal tics, paroxysmal dystonia, and marijuana dependence treated with dronabinol. *CNS Spectr* **13**, 393-403 (2008).
429. Lohr, L. Chemotherapy-induced nausea and vomiting. *Cancer J* **14**, 85-93 (2008).
430. Warr, D. G. Chemotherapy-and cancer-related nausea and vomiting. *Curr Oncol* **15**, S4-9 (2008).
431. Blázquez, C. et al. Cannabinoids inhibit glioma cell invasion by down-regulating matrix metalloproteinase-2 expression. *Cancer Res* **68**, 1945-1952 (2008).
432. Russo, E. B. Cannabinoids in the management of difficult to treat pain. *Ther Clin Risk Manag* **4**, 245-259 (2008).
433. Michalski, C. W. et al. Cannabinoids in pancreatic cancer: correlation with survival and pain. *Int J Cancer* **122**, 742-750 (2008).
434. Sarfaraz, S., Adhami, V. M., Syed, D. N., Afaq, F. & Mukhtar, H. Cannabinoids for cancer treatment: progress and promise. *Cancer Res* **68**, 339-342 (2008).
435. Parolaro, D. & Massi, P. Cannabinoids as potential new therapy for the treatment of gliomas. *Expert Rev Neurother* **8**, 37-49 (2008).
436. Jones, J. D., Carney, S. T., Vrana, K. E., Norford, D. C. & Howlett, A. C. Cannabinoid receptor-mediated translocation of NO-sensitive guanylyl cyclase and production of cyclic GMP in neuronal cells. *Neuropharmacology* **54**, 23-30 (2008).
437. Cianchi, F. et al. Cannabinoid receptor activation induces apoptosis through tumor necrosis factor alpha-mediated ceramide de novo synthesis in colon cancer cells. *Clin Cancer Res* **14**, 7691-7700 (2008).
438. Shi, Y. et al. Cannabinoid 2 receptor induction by IL-12 and its potential as a therapeutic target for the treatment of anaplastic thyroid carcinoma. *Cancer Gene Ther* **15**, 101-107 (2008).
439. Zuardi, A. W. Cannabidiol: from an inactive cannabinoid to a drug with wide spectrum of action. *Rev Bras Psiquiatr* **30**, 271-280 (2008).
440. Weiss, L. et al. Cannabidiol arrests onset of autoimmune diabetes in NOD mice. *Neuropharmacology* **54**, 244-249 (2008).
441. Pushkarev, V. M., Kovzun, O. I. & Tronko, M. D. Antineoplastic and apoptotic effects of cannabinoids. N-acylethanolamines: protectors or killers. *Exp Oncol* **30**, 6-21 (2008).
442. Buznikov, G. A. et al. Amyloid precursor protein 96-110 and beta-amyloid 1-42 elicit developmental anomalies in sea urchin embryos and larvae that are alleviated by neurotransmitter analogs for acetylcholine, serotonin and cannabinoids. *Neurotoxicol Teratol* **30**, 503-509 (2008).
443. Maida, V., Ennis, M., Irani, S., Corbo, M. & Dolzhykov, M. Adjunctive nabilone in

- cancer pain and symptom management: a prospective observational study using propensity scoring. *J Support Oncol* **6**, 119-124 (2008).
444. Ware, M. A., Daeninck, P. & Maida, V. A review of nabilone in the treatment of chemotherapy-induced nausea and vomiting. *Ther Clin Risk Manag* **4**, 99-107 (2008).
445. Khasabova, I. A. et al. A decrease in anandamide signaling contributes to the maintenance of cutaneous mechanical hyperalgesia in a model of bone cancer pain. *J Neurosci* **28**, 11141-11152 (2008).
446. Lee, C. Y. et al. A comparative study on cannabidiol-induced apoptosis in murine thymocytes and EL-4 thymoma cells. *Int Immunopharmacol* **8**, 732-740 (2008).
447. Taylor, A. H., Ang, C., Bell, S. C. & Konje, J. C. The role of the endocannabinoid system in gametogenesis, implantation and early pregnancy. *Hum Reprod Update* **13**, 501-513 (2007).
448. Holland, M. L., Lau, D. T., Allen, J. D. & Arnold, J. C. The multidrug transporter ABCG2 (BCRP) is inhibited by plant-derived cannabinoids. *Br J Pharmacol* **152**, 815-824 (2007).
449. Davis, M., Maida, V., Daeninck, P. & Pergolizzi, J. The emerging role of cannabinoid neuromodulators in symptom management. *Support Care Cancer* **15**, 63-71 (2007).
450. Greenhough, A., Patsos, H. A., Williams, A. C. & Paraskeva, C. The cannabinoid delta(9)-tetrahydrocannabinol inhibits RAS-MAPK and PI3K-AKT survival signalling and induces BAD-mediated apoptosis in colorectal cancer cells. *Int J Cancer* **121**, 2172-2180 (2007).
451. Izzo, A. A. The cannabinoid CB(2) receptor: a good friend in the gut. *Neurogastroenterol Motil* **19**, 704-708 (2007).
452. Cudaback, E. & Stella, N. Targeting astrocytomas and invading immune cells with cannabinoids: a promising therapeutic avenue. *Mol Neurobiol* **36**, 36-44 (2007).
453. Darmani, N. A., Janoyan, J. J., Crim, J. & Ramirez, J. Receptor mechanism and antiemetic activity of structurally-diverse cannabinoids against radiation-induced emesis in the least shrew. *Eur J Pharmacol* **563**, 187-196 (2007).
454. Guindon, J., Walczak, J. S. & Beaulieu, P. Recent advances in the pharmacological management of pain. *Drugs* **67**, 2121-2133 (2007).
455. Richardson, S. J., Widmer, M., Zajicek, J. & Rule, S. A. Physiological doses of cannabinoids do not adversely affect MCL viability. *Leuk Lymphoma* **48**, 1855-1857 (2007).
456. Yeh, S. S., Lovitt, S. & Schuster, M. W. Pharmacological treatment of geriatric cachexia: evidence and safety in perspective. *J Am Med Dir Assoc* **8**, 363-377 (2007).
457. Costa, B. On the pharmacological properties of Delta9-tetrahydrocannabinol (THC). *Chem Biodivers* **4**, 1664-1677 (2007).
458. Engels, F. K. et al. Medicinal cannabis in oncology. *Eur J Cancer* **43**, 2638-2644 (2007).
459. Engels, F. K. et al. Medicinal cannabis does not influence the clinical pharmacokinetics of irinotecan and docetaxel. *Oncologist* **12**, 291-300 (2007).
460. Seamon, M. J., Fass, J. A., Maniscalco-Feichtl, M. & Abu-Shraie, N. A. Medical marijuana and the developing role of the pharmacist. *Am J Health Syst Pharm* **64**,

- 1037-1044 (2007).
461. De Petrocellis, L. et al. Mechanisms for the coupling of cannabinoid receptors to intracellular calcium mobilization in rat insulinoma beta-cells. *Exp Cell Res* **313**, 2993-3004 (2007).
 462. Fogarty, A. et al. Marijuana as therapy for people living with HIV/AIDS: social and health aspects. *AIDS Care* **19**, 295-301 (2007).
 463. Varvel, S. A., Martin, B. R. & Lichtman, A. H. Lack of behavioral sensitization after repeated exposure to THC in mice and comparison to methamphetamine. *Psychopharmacology (Berl)* **193**, 511-519 (2007).
 464. Kogan, N. M. et al. HU-331, a novel cannabinoid-based anticancer topoisomerase II inhibitor. *Mol Cancer Ther* **6**, 173-183 (2007).
 465. Calatozzolo, C. et al. Expression of cannabinoid receptors and neurotrophins in human gliomas. *Neurol Sci* **28**, 304-310 (2007).
 466. Biedrzycki, B. A. Evolving paradigms in chemotherapy-induced nausea and vomiting and symptom management for the breast cancer patient. *ONS Connect* **22**, 9-10 (2007).
 467. Bifulco, M., Laezza, C., Gazerro, P. & Pentimalli, F. Endocannabinoids as emerging suppressors of angiogenesis and tumor invasion (review). *Oncol Rep* **17**, 813-816 (2007).
 468. Osei-Hyiaman, D. Endocannabinoid system in cancer cachexia. *Curr Opin Clin Nutr Metab Care* **10**, 443-448 (2007).
 469. Meiri, E. et al. Efficacy of dronabinol alone and in combination with ondansetron versus ondansetron alone for delayed chemotherapy-induced nausea and vomiting. *Curr Med Res Opin* **23**, 533-543 (2007).
 470. Ellert-Miklaszewska, A., Grajkowska, W., Gabrusiewicz, K., Kaminska, B. & Konarska, L. Distinctive pattern of cannabinoid receptor type II (CB2) expression in adult and pediatric brain tumors. *Brain Res* **1137**, 161-169 (2007).
 471. Schramm-Sapyta, N. L. et al. Differential anxiogenic, aversive, and locomotor effects of THC in adolescent and adult rats. *Psychopharmacology (Berl)* **191**, 867-877 (2007).
 472. Jordan, K., Schmoll, H. J. & Aapro, M. S. Comparative activity of antiemetic drugs. *Crit Rev Oncol Hematol* **61**, 162-175 (2007).
 473. Schwartzberg, L. S. Chemotherapy-induced nausea and vomiting: which antiemetic for which therapy. *Oncology (Williston Park)* **21**, 946-53; discussion 954, 959, 962 passim (2007).
 474. Russo, E. B., Guy, G. W. & Robson, P. J. Cannabis, pain, and sleep: lessons from therapeutic clinical trials of Sativex, a cannabis-based medicine. *Chem Biodivers* **4**, 1729-1743 (2007).
 475. McCarberg, B. H. Cannabinoids: their role in pain and palliation. *J Pain Palliat Care Pharmacother* **21**, 19-28 (2007).
 476. Aguado, T. et al. Cannabinoids induce glioma stem-like cell differentiation and inhibit gliomagenesis. *J Biol Chem* **282**, 6854-6862 (2007).
 477. Slatkin, N. E. Cannabinoids in the treatment of chemotherapy-induced nausea and vomiting: beyond prevention of acute emesis. *J Support Oncol* **5**, 1-9 (2007).
 478. Kogan, N. M. & Mechoulam, R. Cannabinoids in health and disease. *Dialogues Clin Neurosci* **9**, 413-430 (2007).

479. D'Souza, D. C. Cannabinoids and psychosis. *Int Rev Neurobiol* **78**, 289-326 (2007).
480. Velasco, G. et al. Cannabinoids and gliomas. *Mol Neurobiol* **36**, 60-67 (2007).
481. Athanasiou, A. et al. Cannabinoid receptor agonists are mitochondrial inhibitors: a unified hypothesis of how cannabinoids modulate mitochondrial function and induce cell death. *Biochem Biophys Res Commun* **364**, 131-137 (2007).
482. Zhang, X., Wang, J. F., Kunos, G. & Groopman, J. E. Cannabinoid modulation of Kaposi's sarcoma-associated herpesvirus infection and transformation. *Cancer Res* **67**, 7230-7237 (2007).
483. Mechoulam, R., Peters, M., Murillo-Rodriguez, E. & Hanus, L. O. Cannabidiol--recent advances. *Chem Biodivers* **4**, 1678-1692 (2007).
484. McAllister, S. D., Christian, R. T., Horowitz, M. P., Garcia, A. & Desprez, P. Y. Cannabidiol as a novel inhibitor of Id-1 gene expression in aggressive breast cancer cells. *Mol Cancer Ther* **6**, 2921-2927 (2007).
485. Bosier, B., Tilleux, S., Najimi, M., Lambert, D. M. & Hermans, E. Agonist selective modulation of tyrosine hydroxylase expression by cannabinoid ligands in a murine neuroblastoma cell line. *J Neurochem* **102**, 1996-2007 (2007).
486. Hamamoto, D. T., Giridharagopalan, S. & Simone, D. A. Acute and chronic administration of the cannabinoid receptor agonist CP 55,940 attenuates tumor-evoked hyperalgesia. *Eur J Pharmacol* **558**, 73-87 (2007).
487. Kogan, N. M. et al. A cannabinoid anticancer quinone, HU-331, is more potent and less cardiotoxic than doxorubicin: a comparative in vivo study. *J Pharmacol Exp Ther* **322**, 646-653 (2007).
488. Cardona, D. [Pharmacological therapy of cancer anorexia-cachexia]. *Nutr Hosp* **21 Suppl 3**, 17-26 (2006).
489. Inui, A. [Feeding-related disorders in medicine, with special reference to cancer anorexia-cachexia syndrome]. *Rinsho Byori* **54**, 1044-1051 (2006).
490. Zutt, M., Hänssle, H., Emmert, S., Neumann, C. & Kretschmer, L. [Dronabinol for supportive therapy in patients with malignant melanoma and liver metastases]. *Hautarzt* **57**, 423-427 (2006).
491. Vidinský, B., Gál, P. & Mojzís, J. [Different views on the association between cannabinoids and cancer]. *Cas Lek Cesk* **145**, 453-7; discussion 458 (2006).
492. Seeling, W. et al. [Delta(9)-tetrahydrocannabinol and the opioid receptor agonist piritramide do not act synergistically in postoperative pain]. *Anaesthesist* **55**, 391-400 (2006).
493. Vignot, S. et al. [Cannabis and cancer]. *Bull Cancer* **93**, 163-170 (2006).
494. Singh, J. & Budhiraja, S. Therapeutic potential of cannabinoid receptor ligands: current status. *Methods Find Exp Clin Pharmacol* **28**, 177-183 (2006).
495. Carracedo, A. et al. The stress-regulated protein p8 mediates cannabinoid-induced apoptosis of tumor cells. *Cancer Cell* **9**, 301-312 (2006).
496. Massi, P. et al. The non-psychoactive cannabidiol triggers caspase activation and oxidative stress in human glioma cells. *Cell Mol Life Sci* **63**, 2057-2066 (2006).
497. Pacher, P., Bátkai, S. & Kunos, G. The endocannabinoid system as an emerging target of pharmacotherapy. *Pharmacol Rev* **58**, 389-462 (2006).
498. Holland, M. L. et al. The effects of cannabinoids on P-glycoprotein transport and expression in multidrug resistant cells. *Biochem Pharmacol* **71**, 1146-1154 (2006).
499. Roberts, J. D., Gennings, C. & Shih, M. Synergistic affective analgesic interaction

- between delta-9-tetrahydrocannabinol and morphine. *Eur J Pharmacol* **530**, 54-58 (2006).
500. Duntsch, C. et al. Safety and efficacy of a novel cannabinoid chemotherapeutic, KM-233, for the treatment of high-grade glioma. *J Neurooncol* **77**, 143-152 (2006).
501. Eichele, K., Weinzierl, U., Ramer, R., Brune, K. & Hinz, B. R(+)-methanandamide elicits a cyclooxygenase-2-dependent mitochondrial apoptosis signaling pathway in human neuroglioma cells. *Pharm Res* **23**, 90-94 (2006).
502. Layeeque, R. et al. Prevention of nausea and vomiting following breast surgery. *Am J Surg* **191**, 767-772 (2006).
503. Xu, X. et al. Overexpression of cannabinoid receptors CB1 and CB2 correlates with improved prognosis of patients with hepatocellular carcinoma. *Cancer Genet Cytogenet* **171**, 31-38 (2006).
504. Bari, M., Battista, N., Fezza, F., Gasperi, V. & Maccarrone, M. New insights into endocannabinoid degradation and its therapeutic potential. *Mini Rev Med Chem* **6**, 257-268 (2006).
505. Rao, G. K. & Kaminski, N. E. Induction of intracellular calcium elevation by Delta9-tetrahydrocannabinol in T cells involves TRPC1 channels. *J Leukoc Biol* **79**, 202-213 (2006).
506. Alsasua del Valle, A. Implication of cannabinoids in neurological diseases. *Cell Mol Neurobiol* **26**, 579-591 (2006).
507. Svensson, A. C., Johansson, M., Persson, E., Carchenilla, M. S. & Jacobsson, S. O. Expression of functional CB1 cannabinoid receptors in retinoic acid-differentiated P19 embryonal carcinoma cells. *J Neurosci Res* **83**, 1128-1140 (2006).
508. Berlach, D. M., Shir, Y. & Ware, M. A. Experience with the synthetic cannabinoid nabilone in chronic noncancer pain. *Pain Med* **7**, 25-29 (2006).
509. Jia, W. et al. Delta9-tetrahydrocannabinol-induced apoptosis in Jurkat leukemia T cells is regulated by translocation of Bad to mitochondria. *Mol Cancer Res* **4**, 549-562 (2006).
510. Caffarel, M. M., Sarrió, D., Palacios, J., Guzmán, M. & Sánchez, C. Delta9-tetrahydrocannabinol inhibits cell cycle progression in human breast cancer cells through Cdc2 regulation. *Cancer Res* **66**, 6615-6621 (2006).
511. Shmist, Y. A. et al. Delta-9-tetrahydrocannabinol protects cardiac cells from hypoxia via CB2 receptor activation and nitric oxide production. *Mol Cell Biochem* **283**, 75-83 (2006).
512. Cannabis-In-Cachexia-Study-Group et al. Comparison of orally administered cannabis extract and delta-9-tetrahydrocannabinol in treating patients with cancer-related anorexia-cachexia syndrome: a multicenter, phase III, randomized, double-blind, placebo-controlled clinical trial from the Cannabis-In-Cachexia-Study-Group. *J Clin Oncol* **24**, 3394-3400 (2006).
513. Perez, J. Combined cannabinoid therapy via an oromucosal spray. *Drugs Today (Barc)* **42**, 495-503 (2006).
514. Esposito, G. et al. CB1 receptor selective activation inhibits beta-amyloid-induced iNOS protein expression in C6 cells and subsequently blunts tau protein hyperphosphorylation in co-cultured neurons. *Neurosci Lett* **404**, 342-346 (2006).
515. Karch, S. B. Cannabis and cardiotoxicity. *Forensic Sci Med Pathol* **2**, 13-18 (2006).
516. Massi, P., Vaccani, A. & Parolaro, D. Cannabinoids, immune system and cytokine

- network. *Curr Pharm Des* **12**, 3135-3146 (2006).
517. Carracedo, A. et al. Cannabinoids induce apoptosis of pancreatic tumor cells via endoplasmic reticulum stress-related genes. *Cancer Res* **66**, 6748-6755 (2006).
518. Wilner, L. S. & Arnold, R. M. Cannabinoids in the treatment of symptoms in cancer and AIDS #93. *J Palliat Med* **9**, 802-804 (2006).
519. Sutton, I. R. & Daeninck, P. Cannabinoids in the management of intractable chemotherapy-induced nausea and vomiting and cancer-related pain. *J Support Oncol* **4**, 531-535 (2006).
520. Ben Amar, M. Cannabinoids in medicine: A review of their therapeutic potential. *J Ethnopharmacol* **105**, 1-25 (2006).
521. Huskey, A. Cannabinoids in cancer pain management. *J Pain Palliat Care Pharmacother* **20**, 43-46 (2006).
522. Bifulco, M., Laezza, C., Pisanti, S. & Gazerro, P. Cannabinoids and cancer: pros and cons of an antitumour strategy. *Br J Pharmacol* **148**, 123-135 (2006).
523. Held-Feindt, J., Dörner, L., Sahan, G., Mehdorn, H. M. & Mentlein, R. Cannabinoid receptors in human astroglial tumors. *J Neurochem* **98**, 886-893 (2006).
524. Blázquez, C. et al. Cannabinoid receptors as novel targets for the treatment of melanoma. *FASEB J* **20**, 2633-2635 (2006).
525. Gustafsson, K., Christensson, B., Sander, B. & Flygare, J. Cannabinoid receptor-mediated apoptosis induced by R(+)-methanandamide and Win55,212-2 is associated with ceramide accumulation and p38 activation in mantle cell lymphoma. *Mol Pharmacol* **70**, 1612-1620 (2006).
526. Fogli, S. et al. Cannabinoid derivatives induce cell death in pancreatic MIA PaCa-2 cells via a receptor-independent mechanism. *FEBS Lett* **580**, 1733-1739 (2006).
527. McKallip, R. J. et al. Cannabidiol-induced apoptosis in human leukemia cells: A novel role of cannabidiol in the regulation of p22phox and Nox4 expression. *Mol Pharmacol* **70**, 897-908 (2006).
528. Weiss, L. et al. Cannabidiol lowers incidence of diabetes in non-obese diabetic mice. *Autoimmunity* **39**, 143-151 (2006).
529. Ligresti, A. et al. Antitumor activity of plant cannabinoids with emphasis on the effect of cannabidiol on human breast carcinoma. *J Pharmacol Exp Ther* **318**, 1375-1387 (2006).
530. Russo, E. & Guy, G. W. A tale of two cannabinoids: the therapeutic rationale for combining tetrahydrocannabinol and cannabidiol. *Med Hypotheses* **66**, 234-246 (2006).
531. Guzmán, M. et al. A pilot clinical study of Delta9-tetrahydrocannabinol in patients with recurrent glioblastoma multiforme. *Br J Cancer* **95**, 197-203 (2006).
532. Kogan, N. M. et al. A cannabinoid quinone inhibits angiogenesis by targeting vascular endothelial cells. *Mol Pharmacol* **70**, 51-59 (2006).
533. Inui, A. [Recent development in research and management of cancer anorexia-cachexia syndrome]. *Gan To Kagaku Ryoho* **32**, 743-749 (2005).
534. Radbruch, L. & Elsner, F. [Palliative pain therapy, cannabinoids]. *Internist (Berl)* **46**, 1105-1114 (2005).
535. Mattox, T. W. Treatment of unintentional weight loss in patients with cancer. *Nutr Clin Pract* **20**, 400-410 (2005).

536. Curran, N. M. et al. The synthetic cannabinoid R(+)-WIN 55,212-2 inhibits the interleukin-1 signaling pathway in human astrocytes in a cannabinoid receptor-independent manner. *J Biol Chem* **280**, 35797-35806 (2005).
537. Walsh, D., Kirkova, J. & Davis, M. P. The efficacy and tolerability of long-term use of dronabinol in cancer-related anorexia: a case series. *J Pain Symptom Manage* **30**, 493-495 (2005).
538. Lombard, C., Nagarkatti, M. & Nagarkatti, P. S. Targeting cannabinoid receptors to treat leukemia: role of cross-talk between extrinsic and intrinsic pathways in Delta9-tetrahydrocannabinol (THC)-induced apoptosis of Jurkat cells. *Leuk Res* **29**, 915-922 (2005).
539. Tashkin, D. P. Smoked marijuana as a cause of lung injury. *Monaldi Arch Chest Dis* **63**, 93-100 (2005).
540. Hart, C. L., Haney, M., Vosburg, S. K., Comer, S. D. & Foltin, R. W. Reinforcing effects of oral Delta9-THC in male marijuana smokers in a laboratory choice procedure. *Psychopharmacology (Berl)* **181**, 237-243 (2005).
541. Herrera, B., Carracedo, A., Diez-Zaera, M., Guzmán, M. & Velasco, G. p38 MAPK is involved in CB2 receptor-induced apoptosis of human leukaemia cells. *FEBS Lett* **579**, 5084-5088 (2005).
542. Scholten, W. K. Medicinal cannabis in oncology practice: still a bridge too far. *J Clin Oncol* **23**, 7755-6; author reply 7756 (2005).
543. de Jong, F. A. et al. Medicinal cannabis in oncology practice: still a bridge too far. *J Clin Oncol* **23**, 2886-2891 (2005).
544. Sharma, R., Tobin, P. & Clarke, S. J. Management of chemotherapy-induced nausea, vomiting, oral mucositis, and diarrhoea. *Lancet Oncol* **6**, 93-102 (2005).
545. Robson, P. Human studies of cannabinoids and medicinal cannabis. *Handb Exp Pharmacol* 719-756 (2005).
546. Frider, E., Bregman, T. & Kirkham, T. C. Endocannabinoids and food intake: newborn suckling and appetite regulation in adulthood. *Exp Biol Med (Maywood)* **230**, 225-234 (2005).
547. Radbruch, L. & Elsner, F. Emerging analgesics in cancer pain management. *Expert Opin Emerg Drugs* **10**, 151-171 (2005).
548. Guzmán, M. Effects on cell viability. *Handb Exp Pharmacol* 627-642 (2005).
549. Chung, K. F. Drugs to suppress cough. *Expert Opin Investig Drugs* **14**, 19-27 (2005).
550. Goncharov, I., Weiner, L. & Vogel, Z. Delta9-tetrahydrocannabinol increases C6 glioma cell death produced by oxidative stress. *Neuroscience* **134**, 567-574 (2005).
551. McKallip, R. J., Nagarkatti, M. & Nagarkatti, P. S. Delta-9-tetrahydrocannabinol enhances breast cancer growth and metastasis by suppression of the antitumor immune response. *J Immunol* **174**, 3281-3289 (2005).
552. Darmani, N. A. & Crim, J. L. Delta-9-tetrahydrocannabinol differentially suppresses emesis versus enhanced locomotor activity produced by chemically diverse dopamine D2/D3 receptor agonists in the least shrew (*Cryptotis parva*). *Pharmacol Biochem Behav* **80**, 35-44 (2005).
553. Jordan, K., Kasper, C. & Schmoll, H. J. Chemotherapy-induced nausea and vomiting: current and new standards in the antiemetic prophylaxis and treatment. *Eur J Cancer* **41**, 199-205 (2005).

554. Melamede, R. Cannabis and tobacco smoke are not equally carcinogenic. *Harm Reduct J* **2**, 21 (2005).
555. McAllister, S. D. et al. Cannabinoids selectively inhibit proliferation and induce death of cultured human glioblastoma multiforme cells. *J Neurooncol* **74**, 31-40 (2005).
556. Ellert-Miklaszewska, A., Kaminska, B. & Konarska, L. Cannabinoids down-regulate PI3K/Akt and Erk signalling pathways and activate proapoptotic function of Bad protein. *Cell Signal* **17**, 25-37 (2005).
557. Izzo, A. A. & Coutts, A. A. Cannabinoids and the digestive tract. *Handb Exp Pharmacol* 573-598 (2005).
558. Patsos, H. A., Hicks, D. J., Greenhough, A., Williams, A. C. & Paraskeva, C. Cannabinoids and cancer: potential for colorectal cancer therapy. *Biochem Soc Trans* **33**, 712-714 (2005).
559. Hall, W., Christie, M. & Currow, D. Cannabinoids and cancer: causation, remediation, and palliation. *Lancet Oncol* **6**, 35-42 (2005).
560. Kogan, N. M. Cannabinoids and cancer. *Mini Rev Med Chem* **5**, 941-952 (2005).
561. Klein, T. W. Cannabinoid-based drugs as anti-inflammatory therapeutics. *Nat Rev Immunol* **5**, 400-411 (2005).
562. Flygare, J., Gustafsson, K., Kimby, E., Christensson, B. & Sander, B. Cannabinoid receptor ligands mediate growth inhibition and cell death in mantle cell lymphoma. *FEBS Lett* **579**, 6885-6889 (2005).
563. Sarfaraz, S., Afaq, F., Adhami, V. M. & Mukhtar, H. Cannabinoid receptor as a novel target for the treatment of prostate cancer. *Cancer Res* **65**, 1635-1641 (2005).
564. Vaccani, A., Massi, P., Colombo, A., Rubino, T. & Parolaro, D. Cannabidiol inhibits human glioma cell migration through a cannabinoid receptor-independent mechanism. *Br J Pharmacol* **144**, 1032-1036 (2005).
565. Myrianthefs, P. M. & Batistaki, C. Cancer cachexia and immunomodulation. *J BUON* **10**, 181-188 (2005).
566. Lee, S. Y., Oh, S. M., Lee, S. K. & Chung, K. H. Antiestrogenic effects of marijuana smoke condensate and cannabinoid compounds. *Arch Pharm Res* **28**, 1365-1375 (2005).
567. Roila, F. et al. Antiemetics in children receiving chemotherapy. *Support Care Cancer* **13**, 129-131 (2005).
568. Hohmann, A. G. A cannabinoid pharmacotherapy for chemotherapy-evoked painful peripheral neuropathy. *Pain* **118**, 3-5 (2005).
569. Inui, A. [Pathogenesis and treatment of cancer anorexia-cachexia, with special emphasis on aged patients]. *Nihon Ronen Igakkai Zasshi* **41**, 460-467 (2004).
570. Duran, M., Laporte, J. R. & Capellà, D. [News about therapeutic use of Cannabis and endocannabinoid system]. *Med Clin (Barc)* **122**, 390-398 (2004).
571. Gorter, R. W. [Experiences with dronabinol (delta-tetrahydrocannabinol) in oncological patients with anorexia-cachexia syndrome. Illustration of clinical problems and therapy based on 2 case reports]. *Schmerz* **18 Suppl 2**, S31-3 (2004).
572. Desreumaux, P., Thuru, X. & Philippe, D. [Control of secretory diarrhea and colorectal cancer growth by cannabinoids in the gut]. *Gastroenterol Clin Biol* **28**, 97 (2004).
573. Nauck, F. & Klaschik, E. [Cannabinoids in the treatment of the cachexia-anorexia

- syndrome in palliative care patients]. *Schmerz* **18**, 197-202 (2004).
574. Kraft, B. & Kress, H. G. [Cannabinoids and the immune system. Of men, mice and cells]. *Schmerz* **18**, 203-210 (2004).
575. Hinz, B., Ramer, R., Eichele, K., Weinzierl, U. & Brune, K. Up-regulation of cyclooxygenase-2 expression is involved in R(+)-methanandamide-induced apoptotic death of human neuroglioma cells. *Mol Pharmacol* **66**, 1643-1651 (2004).
576. Rubovitch, V., Gafni, M. & Sarne, Y. The involvement of VEGF receptors and MAPK in the cannabinoid potentiation of Ca²⁺ flux into N18TG2 neuroblastoma cells. *Brain Res Mol Brain Res* **120**, 138-144 (2004).
577. Carlini, E. A. The good and the bad effects of (-) trans-delta-9-tetrahydrocannabinol (Delta 9-THC) on humans. *Toxicol* **44**, 461-467 (2004).
578. Coutts, A. A. & Izzo, A. A. The gastrointestinal pharmacology of cannabinoids: an update. *Curr Opin Pharmacol* **4**, 572-579 (2004).
579. Kogan, N. M. et al. Synthesis and antitumor activity of quinonoid derivatives of cannabinoids. *J Med Chem* **47**, 3800-3806 (2004).
580. Hinz, B., Ramer, R., Eichele, K., Weinzierl, U. & Brune, K. R(+)-methanandamide-induced cyclooxygenase-2 expression in H4 human neuroglioma cells: possible involvement of membrane lipid rafts. *Biochem Biophys Res Commun* **324**, 621-626 (2004).
581. Martin, B. R. & Wiley, J. L. Mechanism of action of cannabinoids: how it may lead to treatment of cachexia, emesis, and pain. *J Support Oncol* **2**, 305-14; discussion 314 (2004).
582. Velasco, G., Galve-Roperh, I., Sánchez, C., Blázquez, C. & Guzmán, M. Hypothesis: cannabinoid therapy for the treatment of gliomas. *Neuropharmacology* **47**, 315-323 (2004).
583. Medveczky, M. M., Sherwood, T. A., Klein, T. W., Friedman, H. & Medveczky, P. G. Delta-9 tetrahydrocannabinol (THC) inhibits lytic replication of gamma oncogenic herpesviruses in vitro. *BMC Med* **2**, 34 (2004).
584. Carracedo, A. et al. Ceramide sensitizes astrocytes to oxidative stress: protective role of cannabinoids. *Biochem J* **380**, 435-440 (2004).
585. Blázquez, C. et al. Cannabinoids inhibit the vascular endothelial growth factor pathway in gliomas. *Cancer Res* **64**, 5617-5623 (2004).
586. Hart, S., Fischer, O. M. & Ullrich, A. Cannabinoids induce cancer cell proliferation via tumor necrosis factor alpha-converting enzyme (TACE/ADAM17)-mediated transactivation of the epidermal growth factor receptor. *Cancer Res* **64**, 1943-1950 (2004).
587. Contassot, E. et al. Arachidonylethanolamide induces apoptosis of human glioma cells through vanilloid receptor-1. *J Neuropathol Exp Neurol* **63**, 956-963 (2004).
588. Contassot, E., Tenan, M., Schnüriger, V., Pelte, M. F. & Dietrich, P. Y. Arachidonyl ethanolamide induces apoptosis of uterine cervix cancer cells via aberrantly expressed vanilloid receptor-1. *Gynecol Oncol* **93**, 182-188 (2004).
589. Massi, P. et al. Antitumor effects of cannabidiol, a nonpsychoactive cannabinoid, on human glioma cell lines. *J Pharmacol Exp Ther* **308**, 838-845 (2004).
590. Joseph, J., Niggemann, B., Zaenker, K. S. & Entschladen, F. Anandamide is an endogenous inhibitor for the migration of tumor cells and T lymphocytes. *Cancer Immunol Immunother* **53**, 723-728 (2004).

591. Kalant, H. Adverse effects of cannabis on health: an update of the literature since 1996. *Prog Neuropsychopharmacol Biol Psychiatry* **28**, 849-863 (2004).
592. Bifulco, M. & Di Marzo, V. [The endocannabinoid system as a target for the development of new drugs for cancer therapy]. *Recenti Prog Med* **94**, 194-198 (2003).
593. Croxford, J. L. Therapeutic potential of cannabinoids in CNS disease. *CNS Drugs* **17**, 179-202 (2003).
594. Klein, T. W. et al. The cannabinoid system and immune modulation. *J Leukoc Biol* **74**, 486-496 (2003).
595. Ligresti, A. et al. Possible endocannabinoid control of colorectal cancer growth. *Gastroenterology* **125**, 677-687 (2003).
596. Grotenhermen, F. Pharmacokinetics and pharmacodynamics of cannabinoids. *Clin Pharmacokinet* **42**, 327-360 (2003).
597. New toke on treating skin cancer. *Lab Anim (NY)* **32**, 12 (2003).
598. Gardner, B., Zhu, L. X., Sharma, S., Tashkin, D. P. & Dubinett, S. M. Methanandamide increases COX-2 expression and tumor growth in murine lung cancer. *FASEB J* **17**, 2157-2159 (2003).
599. Portella, G. et al. Inhibitory effects of cannabinoid CB1 receptor stimulation on tumor growth and metastatic spreading: actions on signals involved in angiogenesis and metastasis. *FASEB J* **17**, 1771-1773 (2003).
600. Blázquez, C. et al. Inhibition of tumor angiogenesis by cannabinoids. *FASEB J* **17**, 529-531 (2003).
601. Casanova, M. L. et al. Inhibition of skin tumor growth and angiogenesis in vivo by activation of cannabinoid receptors. *J Clin Invest* **111**, 43-50 (2003).
602. Hinz, B., Ramer, R. & Brune, K. Induction of COX-2 expression by the endocannabinoid derivative R(+)-methanandamide. *Adv Exp Med Biol* **525**, 145-152 (2003).
603. Grotenhermen, F. & Müller-Vahl, K. IACM 2nd Conference on Cannabinoids in Medicine. *Expert Opin Pharmacother* **4**, 2367-2371 (2003).
604. Glaser, S. T. et al. Evidence against the presence of an anandamide transporter. *Proc Natl Acad Sci U S A* **100**, 4269-4274 (2003).
605. Walsh, D., Nelson, K. A. & Mahmoud, F. A. Established and potential therapeutic applications of cannabinoids in oncology. *Support Care Cancer* **11**, 137-143 (2003).
606. Sánchez, M. G., Sánchez, A. M., Ruiz-Llorente, L. & Díaz-Laviada, I. Enhancement of androgen receptor expression induced by (R)-methanandamide in prostate LNCaP cells. *FEBS Lett* **555**, 561-566 (2003).
607. Parker, L. A. et al. Effects of cannabinoids on lithium-induced conditioned rejection reactions in a rat model of nausea. *Psychopharmacology (Berl)* **166**, 156-162 (2003).
608. Ramer, R., Weinzierl, U., Schwind, B., Brune, K. & Hinz, B. Ceramide is involved in r(+)-methanandamide-induced cyclooxygenase-2 expression in human neuroglioma cells. *Mol Pharmacol* **64**, 1189-1198 (2003).
609. Ware, M. A., Doyle, C. R., Woods, R., Lynch, M. E. & Clark, A. J. Cannabis use for chronic non-cancer pain: results of a prospective survey. *Pain* **102**, 211-216 (2003).

610. Guzmán, M. Cannabinoids: potential anticancer agents. *Nat Rev Cancer* **3**, 745-755 (2003).
611. Upham, B. L. et al. Cannabinoids inhibit gap junctional intercellular communication and activate ERK in a rat liver epithelial cell line. *Int J Cancer* **104**, 12-18 (2003).
612. Bruera, E. & Castro, M. Cannabinoids in supportive care: are they necessary. *Support Care Cancer* **11**, 133-134 (2003).
613. Vigna, S. R. Cannabinoids and the gut. *Gastroenterology* **125**, 973-975 (2003).
614. Jones, S. & Howl, J. Cannabinoid receptor systems: therapeutic targets for tumour intervention. *Expert Opin Ther Targets* **7**, 749-758 (2003).
615. Kingsley, P. J. & Marnett, L. J. Analysis of endocannabinoids by Ag⁺ coordination tandem mass spectrometry. *Anal Biochem* **314**, 8-15 (2003).
616. Kozak, K. R., Prusakiewicz, J. J., Rowlinson, S. W., Prudhomme, D. R. & Marnett, L. J. Amino acid determinants in cyclooxygenase-2 oxygenation of the endocannabinoid anandamide. *Biochemistry* **42**, 9041-9049 (2003).
617. Jonsson, K. O. et al. AM404 and VDM 11 non-specifically inhibit C6 glioma cell proliferation at concentrations used to block the cellular accumulation of the endocannabinoid anandamide. *Arch Toxicol* **77**, 201-207 (2003).
618. Davis, M. I., Ronesi, J. & Lovinger, D. M. A predominant role for inhibition of the adenylate cyclase/protein kinase A pathway in ERK activation by cannabinoid receptor 1 in N1E-115 neuroblastoma cells. *J Biol Chem* **278**, 48973-48980 (2003).
619. Kehl, L. J. et al. A cannabinoid agonist differentially attenuates deep tissue hyperalgesia in animal models of cancer and inflammatory muscle pain. *Pain* **103**, 175-186 (2003).
620. Ockenga, J., Pirlich, M., Gastell, S. & Lochs, H. [Tumour anorexia--tumour cachexia in case of gastrointestinal tumours: standards and visions]. *Z Gastroenterol* **40**, 929-936 (2002).
621. Zürcher, G. [Anorectic syndrome]. *Z Gastroenterol* **40 Suppl 1**, S71-S5 (2002).
622. Esposito, G. et al. The endocannabinoid system protects rat glioma cells against HIV-1 Tat protein-induced cytotoxicity. Mechanism and regulation. *J Biol Chem* **277**, 50348-50354 (2002).
623. Rubovitch, V., Gafni, M. & Sarne, Y. The cannabinoid agonist DALN positively modulates L-type voltage-dependent calcium-channels in N18TG2 neuroblastoma cells. *Brain Res Mol Brain Res* **101**, 93-102 (2002).
624. Bifulco, M. & Di Marzo, V. Targeting the endocannabinoid system in cancer therapy: a call for further research. *Nat Med* **8**, 547-550 (2002).
625. McKallip, R. J. et al. Targeting CB2 cannabinoid receptors as a novel therapy to treat malignant lymphoblastic disease. *Blood* **100**, 627-634 (2002).
626. Tashkin, D. P., Baldwin, G. C., Sarafian, T., Dubinett, S. & Roth, M. D. Respiratory and immunologic consequences of marijuana smoking. *J Clin Pharmacol* **42**, 71S-81S (2002).
627. Kozak, K. R. & Marnett, L. J. Oxidative metabolism of endocannabinoids. *Prostaglandins Leukot Essent Fatty Acids* **66**, 211-220 (2002).
628. Kozak, K. R. et al. Metabolism of the endocannabinoids, 2-arachidonylglycerol and anandamide, into prostaglandin, thromboxane, and prostacyclin glycerol esters and ethanolamides. *J Biol Chem* **277**, 44877-44885 (2002).

629. Galve-Roperh, I., Rueda, D., Gómez del Pulgar, T., Velasco, G. & Guzmán, M. Mechanism of extracellular signal-regulated kinase activation by the CB(1) cannabinoid receptor. *Mol Pharmacol* **62**, 1385-1392 (2002).
630. Hashibe, M., Ford, D. E. & Zhang, Z. F. Marijuana smoking and head and neck cancer. *J Clin Pharmacol* **42**, 103S-107S (2002).
631. Ek, S., Högerkorp, C. M., Dictor, M., Ehinger, M. & Borrebaeck, C. A. Mantle cell lymphomas express a distinct genetic signature affecting lymphocyte trafficking and growth regulation as compared with subpopulations of normal human B cells. *Cancer Res* **62**, 4398-4405 (2002).
632. Jordà, M. A. et al. Hematopoietic cells expressing the peripheral cannabinoid receptor migrate in response to the endocannabinoid 2-arachidonoylglycerol. *Blood* **99**, 2786-2793 (2002).
633. Parolaro, D., Massi, P., Rubino, T. & Monti, E. Endocannabinoids in the immune system and cancer. *Prostaglandins Leukot Essent Fatty Acids* **66**, 319-332 (2002).
634. Fernández-Ruiz, J., Lastres-Becker, I., Cabranes, A., González, S. & Ramos, J. A. Endocannabinoids and basal ganglia functionality. *Prostaglandins Leukot Essent Fatty Acids* **66**, 257-267 (2002).
635. De Petrocellis, L. et al. Effect on cancer cell proliferation of palmitoylethanolamide, a fatty acid amide interacting with both the cannabinoid and vanilloid signalling systems. *Fundam Clin Pharmacol* **16**, 297-302 (2002).
636. Jatoi, A. et al. Dronabinol versus megestrol acetate versus combination therapy for cancer-associated anorexia: a North Central Cancer Treatment Group study. *J Clin Oncol* **20**, 567-573 (2002).
637. Jatoi, A. et al. Does megestrol acetate down-regulate interleukin-6 in patients with cancer-associated anorexia and weight loss? A North Central Cancer Treatment Group investigation. *Support Care Cancer* **10**, 71-75 (2002).
638. Gómez del Pulgar, T., Velasco, G., Sánchez, C., Haro, A. & Guzmán, M. De novo-synthesized ceramide is involved in cannabinoid-induced apoptosis. *Biochem J* **363**, 183-188 (2002).
639. Reynolds, R. Comparative efficacy of dronabinol and megestrol acetate. *J Clin Oncol* **20**, 2912-3; author reply 2913 (2002).
640. Zhou, D. & Song, Z. H. CB1 cannabinoid receptor-mediated tyrosine phosphorylation of focal adhesion kinase-related non-kinase. *FEBS Lett* **525**, 164-168 (2002).
641. Gómez Del Pulgar, T., De Ceballos, M. L., Guzmán, M. & Velasco, G. Cannabinoids protect astrocytes from ceramide-induced apoptosis through the phosphatidylinositol 3-kinase/protein kinase B pathway. *J Biol Chem* **277**, 36527-36533 (2002).
642. Smith, P. F. Cannabinoids in the treatment of pain and spasticity in multiple sclerosis. *Curr Opin Investig Drugs* **3**, 859-864 (2002).
643. Guzmán, M., Sánchez, C. & Galve-Roperh, I. Cannabinoids and cell fate. *Pharmacol Ther* **95**, 175-184 (2002).
644. Pertwee, R. G. & Ross, R. A. Cannabinoid receptors and their ligands. *Prostaglandins Leukot Essent Fatty Acids* **66**, 101-121 (2002).
645. Melck, D. et al. Cannabimimetic eicosanoids in cancer and inflammation: an update. *Adv Exp Med Biol* **507**, 381-386 (2002).

646. Inui, A. Cancer anorexia-cachexia syndrome: current issues in research and management. *CA Cancer J Clin* **52**, 72-91 (2002).
647. Ishii, I. & Chun, J. Anandamide-induced neuroblastoma cell rounding via the CB1 cannabinoid receptors. *Neuroreport* **13**, 593-596 (2002).
648. Mechoulam, R. & Hanu, L. The cannabinoids: an overview. Therapeutic implications in vomiting and nausea after cancer chemotherapy, in appetite promotion, in multiple sclerosis and in neuroprotection. *Pain Res Manag* **6**, 67-73 (2001).
649. Ripamonti, C. & Dickerson, E. D. Strategies for the treatment of cancer pain in the new millennium. *Drugs* **61**, 955-977 (2001).
650. Moody, J. S., Kozak, K. R., Ji, C. & Marnett, L. J. Selective oxygenation of the endocannabinoid 2-arachidonylglycerol by leukocyte-type 12-lipoxygenase. *Biochemistry* **40**, 861-866 (2001).
651. Ramer, R., Brune, K., Pahl, A. & Hinz, B. R(+)-methanandamide induces cyclooxygenase-2 expression in human neuroglioma cells via a non-cannabinoid receptor-mediated mechanism. *Biochem Biophys Res Commun* **286**, 1144-1152 (2001).
652. Di Marzo, V. et al. Palmitoylethanolamide inhibits the expression of fatty acid amide hydrolase and enhances the anti-proliferative effect of anandamide in human breast cancer cells. *Biochem J* **358**, 249-255 (2001).
653. Pagotto, U. et al. Normal human pituitary gland and pituitary adenomas express cannabinoid receptor type 1 and synthesize endogenous cannabinoids: first evidence for a direct role of cannabinoids on hormone modulation at the human pituitary level. *J Clin Endocrinol Metab* **86**, 2687-2696 (2001).
654. Kalant, H. Medicinal use of cannabis: history and current status. *Pain Res Manag* **6**, 80-91 (2001).
655. Jacobsson, S. O., Wallin, T. & Fowler, C. J. Inhibition of rat C6 glioma cell proliferation by endogenous and synthetic cannabinoids. Relative involvement of cannabinoid and vanilloid receptors. *J Pharmacol Exp Ther* **299**, 951-959 (2001).
656. Sánchez, C. et al. Inhibition of glioma growth in vivo by selective activation of the CB(2) cannabinoid receptor. *Cancer Res* **61**, 5784-5789 (2001).
657. Roth, M. D. et al. Induction and regulation of the carcinogen-metabolizing enzyme CYP1A1 by marijuana smoke and delta (9)-tetrahydrocannabinol. *Am J Respir Cell Mol Biol* **24**, 339-344 (2001).
658. Maccarrone, M., Attinà, M., Cartoni, A., Bari, M. & Finazzi-Agrò, A. Gas chromatography-mass spectrometry analysis of endogenous cannabinoids in healthy and tumoral human brain and human cells in culture. *J Neurochem* **76**, 594-601 (2001).
659. Varga, A. et al. Effects of butaclamol, clopenthixol, mepromazine and cannabinol stereoisomers on apoptosis induction. *Anticancer Res* **21**, 2709-2712 (2001).
660. ElSohly, M. A., deWit, H., Wachtel, S. R., Feng, S. & Murphy, T. P. Delta9-tetrahydrocannabinol as a marker for the ingestion of marijuana versus Marinol: results of a clinical study. *J Anal Toxicol* **25**, 565-571 (2001).
661. Velasco, L., Ruiz, L., Sánchez, M. G. & Díaz-Laviada, I. delta(9)-Tetrahydrocannabinol increases nerve growth factor production by prostate PC-3 cells. Involvement of CB1 cannabinoid receptor and Raf-1. *Eur J Biochem* **268**,

- 531-535 (2001).
662. Darmani, N. A. Delta(9)-tetrahydrocannabinol and synthetic cannabinoids prevent emesis produced by the cannabinoid CB(1) receptor antagonist/inverse agonist SR 141716A. *Neuropsychopharmacology* **24**, 198-203 (2001).
 663. Guzmán, M., Sánchez, C. & Galve-Roperh, I. Control of the cell survival/death decision by cannabinoids. *J Mol Med (Berl)* **78**, 613-625 (2001).
 664. Bifulco, M. et al. Control by the endogenous cannabinoid system of ras oncogene-dependent tumor growth. *FASEB J* **15**, 2745-2747 (2001).
 665. Jacobsson, S. O. & Fowler, C. J. Characterization of palmitoylethanolamide transport in mouse Neuro-2a neuroblastoma and rat RBL-2H3 basophilic leukaemia cells: comparison with anandamide. *Br J Pharmacol* **132**, 1743-1754 (2001).
 666. Zhou, D. & Song, Z. H. CB1 cannabinoid receptor-mediated neurite remodeling in mouse neuroblastoma N1E-115 cells. *J Neurosci Res* **65**, 346-353 (2001).
 667. Walker, J. M., Strangman, N. M. & Huang, S. M. Cannabinoids and pain. *Pain Res Manag* **6**, 74-79 (2001).
 668. Campbell, F. A. et al. Are cannabinoids an effective and safe treatment option in the management of pain? A qualitative systematic review. *BMJ* **323**, 13-16 (2001).
 669. Recht, L. D. et al. Antitumor effects of ajulemic acid (CT3), a synthetic non-psychoactive cannabinoid. *Biochem Pharmacol* **62**, 755-763 (2001).
 670. Jamshidi, N. & Taylor, D. A. Anandamide administration into the ventromedial hypothalamus stimulates appetite in rats. *Br J Pharmacol* **134**, 1151-1154 (2001).
 671. Kozak, K. R., Prusakiewicz, J. J., Rowlinson, S. W., Schneider, C. & Marnett, L. J. Amino acid determinants in cyclooxygenase-2 oxygenation of the endocannabinoid 2-arachidonylglycerol. *J Biol Chem* **276**, 30072-30077 (2001).
 672. Tashkin, D. P. Airway effects of marijuana, cocaine, and other inhaled illicit agents. *Curr Opin Pulm Med* **7**, 43-61 (2001).
 673. Lorenzo Fernández, P. [Potential therapeutic usefulness of cannabis and cannabinoids]. *An R Acad Nac Med (Madr)* **117**, 595-605; discussion 616 (2000).
 674. Carriot, F. & Sasco, A. J. [Cannabis and cancer]. *Rev Epidemiol Sante Publique* **48**, 473-483 (2000).
 675. Bénard, J. [Cannabinoids, among others, send malignant glial tumors to nirvana.]. *Bull Cancer* **87**, 299-300 (2000).
 676. Gómez del Pulgar, T., Velasco, G. & Guzmán, M. The CB1 cannabinoid receptor is coupled to the activation of protein kinase B/Akt. *Biochem J* **347**, 369-373 (2000).
 677. Muthian, S., Nithipatikom, K., Campbell, W. B. & Hillard, C. J. Synthesis and characterization of a fluorescent substrate for the N-arachidonylethanolamine (anandamide) transmembrane carrier. *J Pharmacol Exp Ther* **293**, 289-295 (2000).
 678. Melck, D. et al. Suppression of nerve growth factor Trk receptors and prolactin receptors by endocannabinoids leads to inhibition of human breast and prostate cancer cell proliferation. *Endocrinology* **141**, 118-126 (2000).
 679. Jacobsson, S. O., Rongård, E., Stridh, M., Tiger, G. & Fowler, C. J. Serum-dependent effects of tamoxifen and cannabinoids upon C6 glioma cell viability. *Biochem Pharmacol* **60**, 1807-1813 (2000).
 680. Yea, S. S., Yang, K. H. & Kaminski, N. E. Role of nuclear factor of activated T-cells and activator protein-1 in the inhibition of interleukin-2 gene transcription by cannabinol in EL4 T-cells. *J Pharmacol Exp Ther* **292**, 597-605 (2000).

681. Piomelli, D. Pot of gold for glioma therapy. *Nat Med* **6**, 255-256 (2000).
682. Molnár, J. et al. Membrane associated antitumor effects of crocine-, ginsenoside- and cannabinoid derivatives. *Anticancer Res* **20**, 861-867 (2000).
683. Di, M., Bisogno, T. & De Petrocellis, L. Endocannabinoids: new targets for drug development. *Curr Pharm Des* **6**, 1361-1380 (2000).
684. De Petrocellis, L., Melck, D., Bisogno, T. & Di Marzo, V. Endocannabinoids and fatty acid amides in cancer, inflammation and related disorders. *Chem Phys Lipids* **108**, 191-209 (2000).
685. MacCarrone, M. et al. Down-regulation of anandamide hydrolase in mouse uterus by sex hormones. *Eur J Biochem* **267**, 2991-2997 (2000).
686. Zhu, L. X. et al. Delta-9-tetrahydrocannabinol inhibits antitumor immunity by a CB2 receptor-mediated, cytokine-dependent pathway. *J Immunol* **165**, 373-380 (2000).
687. Rubino, T. et al. Chronic delta-9-tetrahydrocannabinol treatment increases cAMP levels and cAMP-dependent protein kinase activity in some rat brain regions. *Neuropharmacology* **39**, 1331-1336 (2000).
688. Ho, B. Y. et al. Cannabinoid CB1 receptor-mediated inhibition of prolactin release and signaling mechanisms in GH4C1 cells. *Endocrinology* **141**, 1675-1685 (2000).
689. Di Marzo, V., Melck, D., De Petrocellis, L. & Bisogno, T. Cannabimimetic fatty acid derivatives in cancer and inflammation. *Prostaglandins Other Lipid Mediat* **61**, 43-61 (2000).
690. Baron, M. Appetite stimulants: the unsolved truth. *Health Care Food Nutr Focus* **16**, 5-7 (2000).
691. Huff, J. & Chan, P. Antitumor effects of THC. *Environ Health Perspect* **108**, A442-3 (2000).
692. Galve-Roperh, I. et al. Anti-tumoral action of cannabinoids: involvement of sustained ceramide accumulation and extracellular signal-regulated kinase activation. *Nat Med* **6**, 313-319 (2000).
693. Studies of high-dose chemotherapy with stem cell support for breast cancer. *Am J Health Syst Pharm* **56**, 940 (1999).
694. Mechoulam, R. Recent advantages in cannabinoid research. *Forsch Komplementarmed* **6 Suppl 3**, 16-20 (1999).
695. Sarafian, T. A., Magallanes, J. A., Shau, H., Tashkin, D. & Roth, M. D. Oxidative stress produced by marijuana smoke. An adverse effect enhanced by cannabinoids. *Am J Respir Cell Mol Biol* **20**, 1286-1293 (1999).
696. Berglund, B. A., Boring, D. L. & Howlett, A. C. Investigation of structural analogs of prostaglandin amides for binding to and activation of CB1 and CB2 cannabinoid receptors in rat brain and human tonsils. *Adv Exp Med Biol* **469**, 527-533 (1999).
697. Ruiz, L., Miguel, A. & Díaz-Laviada, I. Delta9-tetrahydrocannabinol induces apoptosis in human prostate PC-3 cells via a receptor-independent mechanism. *FEBS Lett* **458**, 400-404 (1999).
698. Basavarajappa, B. S. & Hungund, B. L. Chronic ethanol increases the cannabinoid receptor agonist anandamide and its precursor N-arachidonoylphosphatidylethanolamine in SK-N-SH cells. *J Neurochem* **72**, 522-528 (1999).
699. Kenney, S. P. et al. Cannabinoid receptors and their role in the regulation of the

- serotonin transporter in human placenta. *Am J Obstet Gynecol* **181**, 491-497 (1999).
700. Gorter, R. W. Cancer cachexia and cannabinoids. *Forsch Komplementarmed* **6 Suppl 3**, 21-22 (1999).
701. Dajani, E. Z. et al. 1',1'-Dimethylheptyl-delta-8-tetrahydrocannabinol-11-oic acid: a novel, orally effective cannabinoid with analgesic and anti-inflammatory properties. *J Pharmacol Exp Ther* **291**, 31-38 (1999).
702. Bruera, E. & Neumann, C. M. The uses of psychotropics in symptom management in advanced cancer. *Psychooncology* **7**, 346-358 (1998).
703. Valk, P. J. & Delwel, R. The peripheral cannabinoid receptor, Cb2, in retrovirally-induced leukemic transformation and normal hematopoiesis. *Leuk Lymphoma* **32**, 29-43 (1998).
704. De Petrocellis, L. et al. The endogenous cannabinoid anandamide inhibits human breast cancer cell proliferation. *Proc Natl Acad Sci U S A* **95**, 8375-8380 (1998).
705. Di Toro, R., Campana, G., Sciarretta, V., Murari, G. & Spampinato, S. Regulation of delta opioid receptors by delta9-tetrahydrocannabinol in NG108-15 hybrid cells. *Life Sci* **63**, PL197-204 (1998).
706. Roila, F., Ciccamese, G., Palladino, M. A. & De Angelis, V. Prevention of radiotherapy-induced emesis. *Tumori* **84**, 274-278 (1998).
707. Crites-Leoni, A. Medicinal use of marijuana. Is the debate a smoke screen for movement toward legalization. *J Leg Med* **19**, 273-304 (1998).
708. Di Marzo, V. et al. Interactions between synthetic vanilloids and the endogenous cannabinoid system. *FEBS Lett* **436**, 449-454 (1998).
709. Sánchez, C., Galve-Roperh, I., Canova, C., Brachet, P. & Guzmán, M. Delta9-tetrahydrocannabinol induces apoptosis in C6 glioma cells. *FEBS Lett* **436**, 6-10 (1998).
710. Srivastava, M. D., Srivastava, B. I. & Brouhard, B. Delta9 tetrahydrocannabinol and cannabidiol alter cytokine production by human immune cells. *Immunopharmacology* **40**, 179-185 (1998).
711. Herrstedt, J., Aapro, M. S., Smyth, J. F. & Del Favero, A. Corticosteroids, dopamine antagonists and other drugs. *Support Care Cancer* **6**, 204-214 (1998).
712. Ongrádi, J., Specter, S., Horváth, A. & Friedman, H. Combined in vitro effect of marijuana and retrovirus on the activity of mouse natural killer cells. *Pathol Oncol Res* **4**, 191-199 (1998).
713. Gorter, R. Cannabis and cannabidiol: interview with Robert Gorter, M.D. Interview by Fred Gardner. *AIDS Treat News* 4-6 concl (1998).
714. Baek, S. H. et al. Boron trifluoride etherate on silica-A modified Lewis acid reagent (VII). Antitumor activity of cannabigerol against human oral epitheloid carcinoma cells. *Arch Pharm Res* **21**, 353-356 (1998).
715. Maccarrone, M. et al. Anandamide hydrolysis by human cells in culture and brain. *J Biol Chem* **273**, 32332-32339 (1998).
716. Taylor, H. G. Analysis of the medical use of marijuana and its societal implications. *J Am Pharm Assoc (Wash)* **38**, 220-227 (1998).
717. Calhoun, S. R., Galloway, G. P. & Smith, D. E. Abuse potential of dronabinol (Marinol). *J Psychoactive Drugs* **30**, 187-196 (1998).
718. Killestein, J. & Nelemans, S. A. [Therapeutic applications and biomedical effects of cannabinoids; pharmacological starting points]. *Ned Tijdschr Geneesk* **141**, 1689-

- 1693 (1997).
719. Bisogno, T., Sepe, N., De Petrocellis, L., Mechoulam, R. & Di Marzo, V. The sleep inducing factor oleamide is produced by mouse neuroblastoma cells. *Biochem Biophys Res Commun* **239**, 473-479 (1997).
 720. Goodman, M. Risk factors and antiemetic management of chemotherapy-induced nausea and vomiting. *Oncol Nurs Forum* **24**, 20-32 (1997).
 721. Mathre, M. L. Medicinal use of marijuana. *Am J Nurs* **97**, 23 (1997).
 722. Voth, E. A. & Schwartz, R. H. Medicinal applications of delta-9-tetrahydrocannabinol and marijuana. *Ann Intern Med* **126**, 791-798 (1997).
 723. McPartland, J. M. & Pruitt, P. L. Medical marijuana and its use by the immunocompromised. *Altern Ther Health Med* **3**, 39-45 (1997).
 724. Burstein, S. Marijuana as a medicine. *Nature* **386**, 320 (1997).
 725. Abood, M. E., Ditto, K. E., Noel, M. A., Showalter, V. M. & Tao, Q. Isolation and expression of a mouse CB1 cannabinoid receptor gene. Comparison of binding properties with those of native CB1 receptors in mouse brain and N18TG2 neuroblastoma cells. *Biochem Pharmacol* **53**, 207-214 (1997).
 726. Gonzalez-Rosales, F. & Walsh, D. Intractable nausea and vomiting due to gastrointestinal mucosal metastases relieved by tetrahydrocannabinol (dronabinol). *J Pain Symptom Manage* **14**, 311-314 (1997).
 727. Ruh, M. F., Taylor, J. A., Howlett, A. C. & Welshons, W. V. Failure of cannabinoid compounds to stimulate estrogen receptors. *Biochem Pharmacol* **53**, 35-41 (1997).
 728. Sánchez, C., Velasco, G. & Guzmán, M. Delta9-tetrahydrocannabinol stimulates glucose utilization in C6 glioma cells. *Brain Res* **767**, 64-71 (1997).
 729. Bisogno, T. et al. Biosynthesis, release and degradation of the novel endogenous cannabimimetic metabolite 2-arachidonoylglycerol in mouse neuroblastoma cells. *Biochem J* **322**, 671-677 (1997).
 730. Stark, S., Pacheco, M. A. & Childers, S. R. Binding of aminoalkylindoles to noncannabinoid binding sites in NG108-15 cells. *Cell Mol Neurobiol* **17**, 483-493 (1997).
 731. Axelrod, R. S. Antiemetic therapy. *Compr Ther* **23**, 539-545 (1997).
 732. Reiter, G. S. The HIV wasting syndrome. *AIDS Clin Care* **8**, 89-91, 93, 96 (1996).
 733. Lew, G. M. Tau protein after delta-9-tetrahydrocannabinol in a human neuroblastoma cell line. *Gen Pharmacol* **27**, 1141-1143 (1996).
 734. Di Marzo, V., De Petrocellis, L., Sugiura, T. & Waku, K. Potential biosynthetic connections between the two cannabimimetic eicosanoids, anandamide and 2-arachidonoyl-glycerol, in mouse neuroblastoma cells. *Biochem Biophys Res Commun* **227**, 281-288 (1996).
 735. Abood, M. E. & Martin, B. R. Molecular neurobiology of the cannabinoid receptor. *Int Rev Neurobiol* **39**, 197-221 (1996).
 736. Mirken, B. Medical marijuana: the state of the research. *AIDS Treat News* 1-3 (1996).
 737. Bayewitch, M. et al. Delta9-tetrahydrocannabinol antagonizes the peripheral cannabinoid receptor-mediated inhibition of adenylyl cyclase. *J Biol Chem* **271**, 9902-9905 (1996).
 738. Di Marzo, V., De Petrocellis, L., Sepe, N. & Buono, A. Biosynthesis of anandamide and related acylethanolamides in mouse J774 macrophages and N18 neuroblastoma

- cells. *Biochem J* **316**, 977-984 (1996).
739. Sugiura, T. et al. 2-Arachidonoylglycerol, a putative endogenous cannabinoid receptor ligand, induces rapid, transient elevation of intracellular free Ca²⁺ in neuroblastoma x glioma hybrid NG108-15 cells. *Biochem Biophys Res Commun* **229**, 58-64 (1996).
740. Richter, B., Marangos, N., Jeron, A. & Irscheid, S. [3 different malignancies of the aerodigestive tract after chronic abuse of cannabis products]. *HNO* **43**, 728-731 (1995).
741. Doblin, R. & Kleiman, M. A. The medical use of marijuana: the case for clinical trials. *J Addict Dis* **14**, 5-14 (1995).
742. James, J. S. Thalidomide for wasting syndrome: progress toward compromise. *AIDS Treat News* 1-5 (1995).
743. Burstein, S. H. & Hunter, S. A. Stimulation of anandamide biosynthesis in N-18TG2 neuroblastoma cells by delta 9-tetrahydrocannabinol (THC). *Biochem Pharmacol* **49**, 855-858 (1995).
744. Gilbert, C. J., Ohly, K. V., Rosner, G. & Peters, W. P. Randomized, double-blind comparison of a prochlorperazine-based versus a metoclopramide-based antiemetic regimen in patients undergoing autologous bone marrow transplantation. *Cancer* **76**, 2330-2337 (1995).
745. Stimmel, B. Medical marijuana: to prescribe or not to prescribe, that is the question. *J Addict Dis* **14**, 1-3 (1995).
746. Schwartz, R. H. & Voth, E. A. Marijuana as medicine: making a silk purse out of a sow's ear. *J Addict Dis* **14**, 15-21 (1995).
747. Hirst, R. A. & Lambert, D. G. Do SH-SY5Y human neuroblastoma cells express cannabinoid receptors. *Biochem Soc Trans* **23**, 418S (1995).
748. Burnette-Curley, D. & Cabral, G. A. Differential inhibition of RAW264.7 macrophage tumoricidal activity by delta 9tetrahydrocannabinol. *Proc Soc Exp Biol Med* **210**, 64-76 (1995).
749. Abrahamov, A. & Mechoulam, R. An efficient new cannabinoid antiemetic in pediatric oncology. *Life Sci* **56**, 2097-2102 (1995).
750. Schwartz, R. H. & Beveridge, R. A. Marijuana as an antiemetic drug: how useful is it today? Opinions from clinical oncologists. *J Addict Dis* **13**, 53-65 (1994).
751. Kusher, D. I., Dawson, L. O., Taylor, A. C. & Djeu, J. Y. Effect of the psychoactive metabolite of marijuana, delta 9-tetrahydrocannabinol (THC), on the synthesis of tumor necrosis factor by human large granular lymphocytes. *Cell Immunol* **154**, 99-108 (1994).
752. Beal, J. A. Appetite effect of dronabinol. *J Clin Oncol* **12**, 1524-1525 (1994).
753. Vigano, A., Watanabe, S. & Bruera, E. Anorexia and cachexia in advanced cancer patients. *Cancer Surv* **21**, 99-115 (1994).
754. Nelson, K., Walsh, D., Deeter, P. & Sheehan, F. A phase II study of delta-9-tetrahydrocannabinol for appetite stimulation in cancer-associated anorexia. *J Palliat Care* **10**, 14-18 (1994).
755. Bruera, E. Is the pharmacological treatment of cancer cachexia possible. *Support Care Cancer* **1**, 298-304 (1993).
756. Mackie, K., Devane, W. A. & Hille, B. Anandamide, an endogenous cannabinoid, inhibits calcium currents as a partial agonist in N18 neuroblastoma cells. *Mol*

- Pharmacol* **44**, 498-503 (1993).
757. Nahas, G. & Latour, C. The human toxicity of marijuana. *Med J Aust* **156**, 495-497 (1992).
758. Mitchelson, F. Pharmacological agents affecting emesis. A review (Part I). *Drugs* **43**, 295-315 (1992).
759. Campbell, M. & Bateman, D. N. Pharmacokinetic optimisation of antiemetic therapy. *Clin Pharmacokinet* **23**, 147-160 (1992).
760. Tchekmedyan, N. S., Halpert, C., Ashley, J. & Heber, D. Nutrition in advanced cancer: anorexia as an outcome variable and target of therapy. *JPEN J Parenter Enteral Nutr* **16**, 88S-92S (1992).
761. Bruera, E. Current pharmacological management of anorexia in cancer patients. *Oncology (Williston Park)* **6**, 125-30; discussion 132, 137 (1992).
762. Bruera, E. Clinical management of anorexia and cachexia in patients with advanced cancer. *Oncology* **49 Suppl 2**, 35-42 (1992).
763. Mackie, K. & Hille, B. Cannabinoids inhibit N-type calcium channels in neuroblastoma-glioma cells. *Proc Natl Acad Sci U S A* **89**, 3825-3829 (1992).
764. Caulfield, M. P. & Brown, D. A. Cannabinoid receptor agonists inhibit Ca current in NG108-15 neuroblastoma cells via a pertussis toxin-sensitive mechanism. *Br J Pharmacol* **106**, 231-232 (1992).
765. Plasse, T. F. et al. Recent clinical experience with dronabinol. *Pharmacol Biochem Behav* **40**, 695-700 (1991).
766. Krasnow, S. H. New directions in managing chemotherapy-related emesis. *Oncology (Williston Park)* **5**, 19-24 (1991).
767. Gorter, R. Management of anorexia-cachexia associated with cancer and HIV infection. *Oncology (Williston Park)* **5**, 13-17 (1991).
768. Lane, M. et al. Dronabinol and prochlorperazine in combination for treatment of cancer chemotherapy-induced nausea and vomiting. *J Pain Symptom Manage* **6**, 352-359 (1991).
769. Turkanis, S. A., Karler, R. & Partlow, L. M. Differential effects of delta-9-tetrahydrocannabinol and its 11-hydroxy metabolite on sodium current in neuroblastoma cells. *Brain Res* **560**, 245-250 (1991).
770. Turkanis, S. A., Partlow, L. M. & Karler, R. Delta-9-tetrahydrocannabinol depresses inward sodium current in mouse neuroblastoma cells. *Neuropharmacology* **30**, 73-77 (1991).
771. Specter, S., Lancz, G., Westrich, G. & Friedman, H. Delta-9-tetrahydrocannabinol augments murine retroviral induced immunosuppression and infection. *Int J Immunopharmacol* **13**, 411-417 (1991).
772. Burstein, S. Cannabinoid induced changes in eicosanoid synthesis by mouse peritoneal cells. *Adv Exp Med Biol* **288**, 107-112 (1991).
773. Rowley, J. T. & Rowley, P. T. Tetrahydrocannabinol inhibits adenylyl cyclase in human leukemia cells. *Life Sci* **46**, 217-222 (1990).
774. Tashkin, D. P. Pulmonary complications of smoked substance abuse. *West J Med* **152**, 525-530 (1990).
775. Johnson, B. A. Psychopharmacological effects of cannabis. *Br J Hosp Med* **43**, 114-6, 118 (1990).
776. Tortorice, P. V. & O'Connell, M. B. Management of chemotherapy-induced nausea

- and vomiting. *Pharmacotherapy* **10**, 129-145 (1990).
777. Lane, M., Smith, F. E., Sullivan, R. A. & Plasse, T. F. Dronabinol and prochlorperazine alone and in combination as antiemetic agents for cancer chemotherapy. *Am J Clin Oncol* **13**, 480-484 (1990).
778. Maurer, M., Henn, V., Dittrich, A. & Hofmann, A. Delta-9-tetrahydrocannabinol shows antispastic and analgesic effects in a single case double-blind trial. *Eur Arch Psychiatry Clin Neurosci* **240**, 1-4 (1990).
779. Sacks, N., Hutcheson, J. R., Watts, J. M. & Webb, R. E. Case report: the effect of tetrahydrocannabinol on food intake during chemotherapy. *J Am Coll Nutr* **9**, 630-632 (1990).
780. Stewart, D. J. Cancer therapy, vomiting, and antiemetics. *Can J Physiol Pharmacol* **68**, 304-313 (1990).
781. Howlett, A. C., Scott, D. K. & Wilken, G. H. Regulation of adenylate cyclase by cannabinoid drugs. Insights based on thermodynamic studies. *Biochem Pharmacol* **38**, 3297-3304 (1989).
782. Shook, J. E. & Burks, T. F. Psychoactive cannabinoids reduce gastrointestinal propulsion and motility in rodents. *J Pharmacol Exp Ther* **249**, 444-449 (1989).
783. Grunberg, S. M. Advances in the management of nausea and vomiting induced by non-cisplatin containing chemotherapeutic regimens. *Blood Rev* **3**, 216-221 (1989).
784. Trissel, L. A. & Flora, K. P. Stability studies: five years later. *Am J Hosp Pharm* **45**, 1569-1571 (1988).
785. Nabilone and other antiemetics for cancer patients. *Med Lett Drugs Ther* **30**, 2-4 (1988).
786. McCabe, M. et al. Efficacy of tetrahydrocannabinol in patients refractory to standard antiemetic therapy. *Invest New Drugs* **6**, 243-246 (1988).
787. Manzo, M. Dronabinol and nabilone ease cancer chemotherapy. *Nursing* **18**, 81 (1988).
788. Cunningham, D. et al. A randomized trial of oral nabilone and prochlorperazine compared to intravenous metoclopramide and dexamethasone in the treatment of nausea and vomiting induced by chemotherapy regimens containing cisplatin or cisplatin analogues. *Eur J Cancer Clin Oncol* **24**, 685-689 (1988).
789. Triozzi, P. L. & Laszlo, J. Optimum management of nausea and vomiting in cancer chemotherapy. *Drugs* **34**, 136-149 (1987).
790. Chan, H. S., Correia, J. A. & MacLeod, S. M. Nabilone versus prochlorperazine for control of cancer chemotherapy-induced emesis in children: a double-blind, crossover trial. *Pediatrics* **79**, 946-952 (1987).
791. Cabral, G. A., McNerney, P. J. & Mishkin, E. M. Interaction of delta-9-tetrahydrocannabinol with rat B103 neuroblastoma cells. *Arch Toxicol* **60**, 438-449 (1987).
792. Yahya, M. D. & Watson, R. R. Immunomodulation by morphine and marijuana. *Life Sci* **41**, 2503-2510 (1987).
793. Murison, G., Chubb, C. B., Maeda, S., Gemmell, M. A. & Huberman, E. Cannabinoids induce incomplete maturation of cultured human leukemia cells. *Proc Natl Acad Sci U S A* **84**, 5414-5418 (1987).
794. Niiranen, A. & Mattson, K. Antiemetic efficacy of nabilone and dexamethasone: a randomized study of patients with lung cancer receiving chemotherapy. *Am J Clin*

- Oncol* **10**, 325-329 (1987).
795. Hanasono, G. K., Sullivan, H. R., Gries, C. L., Jordan, W. H. & Emmerson, J. L. A species comparison of the toxicity of nabilone, a new synthetic cannabinoid. *Fundam Appl Toxicol* **9**, 185-197 (1987).
796. Murakami, M. & Ota, K. [Recent advances in the management of chemotherapy-induced emesis]. *Gan To Kagaku Ryoho* **13**, 401-411 (1986).
797. Roffman, R. A. Stress inoculation training in the control of THC toxicities. *Int J Addict* **21**, 883-896 (1986).
798. Pomeroy, M., Fennelly, J. J. & Towers, M. Prospective randomized double-blind trial of nabilone versus domperidone in the treatment of cytotoxic-induced emesis. *Cancer Chemother Pharmacol* **17**, 285-288 (1986).
799. Dalzell, A. M., Bartlett, H. & Lilleyman, J. S. Nabilone: an alternative antiemetic for cancer chemotherapy. *Arch Dis Child* **61**, 502-505 (1986).
800. Donald, P. J. Marijuana smoking--possible cause of head and neck carcinoma in young patients. *Otolaryngol Head Neck Surg* **94**, 517-521 (1986).
801. Howlett, A. C., Qualy, J. M. & Khachatrian, L. L. Involvement of Gi in the inhibition of adenylate cyclase by cannabimimetic drugs. *Mol Pharmacol* **29**, 307-313 (1986).
802. Niederle, N., Schütte, J. & Schmidt, C. G. Crossover comparison of the antiemetic efficacy of nabilone and alizapride in patients with nonseminomatous testicular cancer receiving cisplatin therapy. *Klin Wochenschr* **64**, 362-365 (1986).
803. Devane, W. A., Spain, J. W., Coscia, C. J. & Howlett, A. C. An assessment of the role of opioid receptors in the response to cannabimimetic drugs. *J Neurochem* **46**, 1929-1935 (1986).
804. Dodds, L. J. The control of cancer chemotherapy-induced nausea and vomiting. *J Clin Hosp Pharm* **10**, 143-166 (1985).
805. Ungerleider, J. T. et al. THC or Compazine for the cancer chemotherapy patient--the UCLA study. Part II: Patient drug preference. *Am J Clin Oncol* **8**, 142-147 (1985).
806. Synthetic marijuana for nausea and vomiting due to cancer chemotherapy. *Med Lett Drugs Ther* **27**, 97-98 (1985).
807. Ward, A. & Holmes, B. Nabilone. A preliminary review of its pharmacological properties and therapeutic use. *Drugs* **30**, 127-144 (1985).
808. Braunstein, G. D., Thompson, R., Gross, S. & Soares, J. R. Marijuana use does not spuriously elevate serum human chorionic gonadotropin levels. *Urology* **25**, 605-606 (1985).
809. Szepsenwol, J., Fletcher, J., Casales, E. A. & Murison, G. L. Experimentally produced synovial sarcoma in mice. *Oncology* **42**, 61-67 (1985).
810. Perlin, E. et al. Disposition and bioavailability of various formulations of tetrahydrocannabinol in the rhesus monkey. *J Pharm Sci* **74**, 171-174 (1985).
811. Howlett, A. C. Cannabinoid inhibition of adenylate cyclase. Biochemistry of the response in neuroblastoma cell membranes. *Mol Pharmacol* **27**, 429-436 (1985).
812. Landauer, M. R., Balster, R. L. & Harris, L. S. Attenuation of cyclophosphamide-induced taste aversions in mice by prochlorperazine, delta 9-tetrahydrocannabinol, nabilone and levonantradol. *Pharmacol Biochem Behav* **23**, 259-266 (1985).
813. Citron, M. L. et al. Antiemetic efficacy of levonantradol compared to delta-9-

- tetrahydrocannabinol for chemotherapy-induced nausea and vomiting. *Cancer Treat Rep* **69**, 109-112 (1985).
814. Niiranen, A. & Mattson, K. A cross-over comparison of nabilone and prochlorperazine for emesis induced by cancer chemotherapy. *Am J Clin Oncol* **8**, 336-340 (1985).
815. Kotlarek-Haus, S., Orzechowska-Juzwenko, K. & Gabryś, K. [Vomiting accompanying cytostatic treatment, and its control]. *Pol Tyg Lek* **39**, 1555-1559 (1984).
816. Hiller, E. & Gerhartz, H. [New aspects in the antiemetic therapy of cytostatic drug-induced vomiting]. *Klin Wochenschr* **62**, 441-445 (1984).
817. Dow, G. J., Meyers, F. H., Stanton, W. & Devine, M. L. Serious reactions to oral delta-9-tetrahydrocannabinol in cancer chemotherapy patients. *Clin Pharm* **3**, 14 (1984).
818. Stoudemire, A., Cotanch, P. & Laszlo, J. Recent advances in the pharmacologic and behavioral management of chemotherapy-induced emesis. *Arch Intern Med* **144**, 1029-1033 (1984).
819. Fiore, J. J. & Gralla, R. J. Pharmacologic treatment of chemotherapy-induced nausea and vomiting. *Cancer Invest* **2**, 351-361 (1984).
820. Niamatali, C., Fallon, S. D. & Egan, E. L. Nabilone in the management of prochlorperazine resistant cancer chemotherapy induced emesis. *Ir Med J* **77**, 276-277 (1984).
821. Nabilone and high-dose metoclopramide: anti-emetics for cancer chemotherapy. *Drug Ther Bull* **22**, 9-11 (1984).
822. Frytak, S., Moertel, C. G. & Rubin, J. Metabolic studies of delta-9-tetrahydrocannabinol in cancer patients. *Cancer Treat Rep* **68**, 1427-1431 (1984).
823. Howlett, A. C. Inhibition of neuroblastoma adenylate cyclase by cannabinoid and nantradol compounds. *Life Sci* **35**, 1803-1810 (1984).
824. Green, L. G., Stein, J. L. & Stein, G. S. Influence of delta 9-tetrahydrocannabinol on expression of histone and ribosomal genes in normal and transformed human cells. *Biochem Pharmacol* **33**, 1033-1040 (1984).
825. Dvilansky, A., Zolotov, Z., Herzliker, B. & Nathan, I. Effects of ethanol, CBD and delta 'THC on proliferation of K-562 cells. *Int J Tissue React* **6**, 409-412 (1984).
826. Stein, G. S. & Stein, J. L. Effects of cannabinoids on gene expression. *NIDA Res Monogr* **44**, 5-24 (1984).
827. Kaplan, N. C. Dichloroethyl carbamoyl ester of delta-9-tetrahydrocannabinol. Chemical synthesis and biological testing and evaluation as a potentially site-specific anti-tumor agent. *Sci Sin B* **27**, 1048-1058 (1984).
828. Eyre, H. J. & Ward, J. H. Control of cancer chemotherapy-induced nausea and vomiting. *Cancer* **54**, 2642-2648 (1984).
829. Howlett, A. C. & Fleming, R. M. Cannabinoid inhibition of adenylate cyclase. Pharmacology of the response in neuroblastoma cell membranes. *Mol Pharmacol* **26**, 532-538 (1984).
830. Gralla, R. J. et al. Antiemetic therapy: a review of recent studies and a report of a random assignment trial comparing metoclopramide with delta-9-tetrahydrocannabinol. *Cancer Treat Rep* **68**, 163-172 (1984).
831. Bakowski, M. T. Advances in anti-emetic therapy. *Cancer Treat Rev* **11**, 237-256

- (1984).
832. George, M., Pejovic, M. H., Thuaire, M., Kramar, A. & Wolff, J. P. [Randomized comparative trial of a new anti-emetic: nabilone, in cancer patients treated with cisplatin]. *Biomed Pharmacother* **37**, 24-27 (1983).
 833. Gez, E. et al. [A marihuana component for nausea and vomiting induced by chemo- and radiotherapy]. *Harefuah* **105**, 306-308 (1983).
 834. Brigden, M. L., Wilson, K. S. & Barnett, J. B. Rational Choice of Antiemetic Agents during Cancer Chemotherapy. *Can Fam Physician* **29**, 1682-1686 (1983).
 835. Laszlo, J. Nausea and vomiting as major complications of cancer chemotherapy. *Drugs* **25 Suppl 1**, 1-7 (1983).
 836. Carey, M. P., Burish, T. G. & Brenner, D. E. Delta-9-tetrahydrocannabinol in cancer chemotherapy: research problems and issues. *Ann Intern Med* **99**, 106-114 (1983).
 837. Treffert, D. A. & Joranson, D. E. delta 9-Tetrahydrocannabinol and therapeutic research legislation for cancer patients. *JAMA* **249**, 1469-1472 (1983).
 838. Hogan, P., Sharpe, M., Smedley, H. & Sikora, K. Cannabinoids and hCG levels in patients with testicular cancer. *Lancet* **2**, 1144 (1983).
 839. Ahmedzai, S., Carlyle, D. L., Calder, I. T. & Moran, F. Anti-emetic efficacy and toxicity of nabilone, a synthetic cannabinoid, in lung cancer chemotherapy. *Br J Cancer* **48**, 657-663 (1983).
 840. Green, L. G., Stein, J. L. & Stein, G. S. A decreased influence of cannabinoids on macromolecular biosynthesis and cell proliferation in human cells which metabolize polycyclic hydrocarbon carcinogens. *Anticancer Res* **3**, 211-217 (1983).
 841. Heim, M. E. [Cannabis and cannabinoids. Possibilities of their therapeutic use]. *Fortschr Med* **100**, 343-346 (1982).
 842. Cone, L. A., Greene, D. S. & Helm, N. A. Use of nabilone in the treatment of chemotherapy-induced vomiting in an outpatient setting. *Cancer Treat Rev* **9 Suppl B**, 63-70 (1982).
 843. Laszlo, J. Treatment of nausea and vomiting caused by cancer chemotherapy. *Cancer Treat Rev* **9 Suppl B**, 3-9 (1982).
 844. Stark, P. The pharmacologic profile of nabilone: a new antiemetic agent. *Cancer Treat Rev* **9 Suppl B**, 11-16 (1982).
 845. Tetrahydrocannabinol (THC) for cancer patients. A review of the National Cancer Institute program in Wisconsin. *Wis Med J* **81**, 24 (1982).
 846. Stark, P. Study design for the evaluation of the efficacy and safety of nabilone. *Cancer Treat Rev* **9 Suppl B**, 35-37 (1982).
 847. Lemberger, L. et al. Pharmacokinetics, metabolism and drug-abuse potential of nabilone. *Cancer Treat Rev* **9 Suppl B**, 17-23 (1982).
 848. Einhorn, L. Nabilone: an effective antiemetic agent in patients receiving cancer chemotherapy. *Cancer Treat Rev* **9 Suppl B**, 55-61 (1982).
 849. Levitt, M. Nabilone vs. placebo in the treatment of chemotherapy-induced nausea and vomiting in cancer patients. *Cancer Treat Rev* **9 Suppl B**, 49-53 (1982).
 850. Stark, P. Nabilone and cancer chemotherapy. *Ann Intern Med* **96**, 122 (1982).
 851. Joss, R. A. et al. Levonantradol, a new antiemetic with a high rate of side-effects for the prevention of nausea and vomiting in patients receiving cancer chemotherapy. *Cancer Chemother Pharmacol* **9**, 61-64 (1982).

852. Wada, J. K. et al. Double-blind, randomized, crossover trial of nabilone vs. placebo in cancer chemotherapy. *Cancer Treat Rev* **9 Suppl B**, 39-44 (1982).
853. Ungerleider, J. T. et al. Cannabis and cancer chemotherapy: a comparison of oral delta-9-THC and prochlorperazine. *Cancer* **50**, 636-645 (1982).
854. Weddington, W. W., Miller, N. J. & Sweet, D. L. Anticipatory nausea and vomiting associated with cancer chemotherapy. *N Engl J Med* **307**, 825-826 (1982).
855. Jones, S. E., Durant, J. R., Greco, F. A. & Robertone, A. A multi-institutional Phase III study of nabilone vs. placebo in chemotherapy-induced nausea and vomiting. *Cancer Treat Rev* **9 Suppl B**, 45-48 (1982).
856. Johansson, R., Kilkku, P. & Groenroos, M. A double-blind, controlled trial of nabilone vs. prochlorperazine for refractory emesis induced by cancer chemotherapy. *Cancer Treat Rev* **9 Suppl B**, 25-33 (1982).
857. Dow, G. J. & Meyers, F. H. The California program for the investigational use of THC and marihuana in heterogeneous populations experiencing nausea and vomiting from anticancer therapy. *J Clin Pharmacol* **21**, 128S-132S (1981).
858. Scigliano, J. A. THC therapeutic research by independent and state-sponsored investigators: a historical review. *J Clin Pharmacol* **21**, 113S-121S (1981).
859. Procedure for obtaining THC for cancer patients. *JAMA* **246**, 15-19 (1981).
860. Aapro, M. S. Prevention of chemotherapy-induced nausea and vomiting in patients with cancer. *Ariz Med* **38**, 843-845 (1981).
861. Levitt, M. et al. Physiologic observations in a controlled clinical trial of the antiemetic effectiveness of 5, 10, and 15 mg of delta 9-tetrahydrocannabinol in cancer chemotherapy. Ophthalmologic implications. *J Clin Pharmacol* **21**, 103S-109S (1981).
862. Einhorn, L. H., Nagy, C., Furnas, B. & Williams, S. D. Nabilone: an effective antiemetic in patients receiving cancer chemotherapy. *J Clin Pharmacol* **21**, 64S-69S (1981).
863. Montour, J. L., Dutz, W. & Harris, L. S. Modification of radiation carcinogenesis by marihuana. *Cancer* **47**, 1279-1285 (1981).
864. Abraham, D., Pina, K. R. & Davignon, J. P. Mechanism for national distribution of delta 9-tetrahydrocannabinol (NSC-134454). *J Clin Pharmacol* **21**, 122S-127S (1981).
865. Gunby, P. Many cancer patients receiving THC as antiemetic. *JAMA* **245**, 1515, 1518 (1981).
866. Goldstein, M. S. & Williams, F. F. How we comply with federal guidelines on THC dispensing. *Pharm Times* **47**, 32-36 (1981).
867. Anderson, P. O. & McGuire, G. G. Delta-9-tetrahydrocannabinol as an antiemetic. *Am J Hosp Pharm* **38**, 639-646 (1981).
868. Poster, D. S., Penta, J. S., Bruno, S. & Macdonald, J. S. delta 9-tetrahydrocannabinol in clinical oncology. *JAMA* **245**, 2047-2051 (1981).
869. Sweet, D. L., Miller, N. J., Weddington, W., Senay, E. & Sushelsky, L. delta 9-Tetrahydrocannabinol as an antiemetic for patients receiving cancer chemotherapy. A pilot study. *J Clin Pharmacol* **21**, 70S-75S (1981).
870. Colorado physicians and THC. *Colo Med* **78**, 63 (1981).
871. Penta, J. S., Poster, D. S., Bruno, S. & Macdonald, J. S. Clinical trials with antiemetic agents in cancer patients receiving chemotherapy. *J Clin Pharmacol* **21**,

- 11S-22S (1981).
872. Benowitz, N. L. & Jones, R. T. Cardiovascular and metabolic considerations in prolonged cannabinoid administration in man. *J Clin Pharmacol* **21**, 214S-223S (1981).
873. Garb, S. Cannabinoids in the management of severe nausea and vomiting from cancer chemotherapy. Some additional considerations. *J Clin Pharmacol* **21**, 57S-59S (1981).
874. Orr, L. E. & McKernan, J. F. Antiemetic effect of delta 9-tetrahydrocannabinol in chemotherapy-associated nausea and emesis as compared to placebo and compazine. *J Clin Pharmacol* **21**, 76S-80S (1981).
875. Chang, A. E. et al. A prospective evaluation of delta-9-tetrahydrocannabinol as an antiemetic in patients receiving adriamycin and cytoxan chemotherapy. *Cancer* **47**, 1746-1751 (1981).
876. Cocchetto, D. M., Cook, L. F. & Cato, A. E. A critical review of the safety and antiemetic efficacy of delta-9-tetrahydrocannabinol. *Drug Intell Clin Pharm* **15**, 867-875 (1981).
877. Colls, B. M., Ferry, D. G., Gray, A. J., Harvey, V. J. & McQueen, E. G. The antiemetic activity of tetrahydrocannabinol versus metoclopramide and thiethylperazine in patients undergoing cancer chemotherapy. *N Z Med J* **91**, 449-451 (1980).
878. Earhart, R. H. & Buchanan-Davidson, D. J. Tetrahydrocannabinol as an antiemetic for cancer patients. *Wis Med J* **79**, 47-48 (1980).
879. Colon, P. G. Oral papilloma in marijuana users. *Quintessence Int Dent Dig* **11**, 75-80 (1980).
880. Cohen, S. Marijuana research findings: 1980. Therapeutic aspects. *NIDA Res Monogr* **31**, 199-221 (1980).
881. Winokur, S. H., Baker, J. J., Lokey, J. L. & Price, N. A. Marijuana for nausea and vomiting in cancer patients. *J Med Assoc Ga* **69**, 919-920 (1980).
882. Marihuana for nausea and vomiting due to cancer chemotherapy. *Med Lett Drugs Ther* **22**, 41-43 (1980).
883. Sallan, S. E. & Cronin, C. M. Is THC an effective antiemetic for cancer patients? Opinion 2. *CA Cancer J Clin* **30**, 283-285 (1980).
884. Frytak, S. Is THC an effective antiemetic for cancer patients? Opinion 1. *CA Cancer J Clin* **30**, 278-282 (1980).
885. Seipp, C. A., Chang, A. E., Shiling, D. J. & Rosenberg, S. A. In search of an effective antiemetic: a nursing staff participates in marijuana research. *Cancer Nurs* **3**, 271-276 (1980).
886. Levy, J. A. & Heppner, G. H. Immunosuppression by marihuana and its cannabinoid constituents. *J Immunopharmacol* **2**, 159-177 (1980).
887. FDA ponders wider distribution of THC. *JAMA* **244**, 754 (1980).
888. White, H. L. & Tansik, R. L. Effects of delta 9-tetrahydrocannabinol and cannabidiol on phospholipase and other enzymes regulating arachidonate metabolism. *Prostaglandins Med* **4**, 409-417 (1980).
889. Steele, N., Gralla, R. J., Braun, D. W. & Young, C. W. Double-blind comparison of the antiemetic effects of nabilone and prochlorperazine on chemotherapy-induced emesis. *Cancer Treat Rep* **64**, 219-224 (1980).

890. Davignon, J. P. Delta-9-tetrahydrocannabinol: comments on antiemetic trials. *Front Radiat Ther Oncol* **15**, 148-156 (1980).
891. Lucas, V. S. & Laszlo, J. delta 9-Tetrahydrocannabinol for refractory vomiting induced by cancer chemotherapy. *JAMA* **243**, 1241-1243 (1980).
892. Council on Scientific Affairs report I marijuana reexamined: pulmonary risks and therapeutic potentials. *J Tenn Med Assoc* **73**, 332-335 (1980).
893. Rose, M. Cannabis: a medical question. *Lancet* **1**, 703 (1980).
894. Colls, B. M. Cannabis and cancer chemotherapy. *Lancet* **1**, 1187-1188 (1980).
895. Sallan, S. E., Cronin, C., Zelen, M. & Zinberg, N. E. Antiemetics in patients receiving chemotherapy for cancer: a randomized comparison of delta-9-tetrahydrocannabinol and prochlorperazine. *N Engl J Med* **302**, 135-138 (1980).
896. Williams, C. J., Bolton, A., de Pemberton, R. & Whitehouse, J. M. Antiemetics for patients treated with antitumor chemotherapy. *Cancer Clin Trials* **3**, 363-367 (1980).
897. Orr, L. E., McKernan, J. F. & Bloome, B. Antiemetic effect of tetrahydrocannabinol. Compared with placebo and prochlorperazine in chemotherapy-associated nausea and emesis. *Arch Intern Med* **140**, 1431-1433 (1980).
898. A cannabis dilemma. *S Afr Med J* **57**, 847-848 (1980).
899. London, S. W., McCarthy, L. E. & Borison, H. L. Suppression of cancer chemotherapy-induced vomiting in the cat by nabilone, a synthetic cannabinoid. *Proc Soc Exp Biol Med* **160**, 437-440 (1979).
900. Herman, T. S. et al. Superiority of nabilone over prochlorperazine as an antiemetic in patients receiving cancer chemotherapy. *N Engl J Med* **300**, 1295-1297 (1979).
901. Desoize, B., Léger, C. & Nahas, G. Plasma membrane inhibition of macromolecular precursor transport by THC. *Biochem Pharmacol* **28**, 1113-1118 (1979).
902. Jarvik, M. E. Necessary risks. *N Engl J Med* **300**, 1330 (1979).
903. Andrysiak, T., Carroll, R. & Ungerleider, J. T. Marijuana for the oncology patient. *Am J Nurs* **79**, 1396-1398 (1979).
904. Carchman, R. A., End, D. W., Dewey, W. L. & Warner, W. Marijuana and opiate interactions with hormonal induced systems in cell culture. *Prog Clin Biol Res* **27**, 237-252 (1979).
905. Tucker, A. N. & Friedman, M. A. Effects of cannabinoids on L1210 murine leukemia. III. Inhibition of respiration. *Res Commun Chem Pathol Pharmacol* **23**, 327-332 (1979).
906. Jering, H. & Toro-Goyco, E. Effect of (-)-delta 9 tetrahydrocannabinol on nucleoside and amino acid uptake in Reuber-H-35 hepatoma cells. *Mol Pharmacol* **15**, 627-632 (1979).
907. Frytak, S. et al. Delta-9-tetrahydrocannabinol as an antiemetic for patients receiving cancer chemotherapy. A comparison with prochlorperazine and a placebo. *Ann Intern Med* **91**, 825-830 (1979).
908. Kluin-Neleman, J. C., Neleman, F. A., Meuwissen, O. J. & Maes, R. A. delta 9-Tetrahydrocannabinol (THC) as an antiemetic in patients treated with cancer chemotherapy; a double-blind cross-over trial against placebo. *Vet Hum Toxicol* **21**, 338-340 (1979).
909. Chang, A. E. et al. Delta-9-tetrahydrocannabinol as an antiemetic in cancer

- patients receiving high-dose methotrexate. A prospective, randomized evaluation. *Ann Intern Med* **91**, 819-824 (1979).
910. Bedell, S. E. Cannabis and cancer chemotherapy. *Ann Intern Med* **90**, 276 (1979).
911. Gyllys, J. A., Doran, K. M. & Buyniski, J. P. Antagonism of cisplatin induced emesis in the dog. *Res Commun Chem Pathol Pharmacol* **23**, 61-68 (1979).
912. Ekert, H., Waters, K. D., Jurk, I. H., Mobilia, J. & Loughnan, P. Amelioration of cancer chemotherapy-induced nausea and vomiting by delta-9-tetrahydrocannabinol. *Med J Aust* **2**, 657-659 (1979).
913. Mechoulam, R. & Carlini, E. A. Toward drugs derived from cannabis. *Naturwissenschaften* **65**, 174-179 (1978).
914. Bhargava, H. N. Potential therapeutic applications of naturally occurring and synthetic cannabinoids. *Gen Pharmacol* **9**, 195-213 (1978).
915. Toro-Goyco, E., Rodríguez, M. B. & Preston, A. M. On the action of delta 9-tetrahydrocannabinol as an inhibitor of sodium- and potassium-dependent adenosine triphosphatase. *Mol Pharmacol* **14**, 130-137 (1978).
916. Szepsenwol, J., Fletcher, J., Murison, G. L. & Toro-Goyco, E. Long term effects of delta-9-tetrahydrocannabinol in mice. *Adv Biosci* **22-23**, 359-370 (1978).
917. Jering, H. & Toro-Goyco, E. Effect of delta 9-tetrahydrocannabinol in nucleoside and amino acid uptake in Reuber H-35 hepatoma cells. *Adv Biosci* **22-23**, 161-169 (1978).
918. Staquet, M., Gantt, C. & Machin, D. Effect of a nitrogen analog of tetrahydrocannabinol on cancer pain. *Clin Pharmacol Ther* **23**, 397-401 (1978).
919. Cohen, S. Therapeutic aspects. *NIDA Res Monogr* 194-225 (1977).
920. Herman, T. S. et al. Nabilone: a potent antiemetic cannabinol with minimal euphoria. *Biomedicine* **27**, 331-334 (1977).
921. Friedman, M. A. In vivo effects of cannabinoids on macromolecular biosynthesis in Lewis lung carcinomas. *Cancer Biochem Biophys* **2**, 51-54 (1977).
922. Tucker, A. N. & Friedman, M. A. Effects of cannabinoids on L1210 murine leukemia. 1. Inhibition of DNA synthesis. *Res Commun Chem Pathol Pharmacol* **17**, 703-714 (1977).
923. End, D. W., Thoursen, K., Dewey, W. L. & Carchman, R. A. A comparative study of the disposition of (-)-delta 9-tetrahydrocannabinol in neuroblastoma and glioma cells in tissue culture: relation cellular impairment. *Mol Pharmacol* **13**, 864-871 (1977).
924. Carchman, R. A., Harris, L. S. & Munson, A. E. The inhibition of DNA synthesis by cannabinoids. *Cancer Res* **36**, 95-100 (1976).
925. Letter: Tetrahydrocannabinol and chemotherapy. *N Engl J Med* **294**, 168 (1976).
926. White, A. C., Munson, J. A., Munson, A. E. & Carchman, R. A. Effects of delta9-tetrahydrocannabinol in Lewis lung adenocarcinoma cells in tissue culture. *J Natl Cancer Inst* **56**, 655-658 (1976).
927. Kaymakcalan, S. & Türker, R. K. The evidence of the release of prostaglandin-like material from rabbit kidney and guinea-pig lung by (minus)-trans-delta9-tetrahydrocannabinol. *J Pharm Pharmacol* **27**, 564-568 (1975).
928. Noyes, R., Brunk, S. F., Avery, D. A. & Canter, A. C. The analgesic properties of delta-9-tetrahydrocannabinol and codeine. *Clin Pharmacol Ther* **18**, 84-89 (1975).
929. Editorial: Therapeutic possibilities in cannabinoids. *Lancet* **1**, 667-669 (1975).

930. Munson, A. E., Harris, L. S., Friedman, M. A., Dewey, W. L. & Carchman, R. A. Antineoplastic activity of cannabinoids. *J Natl Cancer Inst* **55**, 597-602 (1975).
931. Sallan, S. E., Zinberg, N. E. & Frei, E. Antiemetic effect of delta-9-tetrahydrocannabinol in patients receiving cancer chemotherapy. *N Engl J Med* **293**, 795-797 (1975).
932. Noyes, R., Brunk, S. F., Baram, D. A. & Canter, A. Analgesic effect of delta-9-tetrahydrocannabinol. *J Clin Pharmacol* **15**, 139-143 (1975).
933. Milner, G. Drug abuse, alcohol and marihuana problems: errors, costs and concepts. *Med J Aust* **2**, 285-290 (1973).
934. Price, P. J., Suk, W. A., Spahn, G. J. & Freeman, A. E. Transformation of Fischer rat embryo cells by the combined action of murine leukemia virus and (-)-trans-9-tetrahydrocannabinol. *Proc Soc Exp Biol Med* **140**, 454-456 (1972).