

## NOTAS

1. Polasa, K., B. Sesikaran, T. P. Krishna y K. Krishnaswamy. 1991. «Turmeric (*Curcuma longa*)-induced reduction in urinary mutagens». *Food and Chemical Toxicology* 29: 699-706.
2. Oppenheimer, A. 1937. «Turmeric (curcumin) in biliary diseases». *Lancet* 229: 619-621.
3. Esatbeyoglu, T., K. Ulbrich, C. Rehberg, S. Rohn y G. Rimbach. 2015. «Thermal stability, antioxidant, and anti-inflammatory activity of curcumin and its degradation product 4-vinyl guaiacol». *Food & Function* 6 (3): 887-893.
4. Borde, Vinod Uttamrao. 2011. «Effect of boiling and roasting on the antioxidants concentrations in extracts of fresh ginger (*Zingiber officinale*) and turmeric (*Curcuma longa*)». *International Journal of Ayurvedic and Herbal Medicine* 1: 2.
5. Shoba, G., D. Joy, T. Joseph, M. Majeed, R. Rajendran y P. S. Srinivas. 1998. «Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers». *Planta Medica* 64 (4): 353-356.
6. Lao, C. D., M. T. Ruffin, D. Normolle, D. D. Heath, S. I. Murray, J. M. Bailey, M. E. Boggs, J. Crowell, C. L. Rock y D. E. Brenner. 2006. «Dose escalation of una a curcuminoid formulation». *BMC Complementary and Alternative Medicine* 17 (6): 10.
7. Shin, H. S., H. J. See, S. Y. Jung, D. W. Choi, D. A. Kwon, M. J. Bae, K. S. Sung y D. H. Shon. 2015. «Turmeric (*Curcuma longa*) attenuates food allergy symptoms by regulating type 1/type 2 helper T cells (Th1/Th2) balance in a mouse model of food allergy». *Journal of Ethnopharmacology* 175: 21-29.
8. Kobayashi, T., S. Hashimoto y T. Horie. 1997. «Curcumin inhibition of Dermatophagoides farinea-induced interleukin-5 (IL-5) and granulocyte macrophage-colony stimulating factor (GM-CSF) production by lymphocytes from bronchial asthmatics». *Biochemical Pharmacology* 54 (7): 819-824.
9. Wu, S. y D. Xiao. 2016. «Effect of curcumin on nasal symptoms and airflow in patients with perennial allergic rhinitis». *Annals of Allergy, Asthma and Immunology* 117 (6): 697-702.
10. Baum, L., C. W. Lam, S. K. Cheung, T. Kwok, V. Lui, J. Tsoh, L. Lam, V. Leung, E. Hui, C. Ng, J. Woo, H. F. Chiu, W. B. Goggins, B. C. Zee, K. F. Cheng, C. Y. Fong, A. Wong, H. Mok, M. S. Chow, P. C. Ho, S. P. Ip, C. S. Ho, X. W. Yu, C. Y. Lai, M. H. Chan, S. Szeto, I. H. Chan y V. Mok. 2008. «Six-month randomized, placebo-controlled, double-blind, pilot clinical trial of curcumin in patients with Alzheimer disease». *Journal of Clinical*

*Psychopharmacology* 28 (1): 110-113.

11. Deodhar, S. D., R. Sethi y R. C. Srimal. 1980. «Preliminary study on antirheumatic activity of curcumin (diferuloyl methane)». *Indian Journal of Medical Research* 71: 632-634.
12. Chandran, B. y A. Goel. 2012. «A randomized, pilot study to assess the efficacy and safety of curcumin in patients with active rheumatoid arthritis». *Phytotherapy Research* 26 (11): 1719-1725.
13. Funk, J. L., J. N. Oyarzo, J. B. Frye, G. Chen, R. C. Lantz, S. D. Jolad, A. M. Solyom y B. N. Timmermann. 2006. «Turmeric extracts containing curcuminoids prevent experimental rheumatoid arthritis». *Journal of Natural Products* 69 (3): 351-355.
14. Chin, K. Y. 2016. «The spice for joint inflammation: anti-inflammatory role of curcumin in treating osteoarthritis». *Journal of Craniofacial Surgery* 10: 3029-3042.
15. Belcaro, G., M. R. Cesarone, M. Dugall, L. Pellegrini, A. Ledda, M. G. Grossi, S. Togni y G. Appendino. 2010. «Product-evaluation registry of Meriva, a curcumin-phosphatidylcholine complex, for the complementary management of osteoarthritis». *Panminerva Medica* 52 (2 Suppl 1): 55-62.
16. Belcaro, G., M. R. Cesarone, M. Dugall, L. Pellegrini, A. Ledda, M. G. Grossi MG, S. Togni y G. Appendino. 2010. «Efficacy and safety of Meriva, a curcumin-phosphatidylcholine complex, during extended administration in osteoarthritis patients». *Alternative Medicine Review* 15 (4): 337-344.
17. Lev-Ari, S., L. Strier, D. Kazanov, O. Elkayam, D. Lichtenberg, D. Caspi y N. Arber. 2006. «Curcumin synergistically potentiates the growth-inhibitory and pro-apoptotic effects of celecoxib in osteoarthritis synovial adherent cells». *Rheumatology (Oxford)* 45 (2): 171-177.
18. Kuptniratsaikul, V., P. Dajpratham, W. Taechaarpornkul, M. Buntragulpoontawee, P. Lukkanapichonchut, C. Chootip, J. Saengsuwan, K. Tantayakom y S. Laongpech. 2014. «Efficacy and safety of *Curcuma domestica* extracts compared with ibuprofen in patients with knee osteoarthritis: a multicenter study». *Clinical Interventions in Aging* 9: 451-458.
19. Ram, A., M. Das y B. Ghosh. 2003. «Curcumin attenuates allergen-induced airway hyperresponsiveness in sensitized guinea pigs». *Biological and Pharmaceutical Bulletin* 26 (7): 1021-4.
20. Ramírez-Tortosa, M. C., M. D. Mesa, M. C. Aguilera, J. L. Quiles, L. Baró, C. L. Ramirez-Tortosa, E. Martinez-Victoria y A. Gil. 1999. «Oral administration of a turmeric extract inhibits LDL oxidation and has hypocholesterolemic effects in rabbits with experimental atherosclerosis». *Atherosclerosis* 147 (2): 371-378.
21. Olszanecki, R., J. Jawień, M. Gajda, L. Mateuszuk, A. Gebaska, M. Korabiowska, S. Chłopicki y R. Korbut. 2005. «Effect of curcumin on

- atherosclerosis in apoE/LDLR-double knockout mice». *Journal of Physiology and Pharmacology* 56 (4): 627-35.
22. Obata, K., T. Kojima, T. Masaki, T. Okabayashi, S. Yokota, S. Hirakawa, K. Nomura, A. Takasawa, M. Murata, S. Tanaka, J. Fuchimoto, N. Fujii, H. Tsutsumi, T. Himi y N. Sawada. 2013. «Curcumin prevents replication of respiratory syncytial virus and the epithelial responses to it in human nasal epithelial cells». *PLoS One* 8 (9): e70225.
  23. Ghaffari, S. B., M. H. Sarrafzadeh, Z. Fakhroueian, S. Shahriari y M. R. Khorramizadeh. 2017. «Functionalization of ZnO nanoparticles by 3-mercaptopropionic acid for aqueous curcumin delivery: Synthesis, characterization, and anticancer assessment». *Materials Science and Engineering C: Materials for Biological Applications* 79: 465-472.
  24. Lelli, D., C. Pedone y A. Sahebkar. 2017. «Curcumin and treatment of melanoma: The potential role of microRNAs». *Biomedical Pharmacotherapy* 88: 832-834.
  25. Jose, A., S. Labala, K. M. Ninave, S. K. Gade y V. V. K. Venuganti. 2017. «Effective skin cancer treatment by topical co-delivery of curcumin and STAT3 siRNA using cationic liposomes». *AAPS PharmSciTech* 19 (1): 166-175.
  26. Cao, H., H. Yu, Y. Feng, L. Chen y F. Liang. 2017. «Curcumin inhibits prostate cancer by targeting PGK1 in the FOXD3/miR-143 axis». *Cancer Chemotherapy Pharmacology* 79 (5): 985-994.
  27. Thomas, R., M. Williams, H. Sharma, A. Chaudry y P. Bellamy. 2014. «A double-blind, placebo-controlled randomised trial evaluating the effect of a polyphenol-rich whole food supplement on PSA progression in men with prostate cancer-the U.K. NCRN Pomi-T study». *Prostate Cancer and Prostatic Disease* 17 (2): 180-186.
  28. Liu, Y., Y. M. Wu, y P. Y. Zhang. 2015. «Protective effects of curcumin and quercetin during benzo(a)pyrene induced lung carcinogenesis in mice». *European Review for Medical and Pharmacological Sciences* 19: 1736-1743.
  29. Neelofar, K., S. Shreaz, B. Rimple, S. Muralidhar, M. Nikhat y L. A. Khan. 2011. «Curcumin as a promising anticandidal of clinical interest». *Canadian Journal of Microbiology* 57 (3): 204-210.
  30. Suryanarayana, P., M. Saraswat, T. Mrudula, T. P. Krishna, K. Krishnaswamy y G. B. Reddy. 2005. «Curcumin and turmeric delay streptozotocin-induced diabetic cataract in rats». *Investigative Ophthalmology and Visual Science* 46 (6): 2092-2099.
  31. Oppenheimer, «Turmeric (curcumin) in biliary diseases».
  32. Pashine, L., J. V. Singh, A. K. Vaish, S. K. Ojha y A. A. Mahdi. 2012. «Effect of turmeric (*Curcuma longa*) on overweight hyperlipidemic subjects: Double blind study». *Indian Journal of Community Health* 24 (2): 113-117.

33. Alwi, I., T. Santoso, S. Suyono, B. Sutrisna, F. D. Suyatna, S. B. Kresno y S. Ernie. 2008. «The effect of curcumin on lipid level in patients with acute coronary syndrome». *Acta Medica Indonesia* 40 (4): 201-210.
34. Usharani, P., A. A. Mateen, M. U. Naidu, Y. S. Raju y N. Chandra. 2008. «Effect of NCB-02, atorvastatin and placebo on endothelial function, oxidative stress and inflammatory markers in patients with type 2 diabetes mellitus: a randomized, parallel-group, placebo-controlled, 8-week study». *Drugs In R&D* 9 (4): 243-250.
35. Wickenberg, J., S. L. Ingemansson y J. Hlebowicz. 2010. «Effects of *Curcuma longa* (turmeric) on postprandial plasma glucose and insulin in healthy subjects». *Nutrition Journal* 9: 43.
36. Chuengsamarn, S., S. Rattanamongkolgul, R. Luechapudiporn, C. Phisalaphong y S. Jirawatnotai. 2012. «Curcumin extract for prevention of type 2 diabetes». *Diabetes Care* 35 (11): 2121-2127.
37. Srinivasan, M. 1972. «Effect of curcumin on blood sugar as seen in a diabetic subject». *Indian Journal of Medical Science* 26 (4): 269-270.
38. Nishiyama, T., T. Mae, H. Kishida, M. Tsukagawa, Y. Mimaki, M. Kuroda, Y. Sashida, K. Takahashi, T. Kawada, K. Nakagawa y M. Kitahara. 2005. «Curcuminoids and sesquiterpenoids in turmeric (*Curcuma longa* L.) suppress an increase in blood glucose level in type 2 diabetic KK-Ay mice». *Journal of Agriculture and Food Chemistry* 53 (4): 959-963.
39. Usharani, P. *et al.*, «Effect of NCB-02, atorvastatin and placebo on endothelial function, oxidative stress and inflammatory markers in patients with type 2 diabetes mellitus».
40. Kuhad, A. y K. Chopra. 2007. «Curcumin attenuates diabetic encephalopathy in rats: behavioral and biochemical evidences». *European Journal of Pharmacology* 576 (1-3): 34-42.
41. Holt, P. R., S. Katz y R. Kirshoff. 2005. «Curcumin therapy in inflammatory bowel disease: a pilot study». *Digestive Diseases and Sciences* 50 (11): 2191-2193.
42. Chongtham, A. y N. Agrawal. 2016. «Curcumin modulates cell death and is protective in Huntington's disease model». *Scientific Reports* 6: 18736.
43. Sandhir, R., A. Yadav, A. Mehrotra, A. Sunkaria, A. Singh y S. Sharma. 2014. «Curcumin nanoparticles attenuate neurochemical and neurobehavioral deficits in experimental model of Huntington's disease». *Neuromolecular Medicine* 16 (1): 106-118.
44. Singh, S., S. Jamwal y P. Kumar. 2015. «Piperine enhances the protective effect of curcumin against 3-NP induced neurotoxicity: Possible neurotransmitters modulation mechanism». *Neurochemical Research* 40 (8): 1758-1766.
45. Marwick, J. A., K. Ito, I. M. Adcock y P. A. Kirkham. 2007. «Oxidative stress and steroid resistance in asthma and COPD: pharmacological manipulation

of HDAC-2 as a therapeutic strategy». *Expert Opinion on Therapeutic Targets* 11 (6): 745-755.

46. Khajehdehi, P., M. Pakfetrat, K. Javidnia, F. Azad, L. Malekmakan, M. H. Nasab y G. Dehghanzadeh. 2011. «Oral supplementation of turmeric attenuates proteinuria, transforming growth factor-beta and interleukin-8 levels in patients with overt type 2 diabetic nephropathy: a randomized, double-blind and placebo-controlled study». *Scandinavian Journal of Urology and Nephrology* 45 (5): 365-370.
47. Smith, S. E., C. M. Man, P. K. Yip, E. Tang, A. G. Chapman y B. S. Meldrum. 1996. «Anticonvulsant effects of 7-nitroindazole in rodents with reflex epilepsy may result from L-arginine accumulation of a reduction in nitric oxide of L-citrulline formation». *British Journal of Pharmacology* 119: 165-173.
48. Sumanont, Y., Y. Murakami, M. Tohda, O. Vajragupta, H. Watanabe y K. Matsumoto. 2006. «Prevention of kainic acid-induced changes in nitric oxide level and neuronal cell damage in the rat hippocampus by manganese complexes of curcumin and diacetylcurcumin». *Life Science* 78 (16): 1884-1891.
49. Yun, D. G. y D. G. Lee. 2016. «Antibacterial activity of curcumin via apoptosis-like response in *Escherichia coli*». *Applied Microbiology and Biotechnology* 100 (12): 5505-5514.
50. Tyagi, P., M. Singh, H. Kumari, A. Kumari y K. Mukhopadhyay. 2015. «Bactericidal activity of curcumin I is associated with damaging of bacterial membrane». *PLoS One* 10 (3): e0121313.
51. Tourkina, E., P. Gooz, J. C. Oates, A. Ludwicka-Bradley, R. M. Silver y S. Hoffman. 2004. «Curcumin-induced apoptosis in scleroderma lung fibroblasts: role of protein kinase [C] epsilon». *American Journal of Respiratory Cell and Molecular Biology* 31 (1): 28-35.
52. Natarajan, C. y J. J. Bright. 2002. «Curcumin inhibits experimental allergic encephalomyelitis by blocking IL-12 signaling through Janus kinase-STAT pathway in T lymphocytes». *Journal of Immunology* 168 (12): 6506-6513.
53. Bishnoi, M., K. Chopra y S. K. Kulkarni. 2008. «Protective effect of curcumin, the active principle of turmeric (*Curcuma longa*) in haloperidol-induced orofacial dyskinesia and associated behavioural, biochemical and neurochemical changes in rat brain». *Pharmacological Biochemistry and Behavior* 88 (4): 511-522.
54. Teow, S. Y. y S. A. Ali. 2017. «Altered antibacterial activity of curcumin in the presence of serum albumin, plasma and whole blood». *Pakistan Journal of Pharmaceutical Science* 30 (2): 449-457.
55. Narayanan, A., K. Kehn-Hall, S. Senina, L. Lundberg, R. Van Duyne, I. Guendel, R. Das, A. Baer, L. Bethel, M. Turell, A. L. Hartman, B. Das, C. Bailey y F. Kashanchi. 2012. «Curcumin inhibits Rift Valley fever virus replication in human cells». *Journal of Biological Chemistry* 287 (40):

33198-33214.

56. Waghmare, P. F., A. U. Chaudhari, V. M. Karhadkar y A. S. Jamkhande. 2011. «Comparative evaluation of turmeric and chlorhexidine gluconate mouthwash in prevention of plaque formation and gingivitis: a clinical and microbiological study». *Journal of Contemporary Dental Practice* 12 (4): 221-224.
57. *PDR for Herbal Medicines*, 2.<sup>a</sup> edición. 2000. Montvale, Nueva Jersey: Medical Economics Company. Página 776.
58. Kim, H. J., H. S. Yoo, J. C. Kim, C. S. Park, M. S. Choi, M. Kim, H. Choi, J. S. Min, Y. S. Kim, S. W. Yoon y J. K. Ahn. 2009. «Antiviral effect of *Curcuma longa* Linn extract against hepatitis B virus replication». *Journal of Ethnopharmacology* 124 (2): 189-196.
59. Kim, K., K. H. Kim, H. Y. Kim, H. K. Cho, N. Sakamoto y J. Cheong. 2010. «Curcumin inhibits hepatitis C virus replication via suppressing the Akt-SREBP-1 pathway». *FEBS Letters* 584 (4): 707-712.
60. Centers for Disease Control and Prevention. «Genital Herpes—CDC Fact Sheet». Consultado el 13 de septiembre de 2017. <https://www.cdc.gov/std/herpes/herpes-feb-2017.pdf>.
61. Bourne, K. Z., N. Bourne, S. F. Reising y L. R. Stanberry. 1999. «Plant products as topical microbicide candidates: assessment of *in vitro* and *in vivo* activity against herpes simplex virus type 2». *Antiviral Research* 42 (3): 219-226.
62. Akyuz, S., F. Turan, L. Gurbuzler, A. Arici, E. Sogut y O. Ozkan. 2016. «The anti-inflammatory and antioxidant effects of curcumin in middle ear infection». *Journal of Craniofacial Surgery* 27 (5): e494-497.
63. Wang, J., X. Zhou, W. Li, X. Deng, Y. Deng y X. Niu. 2016. «Curcumin protects mice from *Staphylococcus aureus* pneumonia by interfering with the self-assembly process of  $\alpha$ -hemolysin». *Scientific Reports* 6: 28254.
64. Tyagi, P. *et al.*, «Bactericidal activity of curcumin I is associated with damaging of bacterial membrane».
65. Zhou, X., B. Zhang, Y. Cui, S. Chen, Z. Teng, G. Lu, J. Wang y X. Deng. 2017. «Curcumin promotes the clearance of *Listeria monocytogenes* both *in vitro* and *in vivo* by reducing listeriolysin O oligomers». *Frontiers in Immunology* 8: 574.
66. Appendino, G., G. Belcaro, U. Cornelli, R. Luzzi, S. Togni, M. Dugall, M. R. Cesarone, B. Feragalli, E. Ippolito, B. M. Errichi, L. Pellegrini, A. Ledda, A. Ricci, P. Bavera, M. Hosoi, S. Stuard, M. Corsi, S. Errichi y G. Gizzi. 2011. «Potential role of curcumin phytosome (Meriva) in controlling the evolution of diabetic microangiopathy. A pilot study». *Panminerva Medica* 53 (3 Suppl 1): 43-49.
67. Farhangkhoe, H., Z. A. Khan, S. Chen y S. Chakrabarti. 2006. «Differential effects of curcumin on vasoactive factors in the diabetic rat heart».

*Nutrition and Metabolism* (Londres) 3: 27.

68. Feng, B., S. Chen, J. Chiu, B. George y S. Chakrabarti. 2008. «Regulation of cardiomyocyte hypertrophy in diabetes at the transcriptional level». *American Journal of Physiology-Endocrinology and Metabolism* 294 (6): E1119-1126.
69. Khajehdehi, P., B. Zanjanejad, E. Aflaki, M. Nazarinia, F. Azad, L. Malekmakan L. y G. R. Dehghanzadeh. 2012. «Oral supplementation of turmeric decreases proteinuria, hematuria, and systolic blood pressure in patients suffering from relapsing or refractory lupus nephritis: a randomized and placebo-controlled study». *Journal of Renal Nutrition* 22 (1): 50-57.
70. Mishra, K., A. P. Dash, B. K. Swain y N. Dey. 2009. «Anti-malarial activities of *Andrographis paniculata* and *Hedyotis corymbosa* extracts and their combination with curcumin». *Malaria Journal* 8: 26.
71. Zbarsky, V., K. P. Datla, S. Parkar, D. K. Rai, O. I. Aruoma y D. T. Dexter. 2005. «Neuroprotective properties of the natural phenolic antioxidants curcumin and naringenin but not quercetin and fisetin in a 6-OHDA model of Parkinson's disease». *Free Radical Research* 39 (10): 1119-1125.
72. Izui, S., S. Sekine, K. Maeda, M. Kuboniwa, A. Takada, A. Amano y H. Nagata. 2016. «Antibacterial activity of curcumin against periodontopathic bacteria». *Journal of Periodontology* 87 (1): 83-90.
73. Cruz-Correa, M., D. A. Shoskes, P. Sanchez, R. Zhao, L. M. Hyland, S. D. Wexner y F. M. Giardiello. 2006. «Combination treatment with curcumin and quercetin of adenomas in familial adenomatous polyposis». *Clinical Gastroenterology and Hepatology* 4 (8): 1035-1038.
74. Holt, P. R., S. Katz y R. Kirshoff. 2005. «Curcumin therapy in inflammatory bowel disease: a pilot study». *Digestive Diseases and Sciences* 50 (11): 2191-2193.
75. Hanai, H., T. Iida, K. Takeuchi, F. Watanabe, Y. Maruyama, A. Andoh, T. Tsujikawa, Y. Fujiyama, K. Mitsuyama, M. Sata, M. Yamada, Y. Iwaoka, K. Kanke, H. Hiraishi, K. Hirayama, H. Arai, S. Yoshii, M. Uchijima, T. Nagata y Y. Koide. 2006. «Curcumin maintenance therapy for ulcerative colitis: randomized, multicenter, double-blind, placebo-controlled trial». *Clinical Gastroenterology and Hepatology* 4 (12): 1502-1506.
76. Kowluru, R. A. y M. Kanwar. 2007. «Effects of curcumin on retinal oxidative stress and inflammation in diabetes». *Nutrition and Metabolism* (Londres) 4: 8.
77. Barthelemy, S., L. Vergnes, M. Moynier, D. Guyot, S. Labidalle y E. Bahraoui. 1998. «Curcumin and curcumin derivatives inhibit Tat-mediated transactivation of type 1 human immunodeficiency virus long terminal repeat». *Research in Virology* 149 (1): 43-52.
78. Vajragupta, O., P. Boonchoong, G. M. Morris y A. J. Olson. 2005. «Active

- site binding modes of curcumin in HIV-1 protease and integrase». *Bioorganic & Medicinal Chemistry Letters* 15 (14): 3364-3368.
79. Mazumder, A., K. Raghavan, J. Weinstein, K. W. Kohn e Y. Pommier. 1995. «Inhibition of human immunodeficiency virus type-1 integrase by curcumin». *Biochemical Pharmacology* 49 (8): 1165-1170.
  80. Balasubramanyam, K., R. A. Varier, M. Altaf, V. Swaminathan, N. B. Siddappa, U. Ranga y T. K. Kundu. 2004. «Curcumin, a novel p300/CREB-binding protein-specific inhibitor of acetyltransferase, repress the acetylation of histone/nonhistone proteins and histone acetyltransferase-dependent chromatin transcription». *Journal of Biological Chemistry* 279 (49): 51163-51171.
  81. Prucksunand, C., B. Indrasukhsri, M. Leethochawalit y K. Hungspreugs. 2001. «Phase II clinical trial on effect of the long turmeric (*Curcuma longa linn*) on healing of peptic ulcer». *Southeast Asian Journal of Tropical Medicine and Public Health* 32 (1): 208-215.
  82. Kositchaiwat, C., S. Kositchaiwat y J. Havanondha. 1993. «*Curcuma longa linn* in the treatment of gastric ulcer comparison to liquid antacid: a controlled clinical trial». *Journal of the Medical Association of Thailand* 76 (11): 601-605.
  83. Centers for Disease Control and Prevention. «Genital HPV Infection—CDC Fact Sheet». Consultado el 14 de septiembre de 2017. <https://www.cdc.gov/std/hpv/HPV-FS-July-2017.pdf>.
  84. Basu, P., S. Dutta, R. Begum, S. Mittal, P. D. Dutta, A. C. Bharti, C. K. Panda, J. Biswas, B. Dey, G. P. Talwar y B. C. Das. 2013. «Clearance of cervical human papillomavirus infection by topical application of curcumin and curcumin containing polyherbal cream: a phase II randomized controlled study». *Asian Pacific Journal of Cancer Prevention* 14 (10): 5753-5759.
  85. Divya, C. S. y M. R. Pillai. 2006. «Antitumor action of curcumin in human papillomavirus associated cells involves downregulation of viral oncogenes, prevention of NFkB and AP-1 translocation, and modulation of apoptosis». *Molecular Carcinogenesis* 45 (5): 320-332.
  86. Nicol, L. M., D. S. Rowlands, R. Fazakerly y J. Kellett. 2015. «Curcumin supplementation likely attenuates delayed onset muscle soreness (DOMS)». *European Journal of Applied Physiology* 115 (8): 1769-1777.
  87. Lopresti, A. L. y P. D. Drummond. 2017. «Efficacy of curcumin, and a saffron/curcumin combination for the treatment of major depression: A randomised, double-blind, placebo-controlled study». *Journal of Affective Disorder* 207: 188-196.
  88. Noorafshan, A., M. Vafabin, S. Karbalay-Doust y R. Asadi-Golshan. 2017. «Efficacy of curcumin in the modulation of anxiety provoked by sulfite, a food preservative, in rats». *Preventative Nutrition and Food Science* 22 (2): 144-148.



89. Wu, A., E. E. Noble, E. Tyagi, Z. Ying, Y. Zhuang y F. Gomez-Pinilla. 2015. «Curcumin boosts DHA in the brain: Implications for the prevention of anxiety disorders». *Biochimica et Biophysica Acta* 1852 (5): 951-961.
90. Srivastava, R., V. Puri, R. C. Srimal y B. N. Dhawan. 1986. «Effect of curcumin on platelet aggregation and vascular prostacyclin synthesis». *Arzneimittelforschung* 36 (4): 715-717.
91. Xu, Y., B. S. Ku, H. Y. Yao, Y. H. Lin, X. Ma, Y. H. Zhang y X. J. Li. 2005. «The effects of curcumin on depressive-like behaviors in mice». *European Journal of Pharmacology* 518 (1): 40-46.
92. Lopresti, A. L. y P. D. Drummond. 2017. «Efficacy of curcumin, and a saffron/curcumin combination for the treatment of major depression: A randomised, double-blind, placebo-controlled study». *Journal of Affective Disorders* 207: 188-196.
93. Sanmukhani, J., V. Satodia, J. Trivedi, T. Patel, D. Tiwari, B. Panchal, A. Goel y C. B. Tripathi. 2014. «In vitro synergistic effect of curcumin in combination with third generation cephalosporins against bacteria associated with infectious diarrhea». *Biomedical Research International* 28 (4): 579-585.
94. Sasidharan, N. K., S. R. Sreekala, J. Jacob, B. Nambisan. 2014. «In vitro synergistic effect of curcumin in combination with third generation cephalosporins against bacteria associated with infectious diarrhea». *Biomedical Research International* 2014: 561456.
95. Sharma S., S. K. Kulkarni, J. N. Agrewala y K. Chopra. 2006. «Curcumin upplementation likely attenuates delayed onset muscle soreness (DOMS)». *European Journal of Applied Physiology* 536 (3): 256-261.
96. Srinivasan, «Effect of curcumin on blood sugar as seen in a diabetic subject».
97. Wickenberg, J., S. L. Ingemansson y J. Hlebowicz. 2010. «Effects of *Curcuma longa* (turmeric) on postprandial plasma glucose and insulin in healthy subjects». *Nutrition Journal* 9: 43.
98. Trinh, H. T., E. A. Bae, J. J. Lee y D. H. Kim. 2009. «Inhibitory effects of curcuminoids on passive cutaneous anaphylaxis reaction and scratching behavior in mice». *Archives of Pharmaceutical Research* 32 (12): 1783-1787.
99. Pakfetrat, M., F. Basiri, L. Malekmakan y J. Roozbeh. 2014. «Effects of turmeric on uremic pruritus in end stage renal disease patients: a double-blind randomized clinical trial». *Journal of Nephrology* 27 (2): 203-207.
100. Lee, H. S., E. J. Choi, K. S. Lee, H. R. Kim, B. R. Na, M. S. Kwon, G. S. Jeong, H. G. Choi, E. Y. Choi y C. D. Jun. 2016. «Oral administration of p-hydroxycinnamic acid attenuates atopic dermatitis by downregulating Th1 and Th1 cytokine production and keratinocyte activation». *PLoS One* 11 (3): e0150952.
101. Tyagi, P. *et al.*, «Bactericidal activity of curcumin I is associated with

damaging of bacterial membrane».

102. Biswas, J., D. Sinha, S. Mukherjee, S. Roy, M. Siddiqi y M. Roy. 2010. «Curcumin protects DNA damage in a chronically arsenic-exposed population of West Bengal». *Human and Experimental Toxicology* 29 (6): 513-524.
103. Tawatsin, A., S. D. Wratten, R. R. Scott, U. Thavara e Y. Techadamrongsin. 2001. «Repellency of volatile oils from plants against three mosquito vectors». *Journal of Vector Ecology* 26: 76-82.
104. Singha, S. y G. Chandra. 2011. «Mosquito larvicidal activity of some common spices and vegetable waste on *Culex quinquefasciatus* and *Anopheles stephensi*». *Asian Pacific Journal of Tropical Medicine* 4 (4): 288-293.
105. Rainey-Smith, S. R., B. M. Brown, H. R. Sohrabi, T. Shah, K. G. Goozee, V. B. Gupta y R. N. Martins. 2016. «Curcumin and cognition: a randomised, placebo-controlled, double-blind study of community-dwelling older adults». *British Journal of Nutrition* 115 (12): 2106-2113.
106. Wu, A., E. E. Noble, E. Tyagi, Z. Ying, Y. Zhuang y F. Gomez-Pinilla. 2015. «Curcumin boosts DHA in the brain: Implications for the prevention of anxiety disorders». *Biochimica Biophysica Acta* 1852 (5): 951-961.
107. Xu, Y. y L. Liu. 2017. «Curcumin alleviates macrophage activation and lung inflammation induced by influenza virus infection through inhibiting the NF- $\kappa$ B signaling pathway». *Influenza and Other Respiratory Viruses* 11 (5): 457-463.
108. Chen, T. Y., D. Y. Chen, H. W. Wen, J. L. Ou, S. S. Chiou, J. M. Chen, M. L. Wong y W. L. Hsu. 2013. «Inhibition of enveloped viruses infectivity by curcumin». *PLoS One* 8 (5): e62482.
109. Partoazar, A., N. Kianvash, M. H. Darvishi, S. Nasoohi, S. M. Rezayat y A. Bahador. 2016. «Ethosomal curcumin promoted wound healing and reduced bacterial flora in second degree burn in rat». *Drug Resistance* 66 (12): 660-665.
110. Sidhu, G. S., H. Mani, J. P. Gaddipati, A. K. Singh, P. Seth, K. K. Banaudha, G. K. Patnaik y R. K. Maheshwari. 1999. «Curcumin enhances wound healing in streptozotocin induced diabetic rats and genetically diabetic mice». *Wound Repair and Regeneration* 7 (5): 362-374.
111. Zandi, K., E. Ramedani, K. Mohammadi, S. Tajbakhsh, I. Deilami, Z. Rastian, M. Fouladvand, F. Yousefi y F. Farshadpour. 2010. «Evaluation of antiviral activities of curcumin derivatives against HSV-1 in Vero cell line». *Natural Product Communications* 5 (12): 1935-1938.
112. Sannia, A. 2010. «Phytotherapy with a mixture of dry extracts with hepatoprotective effects containing artichoke leaves in the management of functional dyspepsia symptoms». *Minerva Gastroenterologica e Dietologica* 56 (2): 93-99.
113. Thamlikitkul, V., N. Bunyapraphatsara, T. Dechatiwongse, S. Theerapong,

- C. Chantrakul, T. Thanaveerasuwan, S. Nimitnon, P. Boonroj, W. Punkrut, V. Gingsungneon *et al.* 1989. «Randomized double blind study of *Curcuma domestica* Val. for dyspepsia». *Journal of the Medical Association of Thailand* 72: 613-620.
114. Purohit, R. N., M. Bhatt, K. Purohit, J. Acharya, R. Kumar y R. Garg. 2017. «Clinical and radiological evaluation of turmeric powder as a pulpotomy medicament in primary teeth: An in vivo study». *International Journal of Clinical Pediatric Dentistry* 10 (1): 37-40.
115. Lal, B., A. K. Kapoor, O. P. Asthana, P. K. Agrawal, R. Prasad, P. Kumar y R. C. Srimal. 1999. «Efficacy of curcumin in the management of chronic anterior uveitis». *Phytotherapy Research* 13 (4): 318-322.
116. Sasaki, H., Y. Sunagawa, K. Takahashi, A. Imaizumi, H. Fukuda, T. Hashimoto, H. Wada, Y. Katanasaka, H. Kakeya, M. Fujita, K. Hasegawa y T. Morimoto. 2011. «Innovative preparation of curcumin for improved oral bioavailability». *Biological and Pharmaceutical Bulletin* 34 (5): 660-665.
117. Thomas, A. E., B. Varma, S. Kurup, R. Jose, M. L. Chandy, S. P. Kumar, M. S. Aravind y A. A. Ramadas. 2017. «Evaluation of efficacy of 1% curcuminoids as local application in management of oral lichen planus—interventional study». *Journal of Clinical Diagnostic Research* 11 (4): ZC89-ZC93.
118. Abdolahi, M., A. Tafakhori, M. Togha, A. A. Okhovat, F. Siassi, M. R. Eshraghian, M. Sedighiyan, M. Djalali, N. Mohammadzadeh Honarvar y M. Djalali. 2017. «The synergistic effects of  $\omega$ -3 fatty acids and nano-curcumin supplementation on tumor necrosis factor (TNF)- $\alpha$  gene expression and serum level in migraine patients». *Immunogenetics* 69 (6): 371-378.
119. Chen, M., D. N. Hu, Z. Pan, C. W. Lu, C. Y. Xue e I. Aass. 2010. «Curcumin protects against hyperosmoticity-induced IL-1beta elevation in human corneal epithelial cell via MAPK pathways». *Experimental Eye Research* 90 (3): 437-443.
120. Riva, A., S. Togni, L. Giacomelli, F. Franceschi, R. Eggenhoffner, B. Feragalli, G. Belcaro, M. Cacchio, H. Shu y M. Dugall. 2017. «Effects of a curcumin-based supplementation in asymptomatic subjects with low bone density: a preliminary 24-week supplement study». *European Review for Medical and Pharmacological Sciences* 21 (7): 1684-1689.
121. Bradford, P. G. 2013. «Curcumin and obesity». *Biofactors* 39 (1): 78-87.
122. Di Pierro, F., A. Bressan, D. Ranaldi, G. Rapacioli, L. Giacomelli y A. Bertuccioli. 2015. «Potential role of bioavailable curcumin in weight loss and omental adipose tissue decrease: preliminary data of a randomized, controlled trial in overweight people with metabolic syndrome. Preliminary study». *European Review for Medical and Pharmacology Sciences* 19 (21): 4195-4202.

123. Teich, T., J. A. Pivovarov, D. P. Porras, E. C. Dunford y M. C. Riddell. 2017. «Curcumin limits weight gain, adipose tissue growth, and glucose intolerance following the cessation of exercise and caloric restriction in rats». *Journal of Applied Physiology* (1985) 123 (6): 1625-1624.
124. Auysawasdi, N., S. Chuntranuluck, S. Phasomkusolsil y V. Keeratinijakal. 2016. «Improving the effectiveness of three essential oils against *Aedes aegypti* (Linn.) and *Anopheles dirus* (Peyton and Harrison)». *Parasitology Research* 115 (1): 99-106.
125. Ali, A., Y. H. Wang y I. A. Khan. 2015. «Larvicidal and biting deterrent activity of essential oils of *Curcuma longa*, ar-turmerone, and curcuminoids against *Aedes aegypti* and *Anopheles quadrimaculatus* (Culicidae: Diptera)». *Journal of Medical Entomology* 52 (5): 979-986.
126. Venkatesan, N. 1998. «Curcumin attenuation of acute adriamycin myocardial toxicity in rats». *British Journal of Pharmacology* 124 (3): 425-427.
127. ScienceDaily. «Method to Prevent Liver Damage Induced by Anti-Tuberculosis Treatment?». *World Journal of Gastroenterology*, 19 de septiembre de 2008. <https://www.sciencedaily.com/releases/2008/09/080919142358.htm>.
128. Adhvaryu, M. R., N. Reddy y B. C. Vakharia. 2008. «Prevention of hepatotoxicity due to anti tuberculosis treatment: a novel integrative approach». *World Journal of Gastroenterology* 14 (30): 4753-4762.
129. Abdel-Daim, M. M. y R. H. Abdou. 2015. «Protective effects of diallyl sulfide and curcumin separately against thallium-induced toxicity in rats». *The Cell Journal* 17: 379-388.
130. Reddy, A.C. y B. R. Lokesh. 1996. «Effect of curcumin and eugenol on iron-induced hepatic toxicity in rats». *Toxicology* 107: 39-45.
131. Rukkumani, R., K. Aruna, P. S. Varma y V. P. Menon. 2004. «Curcumin influences hepatic expression patterns of matrix metalloproteinases in liver toxicity». *Italian Journal of Biochemistry* 53: 61-66.
132. Carrion-Gutierrez, M., A. Ramirez-Bosca, V. Navarro-Lopez, A. Martinez-Andres, M. Asín-Llorca, A. Bernd y J. F. Horga de la Parte. 2015. «Effects of curcuma extract and visible light on adults with plaque psoriasis». *European Journal of Dermatology* 25 (3): 240-246.
133. Yang, X. X., C. M. Li y C. Z. Huang. 2016. «Curcumin modified silver nanoparticles for highly efficient inhibition of respiratory syncytial virus infection». *Nanoscale* 8 (5): 3040-3048.
134. Zuccotti, G. V., D. Trabattoni, M. Morelli, S. Borgonovo, L. Schneider y M. Clerici. 2009. «Immune modulation by lactoferrin and curcumin in children with recurrent respiratory infections». *Journal of Biological Regulators & Homeostatic Agents* 23 (2): 119-123.
135. Bundy, R., A. F. Walker, R. W. Middleton y J. Booth. 2004. «Turmeric

extract may improve irritable bowel syndrome symptomology in otherwise healthy adults: a pilot study». *Journal of Alternative and Complementary Medicine* 10 (6): 1015-1018.

136. Khayat, S., H. Fanaei, M. Kheirkhah, Z. B. Moghadam, A. Kasaeian y M. Javadimehr. 2015. «Curcumin attenuates severity of premenstrual syndrome symptoms: A randomized, double-blind, placebo-controlled trial». *Complementary Therapies in Medicine* 23 (3): 318-324.
137. Liu, C. H. y H. Y. Huang. 2013. «In vitro anti-propionibacterium activity by curcumin containing vesicle system». *Chemical and Pharmaceutical Bulletin* (Tokio) 61 (4): 419-425.
138. Rasheed, A., G. Avinash Kumar Reddy, S. Mohanalakshmi y C. K. Ashok Kumar. 2011. «Formulation and comparative evaluation of poly herbal antiacne face wash gels». *Pharmaceutical Biology* 49 (8): 771-774.
139. Srivilai, J., K. Rabgay, N. Khorana, N. Waranuch, N. Nuengchamnon, W. Wisuitiprot, T. Chuprajob, C. Changtam, A. Suksamrarn, W. Chavasiri, N. Sornkaew y K. Ingkaninan. 2017. «Anti-androgenic curcumin analogues as steroid 5-alpha reductase inhibitors». *Medicinal Chemistry Research* 26 (7): 1550-1556.
140. Partoazar, A. *et al.*, «Ethosomal curcumin promoted wound healing and reduced bacterial flora in second degree burn in rat».
141. Pakfetrat, M., F. Basiri, L. Malekmakan y J. Roozbeh. 2014. «Effects of turmeric on uremic pruritus in end stage renal disease patients: a double-blind randomized clinical trial». *Journal of Nephrology* 27 (2): 203-207.
142. Jia, S., P. Xie, S. J. Hong, R. Galiano, A. Singer, R. A. Clark y T. A. Mustoe. 2014. «Intravenous curcumin efficacy on healing and scar formation in rabbit ear wounds under nonischemic, ischemic, and ischemia-reperfusion conditions». *Wound Repair and Regeneration* 22 (6): 730-739.
143. Agrawal, R., e I. P. Kaur. 2010. «Inhibitory effect of encapsulated curcumin on ultraviolet-induced photoaging in mice». *Rejuvenation Research* 13 (4): 397-410.
144. Sikora, E., G. Scapagnini y M. Barbagallo. 2010. «Curcumin, inflammation, ageing and age-related diseases». *Immunity & Ageing* 20107: 1.
145. Partoazar, A. *et al.*, «Ethosomal curcumin promoted wound healing and reduced bacterial flora in second degree burn in rat».
146. Tu, C. X., M. Lin, S. S. Lu, X. Y. Qi, R. X. Zhang y Y. Y. Zhang. 2012. «Curcumin inhibits melanogenesis in human melanocytes». *Phytotherapy Research* 26 (2): 174-179.
147. Tawatsin, A. *et al.*, «Repellency of volatile oils from plants against three mosquito vectors».
148. Pakfetrat, M. *et al.*, «Effects of turmeric on uremic pruritus in end stage renal disease patients: a double-blind randomized clinical trial».
149. Panahi, Y., A. Sahebkar, M. Amiri, S. M. Davoudi, F. Beiraghdar, S. L. Hoseininejad y M. Kolivand. 2012. «Improvement of sulphur mustard-

- induced chronic pruritus, quality of life and antioxidant status by curcumin: results of a randomised, double-blind, placebo-controlled trial». *British Journal of Nutrition* 108 (7): 1272-1279.
150. Trinh, H. T. *et al.*, «Inhibitory effects of curcuminoids on passive cutaneous anaphylaxis reaction and scratching behavior in mice».
  151. Zaman, Shahiquz y Naveed Akhtar. 2013. «Effect of turmeric (*Curcuma longa Zingiberaceae*) extract cream on human skin sebum secretion». *Tropical Journal of Pharmaceutical Research* 12 (5).
  152. Heng, M. C. 2013. «Signaling pathways targeted by curcumin in acute and chronic injury: burns and photo-damaged skin». *International Journal of Dermatology* 52 (5): 531-543.
  153. Kianvash, N., A. Bahador, M. Pourhajibagher, H. Ghafari, V. Nikoui, S. M. Rezayat, A. R. Dehpour y A. Partoazar. 2017. «Evaluation of propylene glycol nanoliposomes containing curcumin on burn wound model in rat: biocompatibility, wound healing, and anti-bacterial effects». *Drug Delivery and Translational Research* 7 (5): 642-653.
  154. Cheppudira, B., M. Fowler, L. McGhee, A. Greer, A. Mares, L. Petz, D. Devore, D. R. Loyd y J. L. Clifford. 2013. «Curcumin: a novel therapeutic for burn pain and wound healing». *Expert Opinion on Investigational Drugs* 22 (10): 1295-1303.
  155. Partoazar, A. *et al.*, «Ethosomal curcumin promoted wound healing and reduced bacterial flora in second degree burn in rat».
  156. Asawanonda, P. y S. O. Klahan. 2010. «Tetrahydrocurcuminoid cream plus targeted narrowband UVB phototherapy for vitiligo: a preliminary randomized controlled study». *Photomedicine Laser Surgery* 28 (5): 679-684.