

References

REFERENCES

- Abou-Douh AM (2002) New Withanolides and other constituents from the fruit of *Withania somnifera*. Arch. Pharm. Pharm. Med. Chem. 6:267-276.
- Abraham A, Kirson I, Lavie D and Glotter E (1975) The Withanolides of *Withania somnifera* Chemotypes I and II. Phytochemistry. 14: 189-194.
- Akerele O (1985) The WHO Traditional Medicine Programme: Policy and Implementation. International Traditional Health Newsletter. Geneva, Switzerland: World Health Organizations. 1: 1.
- Ali M, Shuaib M and Ansari SH (1997) Withanolides from the Stem Bark of *Withania somnifera*. Phytochemistry. 44: 1163-1168.
- Bagavan A, Rahuman AA, Kamaraj C, Geetha K (2008) Larvicidal activity of saponin from *Achyranthes aspera* against *Aedes aegypti* and *Culex quinquefasciatus* (Diptera: Culicidae). Parasitol Res.103(1): 223-9.
- Baldi A, Singh D and Dixit VK (2008) Dual Elicitation for Improved Production of Withaferin A by Cell Suspension Cultures of *Withania somnifera*. Appl Biochem Biotechnol. DOI 10.1007/s12010-008-8231-2
- Bessalle R and Lavie D (1987) Semi-quantitative reversed-phase high-performance liquid chromatographic analysis of the ecotypes of *Withania somnifera* chemotype III. J. Chromatog; 389:195 -210.
- Bessalle R and Lavie D (1992) Withanolide C, A Chlorinated Withanolide from *Withania somnifera*. Phytochemistry. 31: 3648-3651.
- Bhattacharya A, Ghosal S and Bhattacharya SK (2001) Anti-oxidant effect of *Withania somnifera* glycowithanolides in chronic footshock stress-induced perturbations of oxidative free radical scavenging enzymes and lipid peroxidation in rat frontal cortex and striatum. Journal of Ethnopharmacology. 74: 1-6.

- Bhattacharya S. K., Kumar A. and Ghosal S. (1995) Effects of glycowithanolides from *Withania somnifera* on an animal model of Alzheimer's disease and perturbed central cholinergic markers of cognition in rats. *Phytother. Res.*9, 111-113.
- Bhattacharya SK, Geol RK, Kaur R and Ghosal S (1987) Anti-stress activity of Sitoindosides VII and VIII, New Acylsterylglucosides from *Withania somnifera*. *Phytotherapy Research*. 1(1): 32-37
- Bone K (1996) Clinical applications of Ayurvedic & Chinese herbs, monographs for the western. Herbal Practitioner Phytotherapy Press, Australia, 137
- Budhiraja and Sudhir S (1987) Review of biological delivity of withanolides. *Journal of Scientific and Industrial Research* ,46,488-491:
- Chapman L, Johns T and Mahunnah RLA (1997) Saponin- like *in vitro* characteristics of extracts from selected non-nutrient wild plant food additives used by Maasai in meat and milk based soups. *Ecol. Food Nutrit.*36, 1-22.
- Chaurasiya ND, Gupta VK and Sangwan RS (2007) Leaf Ontogenic Phase-Related Dynamics of Withaferin A and Withanone Biogenesis in Ashwagandha (*Withania somnifera* Dunal.) - An Important Medicinal Herb. 50(4): 508-513
- Choudhary MI, Nawaz SA, Haq Z, Lodhi MA, Ghayur MN, Jalil S, Riaz N, Yousuf S, Malik A, Gilani AH, Rahman A (2005) Withanolides, a new class of natural cholinesterase inhibitors with calcium antagonistic properties. *Biochem Biophys Res Comm* 334:276–287
- Ciddi V (2006) Withaferin A from Cell Cultures of *Withania somnifera*. *Indian Journal of Pharmaceutical Sciences*. 68: 490-492.
- Devmurari V P (2010) Scholars Research Library, Archives of Applied Science Research, 2 (1) 354-359.
- Fayez MBE and Saleh AA (1967) The Steroidal alkaloids of *Solanum Wright11 Benth* .*Phytochemistry*. 6. 433

- Furmanowa M, Kuls DG, Rszkowska J, Czrnocki Z, Obidoska G, Sadowska A, Rani R and Upadhyay SN (2001) In vitro Propagation of *Withania somnifera* and Isolation of Withanolides with Immunosuppressive Activity. *Planta Med.* 67: 146-149.
- Gafner S, Bergeron C, Mc Collom MM, Cooper LM, Mc Phail KL, Gerwick WH and Angerhofer CK (2004) Evaluation of the Efficiency of Three Different Solvent Systems to Extract Triterpene Saponins from Roots of *Panax quinquefolius* Using High-Performance Liquid Chromatography. *J. Agric. Food Chem.* 52 (6), 1546–1550
- Ganzera M, Choudhary MI and Khan IA (2003) Quantitative HPLC Analysis of Withanolides in *Withania somnifera*. *Fitoterapia.*74: 68-76.
- Ghosal S, Kaur R and Srivastava RS (1988) Sitoindosides IX and X, new glycowithanolides from *Withania somnifera*.*Ind. J. Natural Prod. (Sagar)* 4, 12-13.
- Ghosal S, Lal J, Srivastava R, Bhattacharya SK, Upadhyay SN, Jaiswal AK and Chattopadhyay U (1989) Immunomodulatory and CNS effects of sitoindosides IX and X, two new glycowithanolides from *Withania somnifera*.*Phytotherapy. Res.* 3, 201-206.
- Gupta VK, Mahajan S, Satti NK, Suri KA and Qazi GN (2008) (20R, 22R)-6a, 7a-Epoxy-5a,27-dihydroxy-1-oxowitha-2,24- dienolide in Leaves of *Withania somnifera*: Isolation and its Crystal Structure. *J Chem Crystallogr.* 38:769–773
- Hostettmann K and Marston A (1995) *Saponins*, Cambridge University Press 143-145.
- Ichikawa M, Ohta S, Komoto N, Ushijima M, Kodera Y, Hayama M, Shirota O, Sekita S and Kuroyanagi M (2009) Simultaneous determination of seven saponins in the roots of *Codonopsis lanceolata* by liquid chromatography–mass spectrometry. *J Nat Med.* 63:52–57
- Iuvone T, Esposito G, Capasso F and Izzo AA (2003) Induction of Nitric Oxide Synthase Expression by *Withania somnifera* in Macrophages. *Life Sciences.* 72: 1617-1625.

- Jamal SA, Qureshi S, Ali SN, Choudhary MI and Rahman AU (1995) Bioactivities and Structural studies of Withanolides from *Withania somnifera*. Chemistry of Heterocyclic Compounds. 31(9): 1047-1059.
- Jayaprakasam B and Nair MG (2003) Cyclooxygenase-2 enzyme inhibitory withanolides from *Withania somnifera* leaves. Tetrahedron. 59: 841-849.
- Jubie S, Jawahar N, Koshy R, Gowramma B, Murugan V and Suresh B (2008) Anti-arthritic activity of bark extracts of *Alangium salviifolium wang*. Rasayan J chem. 3 :433-436
- Kaileh M, Berghe WV, Heyerick A, Horion J, Piette J, Libert C, Keukeleire DD, Essawi T, Haegeman G (2007) Withaferin A strongly elicits IKK β hyperphosphorylation, concomitant with potent inhibition of its kinase activity. J Biol Chem 282: 4253–4264.
- Kandil, F.E, Sayed, N.H.E., Douh, A.M.A., Ishak, M.S and Mabry, T.J. (1994), Flavonol Glycosides and Phenolics from *Withania somnifera*, Phytochemistry, 37,1215-1216.
- Khajuria RK, Suri KA, Gupta RK, Satti NK, Amina M, Suri OP and Qazi GN (2004) Withanolides in Plant Extracts of *Withania somnifera* by HPLC-UV(DAD)-Positive Ion Electrospray Ionisation-Mass Spectrometry. J. Sep. Sci. 27: 541-546.
- Kim N and Park I (2001) Purification of Saponin compounds in *Bupleurum falcatum* by solvent partitioning and preparative LC. Biosci. Biotechnol. Biochem. 65 (7):1648-1651.
- Kirson I, Glotter E, Lavie D and Abraham A (1971) Constituents of *Withania somnifera* Dun Part XII -The withanolides of an Indian chemotype, J. Chem. Soc. C .2032–2044.
- Kitagawa, I. Saito, M., Taniyama, T. & Yoshikawa, M. (1985) Saponin and sapogenol. XXXIX. Structure of soyasaponin A1; bisdesmoside of soyasapogenol A, from soybean, the seeds of *Glycine max Merrill*. Chem. Pharm. Bull. (Tokyo) 33: 1069-1076.
- Kokate C K, Purohit A P, Gokhale S B (1996), Fourth edition “Pharmacognosy”, Pune.; 624-629.

- Krasteva I, Nikolova I, Danchev N and Nikolov S (2004) Phytochemical analysis of ethyl acetate extract from *Astragalus corniculatus* Bieb. and brain anti-hypoxic activity. *Acta Pharm.* 54: 151–156.
- Kuboyama T, Tohda C, Komatsu K (2006) Withanoside IV and its active metabolite sominone attenuate A β (25–35)-induced neurodegeneration. *Eur J Neurosci.* 23:1417–26.
- Kulkarni SK and Dhir A (2008) *Withania somnifera*: An Indian ginseng. *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 32: 1093–1105
- Liu FF (2000) Optimization of extraction conditions for active components in *Hypericum perforatum* using response surface methodology. *Journal of Agricultural and Food chemistry.* 48, 3364-3371.
- Liu J and Henkel T (2002) Traditional Chinese Medicine (TCM): Are polyphenols and saponins, the key ingredients triggering biological activities? *Current Medicinal Chemistry.* 9:1241-1253.
- Malinow MR, McLaughlin P, Stafford C, Livingston AL, Kohler G and Cheeke PR (1979) Comparative effects of alfalfa saponins and alfalfa fiber on cholesterol absorption in rats. *Am. J. Clin. Nutr.* 32: 1810-1812.
- Matsuda H, Murakami T, Kishi A and Yoshikawa M (2001) Structures of Withanolides I,II,III,IV,V,VI and VII, New Withanolide Glycosides, from the Roots of Indian *Withania somnifera* Dunal. And Inhibitory Activity for Tachyphylaxis to Clonidine in Isolated Guinea-Pig Ileum. *Bioorganic and Medicinal Chemistry.* 9: 1499-1507.
- Misra L, Lal P, Sangwan RS, Sangwan NS, Uniyal GC and Tuli R (2005) Unusually Sulfated and Oxygenated Steroids from *Withania somnifera*. *Phytochemistry.* 66: 2702-2707.
- Mohan R, Hammers HJ, Mohan PB, Zhan XH, Herbstritt CJ, Ruiz A, Zhang L, Hanson AD, Conner BP, Rougas J and Pribluda VS (2004) Withaferin A is a Potent Inhibitor of Angiogenesis. *Angiogenesis.* 7: 115-122.

- Monroe L (2003) Separating Ferrocene and Acetylferrocene by Adsorption Chromatography Dry Pack Method, Chemistry Lab Experiments CHEM 224 TECH 708: 1 – 11
- Mulabagal V, Subbaraju GV, Rao CV, Sivaramakrishna C, DeWitt DL, Holmes D, Sung B, Aggarwal BB, Tsay HS and Nair MG (2009) Withanolide Sulfoxide from Aswagandha Roots Inhibits Nuclear Transcription Factor-Kappa-B, Cyclooxygenase and Tumor Cell Proliferation. *Phytother.* 2736.
- Nittala SS, Velde VV, Frolow F and Lavie D (1981) Chlorinated Withanolides from *Withania somnifera* and *Acnistus breviflorus*. *Phytochemistry.* 20: 2547-2552.
- Owais M, Sharad KS, Shehbaz A and Saleemuddin M (2005) Antibacterial Efficacy of *Withania somnifera* (Ashwagandha) An Indigenous Medicinal Plant Against Experimental Murine Salmonellosis. *Phytomedicine.* 12: 229-235.
- Pawar RS and Bhutani KK (2006) New dammarane triterpenoidal saponins from *Bacopa monniera*. *Indian Journal of Chemistry.* 45B:1151-1154.
- Rahman AU, Abbas S, Shahwar DE, Jamal SA and Choudhary MI (1993) New Withanolides from *Withania* Spp. *Journal of Natural Products.* 56: 1000-1006.
- Rahman AU, Jamal SA, Choudhary MI and Asif E (1991) Two Withanolides from *Withania somnifera*. *Phytochemistry.* 30: 3824-3826.
- Ray AB and Gupta M (1994) Withasteroids, a growing group of naturally occurring steroidal lactones. *Progress in the Chemistry of Organic Natural Products.* 63: 1-106.
- Ray S and Jha S (2001) Production of Withaferin A in Shoot Cultures of *Withania somnifera*. *Planta Med.* 67: 432-436.
- Roja G, Heble MR and Sipahimalani AT (1991) Tissue cultures of *Withania somnifera*: morphogenesis and withanolide synthesis. *Phytotherapy Research.* 5: 185-187.

- Sangwan RS, Chaurasiya ND, Lal P, Misra L, Tuli R and Sangwan NS (2008) Withanolide A is inherently de novo biosynthesized in roots of the medicinal plant Ashwagandha (*Withania somnifera*). *Physiologia Plantarum*. 133: 278–287.
- Schilter B, Andersson C, Anton R, Constable A, Kleiner J, O'Brien J, Renwick A G, Korver O, Smit F and Walker R (2003) Guidance for the safety assessment of botanicals and botanical preparations for use in food and food supplements. *Food and Chemical Toxicology* 41:1625-1649.
- Schliebs R, Liebmann A, Bhattacharya SK, Kumar A, Ghosal S, Bigl V(1997) Systemic administration of defined extracts from *Withania somnifera* (Indian Ginseng) and Shilajit differentially affects cholinergic but not glutamatergic and GABAergic markers in rat brain. *Neurochem Int*. 30:181–90.
- Sethi PD, Thiagrajan, A.R and Subramanian.S(1970) Studies on the anti-inflammatory and anti-artritic activity of withaferin A .*Indian J.Pharmacol*.2:165.
- Sharada AC, Emerson Solomon F, and Umadevi P (1993) Toxicity of *Withania somnifera* root extracts in rats and mice *Int. J. Pharmacog*. 31:205-212.
- Sharada M, Ahuja A, Suri KA, Vij SP, Khajuria RK, Verma V and Kumar A (2007) Withanolide Production by In vitro Cultures of *Withania somnifera* and its Association with Differentiation. *Biologia Plantarum*. 51: 161-164.
- Sharada M, Ahuja A, Suri KA, Vij SP, Khajuria RK, Verma V and Kumar A (2007) Withanolide Production by In vitro Cultures of *Withania somnifera* and its Association with Differentiation. *Biologia Plantarum*. 51: 161-164.
- Singh S and Kumar S (1998) *Withania somnifera*. The Indian Ginseng Ashwagandha, Central Institute of Medicinal and Aromatic Plants Publisher, Lucknow, India.
- Su BN, Gu JQ, Kang YH, Park EJ, Pezzuto JM and Kinghorn AD (2004) Induction of the Phase II Enzyme, Quinone Reductase, by Withanolides and Norwithanolides from Solanaceous Species. *Mini-Reviews in Organic Chemistry*. 1: 115-123.

- Sundari TG, Sudhakaran S and Ganapathi A(1999) On the occurrence of an additional diploid taxon- *Withania obtusifolia* TACKH (Solanaceae)- from the natural population of South India. Feddes Repertorium. 110(5-6): 419-422.
- Tohda C, Kuboyama T and Komatsu K (2005) Search for Natural Products Related to Regeneration of the Neuronal Network. Neurosignals. 14: 34-45.
- Tswett M S (1905), *Tr .Protok . Varshav . Obshch . Estestvoispyt Otd . Biol .* **14**.
- Tyler E, Brady L R, and Roberts J E (1981) Alkaloids, in *Pharmacognosy*, Eighth edition, Leaf & Febiger, Philadelphia.209.
- Unger KK(1979) Porous silica, its properties and use as support in column liquid chromatography.Journal of Chromatography Library, **16**.
- Velde VV and Lavie D (1981) New Withanolides of Biogenetic Interest from *Withania somnifera*. Phytochemistry. 20: 1359-1364.
- Velde VV and Lavie D (1982) A ?¹⁶-Withanolide In *Withania somnifera* As A Possible Precursor For a-Side-Chains. Phytochemistry. 21: 731-733.
- Yamaguchi H, Matsuura H, Kasai R, Tanaka O, Satake M, Kohda H, Izumi H, Nuno M, Katsuki S, Isoda S, Shoji J, Goto K (1988) Analysis of saponins of wild Panax ginseng. Chem Pharm Bull 36:4177-4181.
- Yoo G, Lee SD, In M, Hwang WI, Lee KS, Lee ES, Kim DC, and Chae HJ (2009) An alternative sequential extraction process for maximal utilization of bioactive components from Korean red ginseng. *Korean J. Chem. Eng.* 26(4):1094-1097.
- Zhao J, Nakamura N, Hattori M, Kuboyama T, Tohda C and Komatsu K (2002) Withanolide Derivatives from the Roots of *Withania somnifera* and Their Neurite Outgrowth Activities. Chem. Pharm. Bull. 50: 760-765.