

### REFERENCES

- Abdallah, I.Z.A., Khattaba, H.A.H., and Heebab, G.H. (2011). Gastroprotective Effect of *Cordia myxa* L. Fruit Extract against Indomethacin-Induced Gastric Ulceration in Rats. *Life Science Journal*, 8, 433-445.
- Adinortey, M.B., Ansah, C., Galyuon, I., and Nyarko, A. (2013). *In Vivo* Models Used for Evaluation of Potential Anti-gastroduodenal Ulcer Agents. *Ulcers*, 2013, 1-12.
- Agarwal, R.B., and Rangari, V.D. (2003). Anti-inflammatory and anti-arthritis activity of lupeol and 19 -H lupeol isolated from *Strobilanthes callosus* and *Strobilanthes ixiocephala* roots. *Indian Journal of pharmacology*, 35, 384-387.
- Agarwal, V., and Malaviya, A.N. (2005). Cytokine network and its manipulation in rheumatoid arthritis. *Journal of Indian Rheumatology Association*, 13, 86-91.
- Aggarwal, A., Singla, S.K., and Tandon, C. (2014). Urolithiasis: Phytotherapy as an adjunct therapy. *Indian Journal of Experimental Biology*, 53, 103-111.
- Aggarwal, A., Singla, S.K., Gandhi, M., and Tandon, C. (2012). Preventive and curative effects of *Achyranthes aspera* Linn. extract in experimentally induced nephrolithiasis. *Indian Journal of Experimental Biology*, 50, 201-208.
- Aggarwal, A.A., Tandon, S., Singla, S.K., and Tandon, C. (2010). Reduction of oxalate-induced renal tubular epithelial (NRK-52E) cell injury and inhibition of calcium oxalate crystallisation in vitro by aqueous extract of *Achyranthes aspera*. *International Journal of Green Pharmacy*, 4, 159-164.
- Aggarwal, B.B., Prasad, S., Reuter, S., Kannappan, R., Yadev, V.R., Park, B., Kim, J.H., Gupta, S.C., Phromnoi, K., Sundaram, C., Prasad, S., Chaturvedi, M.M., and Sung, B. (2011). Identification of Novel Anti-inflammatory Agents from Ayurvedic Medicine for Prevention of Chronic Diseases: “Reverse Pharmacology” and “Bedside to Bench” Approach. *Current Drug Targets*, 12, 1595–1653.
- Akber, M., Seraj, S., Islam, F., Ferdausis, D., Ahmed, R., Nasrin, D., Nahar, N., Ahsan, S., Jamal, F., Rahmatullah, M. (2011). A Survey of Medicinal Plants Used by the Traditional Medicinal Practitioners of Khulna City, Bangladesh. *American-Eurasian Journal of Sustainable Agriculture*, 5, 177-195.
- Akhter, E., Bilal, S., and Haque, U. (2011). Prevalence of arthritis in India and Pakistan: a review. *Rheumatology International*, 31, 849-855.
- Alambayan, J., Vats, M., Sardana, S., and Sehrawat, R. (2015). Evaluation of antiulcer activity of roots of *Acacia catechu* Willd. (Mimosoideae). *Journal of Pharmacognosy and Phytochemistry*, 3, 79-84.

- Ali, A., Shyum, N.S.B., Gauhar, S., and Saeed, R. (2011). Anti-inflammatory and analgesic activity of ethanolic extract of *Sphearanthus indicus* Linn. *Pakistan Journal of Pharmaceutical Sciences*, 24, 405-409.
- Allen, A., Flemstrom, G., Garner, A., and Kivilaakso, E. (1993). Gastroduodenal mucosal protection. *Physiological Reviews*, 73, 823-857.
- Alok, S., Jain, S.K., Verma, A., Kumar, M., and Sabharwal, M. (2013). Pathophysiology of kidney, gallbladder, and urinary stones treatment with herbal and allopathic medicine: A review. *Asian Pacific Journal of Tropical Disease*, 3, 496-504.
- Alrashdi, A.S., Salama, S.M., Alkiyumi, S.S., Abdulla, M.A., Hadi, A.H.A., Abdelwahab, S.I., Taha, M.M., Hussiani, J., and Asykin, N. (2012). Mechanisms of Gastroprotective Effects of Ethanolic Leaf Extract of *Jasminum sambac* against HCl/Ethanol-Induced Gastric Mucosal Injury in Rats. *Evidence-Based Complementary and Alternative Medicine*, 2012, 1-1.
- Alvarez, J.L.P. (2009). Interleukin 6 in the physiopathology of rheumatoid arthritis. *Reumatologia Clinica*, 5, 34-39.
- Aly, A.M., Al-Alousi, L., and Salem, H.A. (2005). Licorice: a possible anti-inflammatory and anti-ulcer drug. *American Association of Pharmaceutical Scientist Pharm Sci Tech*, 6, E74-E82.
- Amresh, G., Singh, P.N., and Rao, C.V. (2007). Antinociceptive and antiarthritic activity of *Cissampelos pareira* roots. *Journal of Ethnopharmacology*, 111, 531-536.
- Anand, R., Patnaik, G.K., Kulshreshtha, D.K., and Dhawan, B.N. (1994). Activity of certain fractions of *Tribulus terrestris* fruits against experimentally induced urolithiasis in rats. *Indian Journal of Experimental Biology*, 32, 548-552.
- Anbu, J., Suman, S., Swaroop, K., Satheesh, R.K., Nithya, S., and Kannadhasan, R. (2011). Antiurolithiatic activity of ethyl acetate root extract of *Ichnocarpus frutescens* using ethylene glycol induced method in rats. *Journal of Pharmaceutical Science and Research*, 3, 1182-1189.
- Andersen, M.L., Santos, H.E.R., Seabra, M.D.L.V., Silva, A.A.B.D., and Tufik, S. (2004). Evaluation of acute and chronic treatments with *Harpagophytum procumbens* on Freund's adjuvant-induced arthritis in rats. *Journal of Ethnopharmacology*, 91, 325-330.
- Anonymous. (2002). Quality Control Methods for Medicinal Plant Materials (WHO), Geneva A.I.T.B.S. Publishers & Distributors (Regd.), Delhi, pp. 28-30.
- Anyasor, G.N., Onajobi, F., Osilesi, O., Adebawo, O., and Oboutor, E.M. (2014). Anti-inflammatory and antioxidant activities of *Costus afer* Ker Gawl. Hexane leaf fraction in arthritic rat models. *Journal of Ethnopharmacology*, 155, 543-551.

- Arawwawala, L.D.A.M., Arambewela, L.S.R., and Ratnasooriya, W.D. (2012). *Alpinia calcarata* Roscoe: A potent antiinflammatory agent. *Journal of Ethnopharmacology*, 139, 889- 892.
- Arnett, F.C., Edworthy, S.M., Bloch, D.A., McShane, D.J., Fries, J.F., Cooper, N.S., Healy, L.A., Kaplan, S.R., Liang, M.H., and Luthra, H.S. (1988). The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis and Rheumatology*, 31, 315-24.
- Arora, S.K., Itankar, P.R., Verma, P.R., Bharne, A.P., and Kokare, D.M. (2014). Involvement of NF B in the anti rheumatic potential of *Chenopodium album* L., aerial parts extracts. *Journal of Ethnopharmacology*, 155, 222–229.
- Arote, S.R., and Yeole, P.G. (2011). Screening of Methanolic Extract of *Pongamia Pinnata* Leaves for its Antiarthritic and Analgesic Activity. *Asian Journal of Biomedical and Pharmaceutical Sciences*, 1, 16-23.
- Arulmozhi, S., Mazumder, P.M., Sathiyarayanan, L., and Thakurdesai, P.A. (2012). Analgesic, anti-inflammatory and anti-ulcerogenic activities of fractions from *Alstonia scholaris*. *Pharmacologia*, 3, 132-137.
- Arulmozhi, S., Mazumder, P.M., Sathiyarayanan, L., Ashok, P. (2011). Anti-arthritic and antioxidant activity of leaves of *Alstonia scholaris* Linn. R. Br. *European Journal of Integrative Medicine*, 3, 83–90.
- Arzoz-Fabregas, M., Ibarz-Servio, L., Edo-Izquierdo, S., Dolade- Botias, M., Fernandez-Castro, J., and Roca-Antonio, J. (2013). Chronic stress and calcium oxalate stone disease: is it a potential recurrence risk factor? *Urolithiasis*, 41, 119-127.
- Asolkar, L.V., Kakkar, K.K., and Chakre, O.J. (1992). Second supplement to glossary of Indian medicinal plants with active principles. Part-I (A–K). *Publications and Information Directorate* (CSIR): New Delhi. pp. 111, 185, 285.
- Atmani, F., Silmani, Y., Mimouni, M., and Hacht, B. (2003). Prophylaxis of calcium oxalate stone by *Herniaria hirsute* on experimentally induced nephrolithiasis in rats. *British Journal of Urology International*, 92, 137.
- Atmani, F., Slimani, Y., Mimouni, M., Aziz, M., Hacht, B., and Ziyat, A. (2004). Effect of aqueous extract from *Herniaria hirsuta* L. on experimentally nephrolithiasis rats. *Journal of Ethnopharmacology*, 95, 87-93.
- Babu, N.P., Pandikumar, P., and Ignacimuthu, S. (2009). Anti-inflammatory activity of *Albizia lebeck* Benth., an ethnomedicinal plant, in acute and chronic animal models of inflammation. *Journal of Ethnopharmacology*, 125, 355-360.
- Baburao, b., Reddy, A.R.N., Kiran, G., Reddy, Y.N., and Mohan, G.K. (2010). Antioxidant, analgesic and anti-inflammatory activities of *Leucas cephalotes* (Roxb. ex Roth) spreng. *Brazilian Journal of Pharmaceutical Sciences*, 46, 525-5529.

- Babushetty, V., and Sultanpur, C.M. (2012). Evaluation of Anti-Arthritis Activity of *Asystasia dalzelliana* Leaves. *International Journal of Pharmaceutical & Biological Archives*, 3, 377-382.
- Baccou, J.C., Lambert, F., and Sauvaire, Y. (1977). Spectrophotometric method for the determination of total steroidal sapogenin. *Analyst*, 102, 458-65.
- Bachhav, R.S., Gulecha, V.S., and Upasani, C.D. (2009). Analgesic and anti-inflammatory activities of *Argyria speciosa* root. *Indian Journal of Pharmacology*, 41, 158-161.
- Bafna, P.A., and Balaraman, R. (2005). Anti ulcer and anti oxidant activity of Pepticare, a herbomineral formulation. *Phytomedicine*, 12, 264-270.
- Baggio, C.H., Frietas, C.S., Otofujii, G.D.M., Cipriani, T.R., Souza, L.M., and Sasaki, G.L. (2007). Flavonoid-rich fraction of *Maytenus ilicifolia* Mart. Ex Reiss protects the gastric mucosa of rodents through inhibition of both H<sup>+</sup>K<sup>+</sup> ATPase activity and formation of nitric oxide. *Journal of Ethnopharmacology*, 113, 433-440.
- Bahuguna, Y., Rawat, M.S.M., Juyal, V., and Gupta, V. (2009). Antilithiatic effect of *Jasminum auriculatum* Vahl. *International Journal of Green Pharmacy*, 3, 155-158.
- Bahuguna, Y.M., Rawat, M.S.M., Juya, V., and Gnanarajan, G. (2009). Antilithiatic effect of grains of *Eleusine coracana*. *Saudi Pharmaceutical Journal*, 17, 182.
- Bahuguna, Y.M., Rawat, M.S.M., Juyal, V., and Gusain, K. (2009). Evaluation of *Pyracantha crenulata* Roem for Antiurolithogenic Activity in Albino Rats. *African Journal of Urology*, 15, 159-166.
- Bailey, J.M. (1985). Prostaglandins, leukotrienes, and lipoxins: biochemistry, mechanism of action, and clinical applications. *Plenum Press*, New York, ISBN 0-306-41980-7.
- Balakrishnan, A., Kokilavani, R., Gurusamy, K., Teepa, K.S.A., and Sathya, M. (2011). Effects of ethanolic fruit extract of *Cucumis trigonus* Roxb. on antioxidant and lipid peroxidation in urolithiasis induced wistar albino rats. *Anscient science of life*, 31, 10-16.
- Balaraman, R., Bafna, P.A., and Kolhapure, S.A. (2004). Antioxidant activity of DHC 1, a herbal formulation. *Journal of Ethnopharmacology*, 94, 135-141.
- Balekar, N., Jain, D.K., and Jawanjali, H. (2013). Evaluation of antiulcer activity of bark extract of *Albizia lebeck* linn. *South Pacific Journal of Pharma and Bio Sciences*, 1, 43-50.
- Bandawane, D.D., Beautikumari, S., Gate, S.S., and Patel, A.N. (2014). Evaluation of anti-arthritis activity of ethyl acetate fraction of *Cassia auriculata* Linn. leaves. *Biomedicine & Aging Pathology*, 4, 105-115.

- Bansal, V.K., and Goel, R.K. (2012). Gastroprotective effect of *Acacia nilotica* young seedless pod extract: Role of polyphenolic constituents. *Asian Pacific Journal of Tropical Medicine*, 5, 523–528.
- Bardi, D.A.A., Sarah, K.M.A., Sabri, S.Z., Kadir, F.A., Mahmood, A.A., and Zahra, A.A., Suzy, S.M., Al-Hanhana, N., and Al-Magrami, A. (2011). Anti-ulcerogenic activity of *Typhonium flagelliforme* aqueous leaf extract against ethanol-induced gastric mucosal injury in rats. *Scientific Research and Essays*, 6, 3232-3239.
- Batista, L.M., Almeida, A.B.A.D., Lima, G.R.M., Falcao, H.S., Ferreira, A.L., Magri, L.P., Coelho, R.G., Calvo, T.R., Vilegas, W., and Brito, A.R.M.S. (2013). Gastroprotective Effect of the Ethanolic Extract and Fractions obtained from *Syngonanthus bisulcatus* Rul. *Records of Natural Products*, 7, 35-44.
- Beers, M.H., and Berkow, R. (2006). Gastritis and peptic ulcer disease. Merck Manual of Diagnosis and Therapy, 18th ed., *Merck Research Laboratories*, Whitehouse Station, New Jersey.
- Beers, R.F., and Sizer, I.W. (1952). A spectrophotometric method for measuring the breakdown of hydrogen peroxide by catalase. *The Journal of Biological Chemistry*, 195, 133-40.
- Bertsias, G.K., Salmon, J.E., and Boumpas, D.T. (2010). Therapeutic opportunities in systemic lupus erythematosus: state of the art and prospects for the new decade. *Annals of Rheumatic Disease*, 69, 1603–1611.
- Beukelman, T., Nivedita, M.P., and Nicolino, R. (2011). American College of Rheumatology Recommendations for the Treatment of Juvenile Idiopathic Arthritis: Initiation and Safety Monitoring of Therapeutic Agents for the Treatment of Arthritis and Systemic Features. *Arthritis Care & Research*, 63, 465–482.
- Bhaskar, V.H., and Shelke, T.T. (2012). Effect of ethanolic extract of *Nymphaea alba* Linn on urolithiatic rats. *International Journal of Pharmacy and Pharmaceutical Sciences*, 4, 572-573.
- Bhushan, G., Kavimani, S., and Raj Kapoor, B. (2011). Antiulcer activity of methanolic extract of *Ceiba pentandra* Linn Gaertn on rats. *Journal of Pharmacy Research*, 4, 4132-4134.
- Bihania, G.V., Rojatkar, S.R., and Bodhankar, S.L. (2014). Anti-arthritic activity of methanol extract of *Cyathocline purpurea* (whole plant) in Freund's complete adjuvant- induced arthritis in rats. *Biomedicine & Aging Pathology*, 4, 197–206.
- Bitziou, E., and Patel, B.A. (2012). Simultaneous detection of gastric acid and histamine release to unravel the regulation of acid secretion from the guinea pig stomach. *American Journal of Physiology, Gastrointestinal and Liver Physiology*, 303, 396-403.

- Blois, M.S. (1958). Antioxidant determinations by the use of a stable free radical. *Nature*, 26, 1199-1200.
- Borrelli, F., and Izzo, A.A. (2000). The plant kingdom as a source of anti-ulcer remedies. *Phytotherapy Research*, 14, 581-91.
- Boye, A., Koffuor, G.A., Boampong, J.N., Amoateng, P., Ameyaw, E.O., Ansah, E.O., Addai, G.M., Adjei, C.K., Addo, J., and Penu, D.K.A. (2012). Gastroprotective Effect and Safety Assessment of *Zanthoxylum Zanthoxyloides* (Lam) Waterm Root Bark Extract. *American Journal of Pharmacology and Toxicology*, 7, 73-80.
- Brennan, F.M., Maini, R.N., and Feldman, M. (1998). Role of pro-inflammatory cytokines in rheumatoid arthritis. *Seminar in Immunopathology*, 20, 133-47.
- Cai, X., Zhou, H., Wong, Y.F., Xie, Y., Liu, Z.Q., Jiang, Z.H., Bian, Z.X., Xu, H.X., and Liu, L. (2007). Suppression of the onset and progression of collagen-induced arthritis in rats by QFGJS, a preparation from an anti-arthritis Chinese herbal formula. *Journal of Ethnopharmacology*, 110, 39-48.
- Campbell, D.J., Krum, H., and Ester, M.D. (2005). History and a Review of the Kinin System. <http://www.patentstorm.us>.
- Carvalho, C.A.D., Fernandes, K.M., Matta, S.L.P., Silva, M.B.D., Oliveira, L.L.D., and Fonseca, C.C. (2011). Evaluation of antiulcerogenic activity of aqueous extract of *Brassica oleracea* var. Capitata (cabbage) on wistar rat gastric ulceration. *Archives of Gastroenterology*, 48, 276-282.
- Chandranath, S.I., Bastaki, S.M., and Singh, J.A., (2002). Comparative study on the activity of lansoprazole, omeprazole and PD-136450 on acidified ethanol-and indomethacin induced gastric lesions in the rat. *Clinical and Experimental Pharmacology and Physiology*, 29, 173-180.
- Chattopadhyay, I., Nandi, B., Chatterjee, R., Biswas, K., Bandyopadhyay, U., and Banerjee, R.K. (2004). Mechanism of antiulcer effect of Neem (*Azadirachta indica*) leaf extract: effect on H<sup>+</sup>-K<sup>+</sup>-ATPase, oxidative damage and apoptosis. *Inflammopharmacology*, 12, 153-176.
- Chaturvedi, A., Kumar, M.M., Bhawani, G., Chaturvedi, H., Kumar, M., and Goel, R.K. (2007). Effect of ethanolic extract of *Eugenia jambolana* seeds on gastric ulceration and secretion in rats. *Indian Journal of Physiology and Pharmacology*, 51, 131-140.
- Chaudhari, S.S., Chaudhari, S.R., and Chavan, M.J. (2012). Analgesic, Anti-inflammatory and anti-arthritis activity of *Cassia uniflora* Mill. *Asian Pacific Journal of Tropical Biomedicine*, 2012, 181-186.
- Chehl, N., Chipitsyna, G., Gong, Q., Yeo, C.J., and Arafat, H.A. (2009). Anti-inflammatory effects of the *Nigella sativa* seed extract, thymoquinone, in pancreatic cancer cells. *International Hepato-Pancreato-Biliary Association*, 11, 373-381.

- Chen, L.G., Yang, L.L., and Wang, C.C. (2008). Anti-inflammatory activity of mangostins from *Garcinia mangostana*. *Food and Chemical Toxicology*, 46, 688–693.
- Chen, Y., Tao, S., Zeng, F., Xie, L., and Shen, Z. (2015). Antinociceptive and anti-inflammatory activities of *Schefflera octophylla* extracts. *Journal of Ethnopharmacology*, 171, 42-50.
- Chitme, H.R., Alok, S., Jain, S.K., and Sabharwal, M. (2010). Herbal treatment for urinary stones. *International Journal of Pharmaceutical Science and Research*, 1, 24-31.
- Chitme, H.R., and Patel, N.P. (2009). Antiarthritis activity of *Aristolochia bracteata* extract in experimental animals. *The Open Natural Products Journal*, 2, 6-15.
- Choubey, A., Parasar, A., Choubey, A., Iyer, D., Pawar, R.S., and Patil, U.K. (2010). Potential of medicinal plants in kidney, gall and urinary stones. *International Journal of Drug Development and Research*, 2, 431-444.
- Chow, J.Y.C., Ma, L., and Cho, C.H. (1998). The role of adhesion molecules in gastric ulcer healing. *World Journal of Gastroenterology*, 4, 467–468.
- Choy, E. (2012). Understanding the dynamics: pathways involved in the pathogenesis of rheumatoid arthritis. *Rheumatology*, 51, v3-v11.
- Christina, A.J., Packia, L.M., Nagarajan, M., and Kurian, S. (2002). Modulatory effect of *Cyclea peltata* Lam. on stone formation induced by ethylene glycol treatment in rats. *Methods and Find in Experimental and Clinical Pharmacology*, 24, 77-79.
- Collier, D.S., and Pain, J.A. (1985). Non-steroidal anti-inflammatory drugs and peptic ulcer perforation. *Gut*, 26, 359-63.
- Corne, S.J., Morrissey, S.M., and Woods, R.J. (1974). Proceedings: a method for the quantitative estimation of gastric barrier mucus. *Journal of Physiology*, 242, 116-17.
- D'Amour, F.F., and Smith, G.L. (1941). A method for determining loss of pain sensation. *Journal of Pharmacology and Experimental Therapeutics*, 72, 74–79.
- Dang, G.K., Parekar, R.R., Kamat, S.K., Scindia, A.M., and Rege, N.N. (2011). Anti-inflammatory activity of *Phyllanthus emblica*, *Plumbago zeylanica* and *Cyprus rotundus* in acute models of inflammation. *Phytotherapy Research*, 25, 904-908.
- Danpure, C.J. (2000). Genetic disorders and urolithiasis. *Urol Clin North Am*, 27, 287-299.
- Das, B.N., Saha, A., and Ahmed, M. (2009). Anti-inflammatory activity of bark of *Xeromphis spinosa*. *Bangladesh Journal of Pharmacology*, 4, 76-78.

- Das, D., Bandyopadhyay, D., Bhattacharjee, M., and Banerjee, R.K. (1997). Hydroxyl radical is the major causative factor in stress induced gastric ulceration. *Free Radical Biology and Medicine*, 23, 8–18.
- Das, D., Dash, D., Mandal, T., Kishore, A., and Bairy, K.L. (2011a). Protective effects of *Moringa oleifera* on experimentally induced gastric ulcers in rats. *Research Journal of Pharmaceutical Biological and Chemical Sciences*, 2, 50-55.
- Das, P.K., Pillai, S., Kar, D., Pradhan, D., and Sahoo, S. (2011b). Pharmacological efficacy of *Argemone mexicana* plant extract, against cysteamine-induced duodenal ulceration in rats. *Indian Journal of Medical Sciences*, 65, 92-99.
- Das, S., Deka, S., and Gohain, K. (2008). A preclinical study on the gastric ulcer protective activity of world's hottest chilli, *Capsicum frutescens*. *Journal of Clinical and Diagnostic Research*, 2, 1024-1027.
- Davies, G.R., Simmonds, N.J., Stevens, T.R.J., Sheaff, M.T., Banatvala, N., Laurenson, I.F., Blake, D.R., and Rampton, D.S. (1994). *Helicobacter pylori* stimulates antral mucosal reactive oxygen metabolite production *in vivo*. *Gut*, 35, 179–185.
- Debnath, P.K., Gode, K.D., Govinda, D.D., and Sanyal, A.K. (1974). Effect of propranolol on gastric secretion in albino rats. *Brazilian Journal of Pharmacognosy*, 51, 213–216.
- Demir, S.M., Yilmaz, M., Koseoglu, N., Akalin, D., and Aydin, A. (2003). Role of free radicals in peptic ulcer and gastritis. *Turkish Journal of Gastroenterology*, 14, 39–43.
- Dey, S.C., Khan, M.F., Rahman, M.S., and Rashid, M.A. (2014). Preliminary free radical scavenging, brine shrimp lethality, antimicrobial and thrombolytic activities of *Aganosma dichotoma* (Roth) K. Schum. *Bangladesh Pharmaceutical Journal*, 17, 177-181.
- Dharmani, P., Mishra, P.K., Maurya, R., Chauhan, V.S., and Patil, G. (2005). *Desmodium gangeticum*: A potent anti ulcer agent. *Indian Journal of Experimental Biology*, 43, 517-521.
- Dhuley, J.N. (2004). Investigation on the gastroprotective and antidiarrhoeal properties of *Aegle marmelos* unripe fruit extract. *Hindustan Antibiotics Bulletin*, 41, 45-46.
- Dotan, Y., Lichtenberg, D., and Pinchuk, I. (2004). Lipid peroxidation cannot be used as a universal criterion of oxidative stress. *Progress in Lipid Research*, 43, 200–227.
- Duggan, J.M., and Duggan, A.E. (2006). The possible cause of the pandemic of peptic ulcer in the late 19<sup>th</sup> and earlier 20<sup>th</sup> century. *Medical Journal of Australia*, 185, 667–669.

- Eddouks, M., Chattopadhyay, D., and Zeggwagh, N.A. (2012). Animal Models as Tools to Investigate Antidiabetic and Anti-Inflammatory Plants. *Evidence Based Complementary and Alternative Medicine*, 2012, 1-14.
- Ekambaram, S., Perumal, S.S., and Subramanian, V. (2010). Evaluation of anti-arthritic activity of *Strychnos potatorum* Linn seeds in Freund's adjuvant induced arthritic rat model. *BMC Complementary and Alternative Medicine*, 10, 1-9.
- Esplugues, J.V., Barrachina, M.D., Beltran, B., Calatayud, S., Whittle, B.J., and Moncada, S. (1996). Inhibition of gastric acid secretion by stress: a protective reflex mediated by cerebral nitric oxide. *Proceedings of the National Academy of Sciences*, 93, 14839–14844.
- Evan, A.P. (2010). Physiopathology and etiology of stone formation in the kidney and urinary tract. *Pediatric Nephrology*, 25, 831-841.
- Evans, M. (1994). A guide to herbal remedies. Orient Paperbacks.
- Fahad, J., Vijayalakshmi, M.C., Kumar, S., Sanjeeva, G., Kodancha, P., Benegal, A., Udupa, A.L., and Rathnakar, U.P. (2010). Antiurolithiatic activity of aqueous extract of bark of *Moringa oleifera* (lam.) in rats. *Health*, 2, 352-355.
- Fandriks, L., and Jonson, C. (1990). Effects of acute administration of omeprazole or ranitidine on basal and vagally stimulated gastric acid secretion and alkalinization of the duodenum in anaesthetized cats. *Acta Physiologica Scandinavica*, 138, 181–186.
- Faruk, M.A., Khan, M.F., Mian, M.Y., Rahman, M.S., and Rashid, M.A. (2015). Analgesic and Anti-diarrheal Activities of *Aganosma dichotoma* (Roth) K. Schum. in Swiss-Albino Mice Model. *Bangladesh Pharmaceutical Journal*, 18, 15-19.
- Fauci, A.S., Braunwald, E., Kasper, D., Hauser, S.L., Longo, D., Jameson, J.L., and Loscalzo, J. (2008). Harrison's Principle of internal medicine. *The McGraw Hill companies*, New York.
- Feng, X., Lu, J., Xin, H., Zhang, L., Wang, Y., and Tang, K. (2011). Anti-arthritic active fraction of *Capparis spinosa* L. fruits and its chemical constituents. *Yakugaku Zasshi*, 131, 423-429.
- Fishman, P., and Bar-Yehuda, S. (2010). Rheumatoid Arthritis: History, Molecular Mechanisms and Therapeutic Applications. In: Borea PA (ed.), A3 Adenosine Receptors from Cell Biology to Pharmacology and Therapeutics. *Springer Science+Business Media B.V*, 291-298.
- Franke, A., Teysse, S., and Singer, M.V. (2005). Alcohol related diseases of the esophagus and stomach. *Digestive Disease*, 23, 204–213.
- Funk, C.D. (2001). Prostaglandins and leukotrienes: advances in eicosanoid biology. *Science*, 294, 1871–1875.

- Fykse, V., Solligard, E., Bendheim, M.O., Chen, D., Gronbech, J.E., Sandvik, A.K., and Waldum, H.L. (2006). ECL cell histamine mobilization and parietal cell stimulation in the rat stomach studied by microdialysis and electron microscopy. *Acta Physiologica*, 186, 37-43.
- Gaby, A.R. (1999). Alternative Treatments for Rheumatoid Arthritis. *Alternative Medicine Review*, 4, 392-402.
- Garg, V.K., and Paliwal, S.K. (2011). Anti-inflammatory activity of aqueous extract of *Cynodon dactylon*. *International Journal of Pharmacology*, 7, 370-375.
- Goel, R.K., and Bhattacharya, S.K. (1991). Gastroduodenal mucosal defence and mucosal protective agents. *Indian Journal of Experimental Biology*, 29, 701-14.
- Goel, R.K., Gupta, S., Shankar, R., and Sanyal, A.K. (1986). Antiulcerogenic effect of Banana powder (*Musa sapientum* var. *paradisiaca*) and its effect on mucosal resistance. *Journal of Ethnopharmacology*, 18, 33-44.
- Goel, R.K., Sairam, K., Rao, C.V., and Raman, A. (2001). Role of gastric antioxidant and anti *Helicobacter pylori* activities in the antiulcerogenic activity of plaintain banana (*Musa sapientum* var. *paradisiaca*). *Indian Journal of Experimental Biology*, 39, 719-722.
- Gorzalczany, S., Marrassini, C., Mino, J., Acevedo, C., and Ferraro, G. (2011). Antinociceptive activity of ethanolic extract and isolated compounds of *Urtica circularis*. *Journal of Ethnopharmacology*, 134, 733-738.
- Govindarajan, R., Vijayakumar, M., Singh, M., Rao, Ch.V., Shirwaikar, A., Rawat, A.K., and Pushpangadan, P. (2006). Antiulcer and antimicrobial activity of *Anogeissus latifolia*. *Journal of Ethnopharmacology*, 106, 57-61.
- Green, M.L., Hatch, M., and Andfreel, R.W. (2005). Ethylene glycol induces hyperoxaluria without metabolic acidosis in rats. *American Journal of Physiology. Renal Physiology*, 289, F536-F543.
- Gregory, M., Divya, B., Mary, R.A., Viji, M.M.H., Kalaichelvan, V.K., and Palanivel, V. (2013). Anti-ulcer activity of *Ficus religiosa* leaf ethanolic extract. *Asian Pacific Journal of Tropical Biomedecine*, 3, 554-556.
- Greiner A, Plischke H, Kellner H, Gruber, R. (2005). Association of anti-cyclic citrullinated peptide antibodies, anti-citrullin antibodies, and IgM and IgA rheumatoid factors with serological parameters of disease activity in rheumatoid arthritis. *Annals of the New York Academy and Sciences*, 1050, 295-303.
- Griffin, R.C. (1960). "A. M. S. M. Technical Method of Analysis". 2nd ed., *Mc Graw Hill Publishers*. New York and London, pp. 299.
- Griswold, B., Humoller, F.L., and McIntyre, A.R. (1951). Inorganic phosphate and phosphate ester in tissue extracts. *Analytical chemistry*, 23, 192-94.

- Groenen, M.J.M., Kuipers, E.J., Hansen, B.E., and Ouwendijk, R.J.T. (2009). Incidence of duodenal ulcers and gastric ulcers in a Western population: Back to where it started. *Canadian Journal of Gastroenterology and Hepatology*, 23, 604-608.
- Gupta, S.R., Nirmal, S.A., Patil, R.Y., and Asane, G.S. (2009). Antiarthritic activity of various extracts of *Sida rhombifolia* aerial parts. *Natural Products Research*, 23, 689-695.
- Hagerman, A.I., Harvey, M., and Makkar, H.P.S. (2000). Quantification of Tannins in Tree Foliage—A Laboratory Manual. Vienna: FAO/ IAEA, 4–7.
- Halliwell, B., Gutteridge, J.M., and Aruoma, O.I. (1987). The deoxyribose method: a simple “test tube” assay for determination of rate constants for reactions of hydroxyl radicals. *Analytical Biochemistry*, 165, 215–219.
- Hariprasath, L., Jegadeesh, R., and Raaman, N. (2012). Gastroprotective effect of *Senecio candicans* DC on experimental ulcer models. *Journal of Ethnopharmacology*, 140, 145–150.
- Harshman, M.R., and Aldoori, W. (2004). How diet and lifestyle affect duodenal ulcers: Review of the evidence. *Canadian Family Physician*, 50, 727–732.
- Harsoliya, M.S., Pathan, J.K., Khan, N., Bhatt, D., and Patel, V.M. (2011). Effect of ethanolic extracts of *Bergenia Ligulata*, *Nigella Sativa* and combination on calcium oxalate urolithiasis in rats. *International Journal of Drug Formulation & Research*, 2, 268-280.
- Hawk, P.B., Oser, B.L., and Summerson, H.W. (1947). Practical Physiological Chemistry, 12th ed., London, Churchill, pp. 347.
- Hemamalini, K., Ashok, P., Sunny, G., Reddy, S.K., Ganesh, G., Santoshini, K., Rashmita, K., Priyanka, P., Jayasri, Y., Vishwanath, T., and Vassireddy, U. (2011). Gastroprotective activity of *Gymnosporia emerginata*, *Solanum pubescence* and *Anogessius acuminate* leaf extract against ethanol-induced gastric mucosal injury in rats. *International Journal of Pharmaceutical and Biomedical Research*, 2, 38-42.
- Hirayama, H., Wang, Z., Nishi, K., Ogawa, A., Ishimatu, T., Ueda, S., Kubo, T., and Nohara, T. (1993). Effect of *Desmodium styracifolium*- triterpenoid on calcium oxalate renal stones. *British Journal of Urology*, 71, 143–147.
- Hollander, D., Tarnawski, A., Krause, W.J., and Gergely, H. (1985). Protective effect of sucralfate against alcohol induced gastric mucosal injury in the rat. *Gastroenterology*, 88, 366–374.
- Honda, Z.I., Ishii, S., and Shimizu, T. (2002). Platelet-activating factor receptor. *Journal of Biochemistry*, 131, 773-779.

- Hopkins, R.J., Girardi, L.S., and Turney, E.A. (1996). Relationship between *Helicobacter pylori* eradication and reduced duodenal and gastric ulcer recurrence: a review. *Gastroenterology*, 110, 1244-1252.
- Hosseinzadeh, H., Khooei, A.R., Zahra, K., and Shariaty, V.M. (2010). Antiurolithiatic activity of *Pinus eldarica* Medw. Fruits aqueous extract in rats. *Endourology and Stone Disease*, 7, 232-237.
- Hoving, J.L., Buchbinder, R., Hall, S., Lawler, G., Coombs, P., McNealy, S., Bird, P., and Conell, D. (2004). A comparison of magnetic resonance imaging, sonography, and radiography of the hand in patients with early rheumatoid arthritis. *Journal of Rheumatology*, 31, 663-675.
- Hu, F., Hepburn, R., Li, Y., Chen, M., Radloff, E., and Daya, S. (2005). Effect of ethanol and water extracts of Propolis (bee glue) on acute inflammatory animal models. *Journal of Ethnopharmacology*, 10, 276-283.
- Huang, X., Moore, D.J., Ketchum, R.J., Nunemaker, C.S., Kovatchev, B., McCall, A.L., and Brayman, K.L. (2008). Resolving the conundrum of islet transplantation by linking metabolic dysregulation, inflammation, and immune regulation. *Endocrine Reviews*, 29, 603-630.
- Hunskar, S., and Hole, K. (1987). The formalin test in mice: dissociation between inflammatory and non-inflammatory pain. *Pain*, 30, 103-114.
- Iain, B., and George, M.S. (2011). The Pathogenesis of Rheumatoid Arthritis. *New England Journal of Medicine*, 365, 2205-19.
- Ikasari, E.D., Utomo, A.B., Setyopuspito, A., Adhityasmara, D., and Setyowati, H. (2017). Evaluation of antiulcer activity of mucoadhesive microgranules containing ranitidine hydrochloride in experimental rats. *International Journal of Current Pharmaceutical Research*, 9, 45-49.
- Indian Herbal Pharmacopoeia. (2002). (Revised ed). Indian Drug Manufacturers. 495-496.
- International Association for Study of Pain, (1980). Sub-committee on Taxonomy. Pain terms: a list with definitions and notes on usage. *Pain*, 8, 249-52.
- Ismail, S.M., Rao, K.R.S.S., and Bhaskar, M. (2016). Evaluation of anti-inflammatory activity of *Boswellia serrata* on carrageenan induced paw edema in albino Wistar rats. *International Journal of Research in Medical Sciences*, 4, 2980-2986.
- Jaiswal, S.K., Rao, C.V., Sharma, B., Mishra, P., Das, S., and Dubey, M.K. (2011). Gastroprotective effect of standardized leaf extract from *Argyrea speciosa* on experimental gastric ulcers in rats. *Journal of Ethnopharmacology*, 137, 341-344.

- Jalalpura, S.S., Mandavkara, Y.D., Khalurea, P.R., Shindea, G.S., Shelara, P.A., and Shah, A.S. (2011). Anti arthritic activity of various extracts of *Mesua ferrea* Linn. seed. *Journal of Ethnopharmacology*, 138, 700– 704.
- Jayakumari, S., Anbu, J., and Ravichandran, V. (2011). Antiurolithiatic activity of *Dichrostachys cinerea* (L.) Wight & Arn root extract. *Journal of Pharmacy Research*, 4, 1206-1208.
- Jayaprakasha, G.K., Jaganmohan, R.L., and Sakariah, K.K. (2004). Antioxidant activities of flavidin in different *in vitro* model systems. *Bioorganic and Medicinal Chemistry*, 12, 5141– 5146.
- Johansen, D.A. (1940). Plant Micro technique, 1st ed. *McGraw Hill Book Co*, New York, London, pp.182.
- Joshi, A., Joshi, V.K., Pandey, D., and Hemalatha, S. (2016). Systematic investigation of ethanolic extract from *Leea macrophylla*: Implications in wound healing. *Journal of Ethnopharmacology*, 191, 95-106.
- Joshi, A., Sengar, N., Prasad, S.K., Goel, R.K., Singh, A., and Hemalatha, S. (2013). Wound healing potential of the root extract of *Albizia lebbek*. *Planta Medica*, 79, 737-43.
- Kakkar, P., Das, B., and Viswanathan, P.N. (1984). A modified spectrophotometric assay of superoxide dismutase. *Indian Journal of Biochemistry and Biophysics*, 21, 130-32.
- Kalimuthu, S., Rajesh, P., Rajesh, K.V., Balamurugan, B., and Chandrasekar, T.M. (2010). Antiulcer activity of Methanolic extract of *Acalypha indica* Linn. (Euphorbiaceae) by PylorousLigtire and Swim Stress Induced Ulceration. *Journal of Pharmacy Research*, 3, 2779-2783.
- Kamboj, V.P. (2000). Herbal medicine. *Current science*, 78, 35-44.
- Kang, S.Y., Yeon, S.Y., Roh, D.H., Jeon, M.J., Seo, H.S., Uh, D.K., Kwon, Y.B., Kim, H.W., Han, H.J., Lee, H.J., and Lee, J.H. (2008). Anti arthritic effect of ursolic acid on zymosan induced acute inflammation and adjuvant induced chronic arthritis models. *Journal of pharmacy and pharmacology*, 60, 1347-1354.
- Kangwan, N., Park, J.M., Kim, E.H., Hahm, K.B. (2014). Quality of healing of gastric ulcers: Natural products beyond acid suppression. *World journal of gastrointestinal pathophysiology*, 5, 40-47.
- Kasture, S.B., Kasture, V.S., and Chopde, C.T. (2001). Anti-inflammatory activity of *Rubia cordifolia* roots. *Journal of Natural Remedies*, 1, 111-115.
- Katayama, S., Shionoya, H., and Ohtake, S. (1978). A new method for extraction of extravasated dye in the skin and the influence of fasting stress on passive cutaneous anaphylaxis in guinea pigs and rats. *Microbiology and Immunology*, 22, 89-101.

- Kato, S., Kitamura, M., Korolkiewicz, R.P., and Takeuchi, K. (1998). Role of nitric oxide in regulation of gastric acid secretion in rats: effects of NO donors and NO synthase inhibitor. *Brazilian Journal of Pharmacognosy*, 123, 839-846.
- Kaur, A., Singh, R., Sharma, R., and Kumar, S. (2012). Peptic ulcer: A review on etiology and pathogenesis. *International Research Journal of Pharmacy*, 3, 34-38.
- Kaur, T., Bijarnia, R.K., Singla, S.K., and Tandon, C. (2009). *In-vivo* efficacy of *Trachyspermum ammi* anticalcifying protein in urolithiatic rat model. *Journal of Ethnopharmacology*, 126, 459-62.
- Kawabe, J., Ushikubi, F., and Hasebe, N. (2010). Prostacyclin in Vascular Diseases. *Circulation Journal*, 74, 836-843.
- Khaling, M., Kumar, S., and Vandana. (2014). Current scenario of urolithiasis and the use of medicinal plants as antiurolithiatic agents in Manipur (North East India): A Review. *International Journal of Herbal Medicine*, 2, 1-12.
- Khan, A., Bashir, S., Khan, S.R., and Gilani, A.H. (2011). Antiurolithic activity of *Origanum vulgare* is mediated through multiple pathways. *BMC, Complementary and Alternative Medicine*, 11, 96-127.
- Khan, M.A., and Pradhan, D. (2011). Antiurolithic activity of *Ageratum conyzoides* extract in rats. *Pharmacologyonline*, 3, 953-958.
- Khan, M.Z.I., Ferdous, M.R., Hussain, M.I., Islam, M.A., Sultana, J., Islam, M.N., Pandaya, S., and Pandey, M. (2014). Potential Biological Evaluation of Hypoglycemic Activity of Leaves of *Aganosma dichotoma*. *World Journal of Pharmaceutical Research*, 4, 391-396.
- Khan, N.I., Shinge, J.S., and Naikwade, N.S. (2010). Antilithiatic effect of *Helianthus annuus* Linn. leaf extract in ethylene glycol and ammonium chloride induced nephrolithiasis. *International journal of Pharmacy and Pharmaceutical Sciences*, 2, 181.
- Khan, S.R. (1997). Animal model of kidney stone formation: an analysis. *World Journal of Urology*, 15, 236.
- Khandelwal, K.R. (2007). Practical Pharmacognosy: Techniques and Experiments, 17th ed., *Nirali Prakashan Publishers*, Pune, India.
- Khare, C.P. (2007). Indian medicinal plants. *Springer Science+Business Media, LLC.*, 233 Spring Street, New York, NY 10013, USA. pp 24.
- Khatib, N., Dhaval, G., Hashilkar, N., and Rajesh, K.J. (2010). Antiurolithiatic potential of the fruit extracts of *Carica papaya* on ethylene glycol induced urolithiatic rats. *Journal of Pharmacy Research*, 3, 2772-2775.

- Kilpatrick, L., and Harris, M.C. (1998). Cytokines and the inflammatory response. In: *Fetal and Neonatal Physiology*. Editors: Polin RA, Fox WW. Philadelphia: W.B. Saunders Company, pp. 1967-1979.
- Kim, D.C., Kim, S.H., Choi, B.H., Baek, N.I., Kim, D., Kim, M.J., and Kim, K.T. (2005). *Curcuma longa* Extract Protects against Gastric Ulcers by Blocking H2 Histamine Receptors. *Biological and Pharmaceutical Bulletin*, 28, 2220–2224.
- Kinne, R.W., Palombo-Kinne, E., and Emmrich, F. (1997). T cells in the pathogenesis of rheumatoid arthritis villains or accomplices. *Biochimica et Biophysica Acta*, 1360, 109-141.
- Kirkham, B.W., Lassere, M.N., Edmonds, JP, Juhasz, K.M., Bird, P.A., Lee, C.S., Shnier, R., and Portek, I.J. (2006). Synovial membrane cytokine expression is predictive of joint damage progression in rheumatoid arthritis: A two-year prospective study (the DAMAGE Study Cohort). *Arthritis and Rheumatology*, 54, 1122-1131.
- Kirtikar, K.R., and Basu, B.D. (1975). *Indian Medicinal Plants*. Dehradun, India: M/s Bishen Singh Mahendra Pal Singh. pp 1587.
- Klareskog, L., Solt, P., Lundberg, K., Kallberg, H., Bengtsson, C., Grunewald, J., Ronnelid, J., Harris, H.S., Ulfgreen, A.K., Rantapaa, D.S., Eklund, A., Padyukov, L., and Alfredsson, L. (2006). A new model for an etiology of rheumatoid arthritis: smoking may trigger HLA-DR (shared epitope) restricted immune reactions to autoantigens modified by citrullination. *Arthritis and Rheumatology*, 54, 38-46.
- Kobayashi, O., Watanabe, S., Hirose, M., and Sato, N. (1996). Effects of transforming growth factors on the wound repair of cultured rabbit gastric mucosal cells. *Journal of Gastroenterology and Hepatology*, 11, 129–136.
- Kokate, C.K., Purohit, A.P., and Gokhale, S.B. (2006). *Pharmacognosy*, 34th ed. Nirali Prakashan, Pune, India.
- Kokoski, J., Kokoski, R., and Slama, F.J. (1958). Fluorescence of powdered vegetable drugs under ultraviolet radiation. *Journal of American Pharmaceutical Association*, 47, 715.
- Konturek, P.C., Brzozowski, T., Konturek, S.J., Ernst, H., Drozdowicz, D., Pajdo, R., and Hahn, E.G. (1997). Expression of epidermal growth factor and transforming growth factor alpha during ulcer healing. Time sequence study. *Scandinavian Journal of Gastroenterology*, 32, 6-15.
- Kore, K.J., Shete, R.V., Jadhav, P.J., and Kabra, M.P. (2011). Antiurolithiatic effects of hydroalcoholic extract of *Lawsonia inermis* L leaves. *International Journal of Universal Pharmacy and Life Sciences*, 1, 81-95.
- Kouji, M., Yuya, T., Etsuko, T., Francis, S., and Satoshi, U. (2011). Chemokines in inflammatory and immune diseases. *Inflammation and Regeneration*, 31, 11-22.

- Krambeck, A.E., Lieske, J.C., Li, X., Bergstralh, E.J., Melton, L.J., and Rule, A.D. (2013). Effect of age on the clinical presentation of incident symptomatic urolithiasis in the general population. *Journal of Urology*, 189, 158-164.
- Kumar, K.E., Mastan, S.K., Reddy, K.R., Reddy, G.A., Raghunandan, N., and Chaitanya, G. (2008). Anti-arthritic property of methanolic extract of *Syzygium cumini* extract. *International Journal of Integrative Biology*, 4, 55-61.
- Kumar, R., Gupta, Y.K., and Singh, S. (2016). Anti-inflammatory and anti-granuloma activities of *Berberis aristata* D.C. in experimental models of inflammation. *Indian Journal of Pharmacology*, 48, 155-161.
- Kumar, V., Abbas, A.K., and Aster, J.C. (2015). Robins and Cotran pathologic basis of disease, 9<sup>th</sup> ed. © by Saunders, an imprint of Elsevier Inc, Philadelphia, pp. 84.
- Kumar, V., Kumar, R., Yadav, S., Singh, S., and Pandeya, S.N. (2010). Evaluation of analgesic & anti-inflammatory activity of hydro- alcoholic extract of *Desmostachya bipinnata* (L.) Stapf root on experimental animals. *International Journal of Pharmaceutical Sciences and Drug Research*, 2, 213-215.
- Kumaran, A., and Karunakaran, J. (2006). *In vitro* antioxidant activities of methanol extracts of five Phyllanthus species from India. *Food Science and Technology*, 40, 344-52.
- Kyei, S., Koffuor, G.A., and Boampong, J.N. (2012). Antiarthritic effect of aqueous and ethanolic leaf extracts of *Pistia stratiotes* in adjuvant-induced arthritis in Sprague-Dawley rats. *Journal of Experimental Pharmacology*, 4, 41-51.
- Kyoji, S., Jian, H.Z., Jack, D.B., Peter, E., Oscar, U.S., Kan, L., Joseph, W.C.L., and Felix, W.L. (1997). Cigarette Smoke Increases Gastric Ulcer Size in Part by an Angiotensin II-Mediated Mechanism in Rats. *Digestive Diseases and Sciences*, 42, 74-78.
- Laloo, D., Prasad, S.K., Sairam, K., and Hemalatha, S. (2013). Gastroprotective activity of ethanolic root extract of *Potentilla fulgens* Wall ex Hook. *Journal of Ethnopharmacology*, 146, 505-514.
- Le, T.H., and Fantry, G.T. (2008). Peptic ulcer disease. eMedicine. Retrieve from: <http://www.emedicine.com/MED/topic1776.htm>.
- Lee, D., and Weinblatt, M.E. (2001). Rheumatoid arthritis. *Lancet*, 358 (9285), 903-911.
- Lee, J.H., Lee, D.U., and Jeong, C.S. (2009). *Gardenia jasminoides* Ellis ethanol extract and its constituents reduce the risks of gastritis and reverse gastric lesions in rats. *Food and Chemical Toxicology*, 47, 1127-1131.
- Li, M., He, J., Jiang, L.L., Ng, E.S., Wang, H., Lam, F.Y., Zhang, Y.M., Tan, N.H., and Shaw, P.C. (2013). The anti-arthritic effects of *Aconitum vilmorinianum*, a folk

- herbal medicine in south western China. *Journal of Ethnopharmacology*, 147, 122–127.
- Liao, K.P., Batra, K.L., Chibnik, L., and Kostenbader, K.H. (2008). Anticyclic citrullinated peptide revised criteria for the classification of rheumatoid arthritis. *Annals of the Rheumatic Diseases*, 67, 1557-61.
- Lima, Z.P., Severi, J.A., Pellizzon, C.H., Brito, A.R.M.S., Solis, P.N., Caceres, A., Giron, L.M., Vilegas, W., and Hiruma Lima, C.A. (2006). Can the aqueous decoction of mango flowers be used as antiulcer agent. *Journal of Ethnopharmacology*, 106, 29–37.
- Lin, B., Zhang, H., Zhao, X.X., Rahman, K., Wang, Y., Maa, X.Q., Zheng, C.J., Zhang, Q.Y., Han, T., and Qin, L.P. Inhibitory effects of the root extract of *Litsea cubeba* (lour.) pers. on adjuvant arthritis in rats. *Journal of Ethnopharmacology*, 147, 327–334.
- Lindstrom, E., Chen, D., Norlen, P., Andersson, K., and Hakanson, R. (2001). Control of gastric acid secretion: the gastrin ECL cell parietal cell axis. *Comparative Biochemistry and Physiology: A Molecular and Integrative Physiology*, 128, 505–514.
- Liu, J. (1995). Pharmacology of oleanolic acid and ursolic acid. *Journal of Ethnopharmacology*, 49, 57-68.
- Londonkar, R., Kamble, A., and Reddy, V.C. (2010). Anti-Inflammatory activity of *Pandanus odoratissimus* extract. *International Journal of Pharmacology*, 6, 311-314.
- Lopez, M., and Hoppe, B. (2010). History, epidemiology and regional diversities of urolithiasis. *Pediatric Nephrology*, 25, 49-59.
- Low, R.K., and Stoller, M.L. (1997). Uric acid-related nephrolithiasis. *Urologic Clinics of North America*, 24, 135-48.
- Lowry, O.H., Rosenborough, N.J., Farr, A.L., and Randal, R.J. (1951). Protein measurement with folin phenol reagent. *The Journal of Biological Chemistry*, 193, 265-75.
- Mackenzie, A.R., Dawson, J. (2005). Could rheumatoid arthritis have an infectious aetiology? *Drug Discovery Today: disease mechanisms*, 2, 345-349.
- Madhu, K.D., and Harindran, J. (2014). Antiarthritic potential of *Ocimum gratissimum* L. in collagen induced arthritic Sprague Dawley rats. *Biomedicine & Aging Pathology*, 4, 191–196.
- Makkar, H.P.S. (2000). Quantification of Tannins in Tree Foliage: A Laboratory Manual for the FAO/IAEA Co-ordinated Research Project on 'Use of Nuclear and Related Techniques to Develop Simple Tannin Assays for Predicting and Improving

- the Safety and Efficiency of Feeding Ruminants of Tanniniferous Tree Foliage. Working document. Vienna: FAO/IAEA,3–5.
- Malik, J.K., Manvi, F.V., Alagawadi, K.R., and Noolvi, M. (2007). Evaluation of anti-inflammatory activity of *Gymnema sylvestre* leaves extract in rats. *International Journal of Green Pharmacy*, 2, 114-115.
- Mannick, E.E., Bravo, L.E., Zarama, G., Realpe, J.L., Zhang, X.J., Ruiz, B., Fonham, E.T., Mera, R., Miller, M.J., and Correa, P. (1996). Inducible nitric oxide synthase, nitrotyrosine, and apoptosis in *Helicobacter pylori* gastritis: effect of antibiotics and antioxidants. *Cancer Research*, 56, 3238-3243.
- Manocha, N., Chandra, S.K., Sharma, V., Sangameswaran, B., and Saluja, M. (2011). Anti rheumatic and antioxidant activity of extract of stem bark of *Ficus bengalensis*. *Research Journal of Chemical Sciences*, 1, 2-8.
- Mark, E.V., Guy, A.Z., Thomas, M.M., and Stephen, M.P. (1993). Platelet-activating factor: a phospholipid autacoids with diverse actions. *Journal of Lipid Research Volume*, 34, 691-702.
- Mark, P. (1997). Understanding the natural management of pain and inflammation. Clinical Nutrition Insights. Copyright by *Advanced Nutrition Publications*.
- Marshall, B.J., and Warren, J.R. (1984). Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. *Lancet*, 1, 1311–1315.
- Mattsson, R., Mattsson, A., Holmdahl, R., Whyte, A., and Rook, G.A. (1991). Maintained pregnancy levels of oestrogen afford complete protection from post-partum exacerbation of collagen induced arthritis. *Clinical and Experimental Immunology*, 85: 45-47.
- Mayee, R., and Thosar, A. (2011). Evaluation of *Lantana camara* Linn. (Verbenaceae) for antiurolithiatic and antioxidant activities in rats. *International Journal of Pharmaceutical and Clinical Research*, 3, 10-14.
- Medeiros, R., Cabrini, D.A., Ferreira, J., and Mori, M.A. (2004). Bradykinin B1 receptor expression induced by tissue damage in the rat portal vein: a critical role for mitogen- activated protein kinase and nuclear factor-kappaB signaling pathways. *Circulation Research*, 94, 1365-1382.
- Mesele, B., Abiye, T., Bahiru, E., Mengistu, E., Seyoum, M., Alemayehu, B., Abiyot, D. (2004). General Pathology. Ethiopia Public Health Training Initiative, Funded under USAID Cooperative Agreement No. 663-A-00-00-0358-00.
- Middleton, D.J. (1996). A Revision of *Aganosma* (Blume) G. Don (Apocynaceae). *Kew Bulletin*, 51, 455-82.

- Mirje, M.M., Zaman, S.U., and Ramabhimaiah, S. (2014). Evaluation of the anti-inflammatory activity of *Ocimum sanctum* Linn (Tulsi) in albino rats. *International Journal of Current Microbiology and Applied sciences*, 3, 198-205.
- Mizui, T., Sato, H., Hirose, F., and Doteuchi, M. (1987). Effect of antiperoxidative drugs on gastric damage induced by ethanol in rats. *Life Sciences*, 41, 755-763.
- Moe, O.W. (2006). Kidney stones: pathophysiology and medical management. *Lancet*, 367, 333-444.
- Moreau, M.E., Garbacki, N., Molinaro, G., Brown, N.J., Marceau, F., Adam, A. (2005). The kallikrein-kinin system: current and future pharmacological targets. *Journal of Pharmacological Sciences*, 99, 6-38.
- Morgan, K. (2002). *Medicine of the Gods: Basic Principles of Ayurvedic Medicine*. [<http://www.compulink.co.uk/~mandrake/ayurveda.htm>].
- Mukhopadhyay, K., Bhattacharya, D., Chakrabarti, A., Goel, R.K., and Sanyal, A.K. (1987). Effect of banana powder (*Musa sapientum* var. *paradisiaca*) on gastric mucosal shedding. *Journal of Ethnopharmacology*, 21, 11-19.
- Muniappan, M., and Sundararaj, T. (2003). Anti inflammatory and antiulcer activities of *Bambusa arundinacea*. *Journal of Ethnopharmacology*, 88, 161–167.
- Mythilypriya, R., Shanthi, P., and Sachdanandam, P. (2008). Salubrious effect of Kalpaam ruthaa, a modified indigenous preparation in adjuvant-induced arthritis in rats- a biochemical approach. *Chemico- Biological Interaction*, 173, 148-158.
- Nagani, K., Kaneria, M. and Chanda, S. (2012). Pharmacognostic studies on the leaves of *Manilkara zapota* L. (Sapotaceae). *Pharmacognosy Journal*, 4, 38-41.
- Nair, V., Singh, S., and Gupta, Y.K. (2011). Evaluation of the disease modifying activity of *Colchicum luteum* Baker in experimental arthritis. *Journal of Ethnopharmacology*, 133, 303-307.
- Navarrete, A., Trejo-Miranda, J.L., and Reyes-Trejo, L. (2002). Principles of root bark of *Hippocratea excels* (Hippocrataceae) with gastroprotective activity. *Journal of Ethnopharmacology*, 79, 383-88.
- Nayeem, K., Godad, A., Hashilkar, N., and Joshi, R.K. (2010). Gastroprotective activity of the aqueous extract from the roots of *Daucus carota* in rats. *International Journal of Research in Ayurveda and Pharmacy*, 1, 112-119.
- Nelson, D.I., and Cox, M.M. (2005). *Lehninger principles of biochemistry*, 4th ed., *W.H. Freeman and company*, New York, 263 264.
- Nonato, F.R., Nogueira, T.M.O., Barros, T.A.A., Lucchese, A.M., Oliveira, C.E.C., Santos, R.R.D., Soares, M.B.P., and Villarreal, C.F. (2011). Antinociceptive and

- antiinflammatory activities of *Adiantum latifolium* Lam.: Evidence for a role of IL-1 inhibition. *Journal of Ethnopharmacology*, 136, 518-524.
- Obiri, D.D., Osafo, N., Ayande, P.G., and Antwi, A.O. (2014). *Xylopi aethiopica* (Annonaceae) fruit extract suppresses Freund's adjuvant-induced arthritis in Sprague-Dawley rats. *Journal of Ethnopharmacology*, 152, 522–531.
- Ofuegbe, s.O., Adedapo, A.A., and Adeyemi, A.A. (2014). Anti-inflammatory and analgesic activity of the methanol leaf extract of *Phyllanthus amarus* in some laboratory animals. *Journal of Basic and Clinical Physiology and Pharmacology*, 25, 175-180.
- Ohkawa, H., Ohishi, N., and Yagi, K. (1979). Assay for lipid peroxides in animal tissues by thiobarbituric acid reaction. *Analytical Biochemistry*, 95, 351-58.
- Ohmachi, Y., Fujimura, H., Otsuka, E., Miyazaki, T., Toriumi, W., Kitamura, K., and Doi, K. (2002). Recovery process of arthritis induced by 6-Sulfanilamidoindazole (6SAI) in rats. *Histology and Histopathology*, 17, 437-444.
- Olaide, O.A., Makinde, J.M., and Awe, S.O. (1999). Effects of the aqueous extract of *Bridelia ferruginea* stem bark on carrageenan-induced oedema and granuloma tissue formation in rats and mice. *Journal of Ethnopharmacology*, 66, 113–117.
- Oliveira, A.P., Santin, J.R., Lemos, M., Klein, L.C., Couto, A.G., Meyre, S.B.C., Cechinel Filho, V., and Faloni, A.S. (2011). Gastroprotective activity of methanol extract and marrubiin obtained from leaves of *Marrubium vulgare* L. (Lamiaceae). *Journal of Pharmacy and Pharmacology*, 63, 1230–1237.
- Oliveira, F.A., Vieira-Junior, G.M., and Chaves, M.H. (2004). Gastroprotective and anti-inflammatory effects of resin from *Protium heptaphyllum* in mice and rats. *Pharmacology Research*, 49, 105-11.
- Onyenmechi, J.A., Orish, E.O., Chudi, E.D., Ejeatuluchukwu, O.B.I., Tobias, E., Lasbery, A., and Ukoha. (2002). Effect of Rinbacin extract on rat Kidney. *Biological and Pharmaceutical Bulletin*, 25, 1022-1025.
- Organization for Economic Co-operation and Development. (2008). Guidelines for testing of chemicals. Guidance no. 425, Acute oral toxicity: up and down procedure (UDP). Available from: <http://iccvam.niehs.nih.gov/Supp/Docs/Fed Docs/OECD/OECD tg425.pdf>.
- Osborne, C.A., Lulich, J.P., Kruger, J.M., Ulrich, L.K., and Koehler, L.A. (2009). Analysis of 451,891 Canine uroliths, feline uroliths, and feline urethral plugs from 1981-2007: Perspectives from the Minnesota Urolith Center. *Veterinary Clinics of North America: Small Animal Practice*, 39, 183-197.
- Otari, K.V., Shete, R.V., Upasani, C.D., Adak, V.S., Bagade, M.Y., Harpalani, A.N. (2010). Evaluation of anti-inflammatory and anti-arthritic activities of ethanolic

- extract of *Vernonia anthelmintica* seeds. *Journal of Cell and Tissue Research*, 10, 2269- 2280.
- Paik, M.L., Wainstein, M.A., Spirnak, J.P., Hampel, N., and Resnick, M.I. (1998). Current indications for open stone surgery in the treatment of renal and ureteral calculi. *Journal of Urology*, 159, 374-378.
- Pal, S.K., and Shukla, Y. (2003). Herbal Medicine: Current Status and the Future. *Asian Pacific Journal of Cancer Prevention*, 4, 281-288.
- Panchal, A.H., Patel, R.K., and Bhandari, A. (2011). Anti-arthritic and synergetic activity of *Wedelia calendulacea* L. with Methotrexate in adjuvant induced arthritis with cardioprotective activity in rat. *Pharmacologyonline*, 3, 175-187.
- Panda, V., and Sonkamble, M. (2012). Anti-ulcer activity of *Ipomoea batatas* tubers (sweet potato). *Functional Foods in Health and Disease*, 2, 48-61.
- Pandey, D., Joshi, A., and Hemalatha, S. (2015). Quality Control Standardization and In-Vitro Antioxidant Activity of *Aganosma dichotoma* K Schum Root. *Pharmacognosy Journal*, 7, 74-82.
- Pandey, D., Joshi, A., and Hemalatha, S. (2017). Anti-ulcer study of standardized ethanol root extract of *Aganosma dichotoma* and isolated ursolic acid. *International Journal of Pharmacy and Pharmaceutical Sciences*, 9, 172-180.
- Panthong, A., Kanjanapothi, D., Taesotikul, T., Wongcome, T., and Reutrakul, V. (2003). Anti-inflammatory and antipyretic properties of *Clerodendrum petasites* S. Moore. *Journal of Ethnopharmacology*, 85, 151-156.
- Paolo, M. (2010). Role of Leukotrienes and Leukotriene Modifiers in Asthma. *Pharmaceuticals*, 3, 1792-1811.
- Parmar, R.K., Kachchi, N.R., Tirgar, P.R., Desai, T.R., and Bhalodiya, P.N. (2012). Preclinical evaluation of antiurolithiatic activity of *Swertia chirata* stems. *International Research Journal of Pharmacy*, 3, 198-202.
- Parvez, M., Gayasuddin, M., Basheer, M., and Janakiraman, K. (2010). Screening of *Piper cubeba* (Linn) fruits for Anti-Ulcer Activity. *International Journal of PharmTech Research*, 2, 1128-1132.
- Patel, N.B., and Andreas, K. (2010). Physiology of pain. Guide to pain management in low resources settings. *International Association for Study of Pain*, Seattle.
- Patel, R.K., Patel, S.B., and Shah, J.G. (2011). Anti-Urolithiatic Activity of ethanolic extract of seeds of *Benincasa hispida* (Thumb). *Pharmacologyonline*, 3, 586-591.
- Patil, C.R., Rambhade, A.D., Jadhav, R.B., Patil, K.R., Dubey, V.K., and Sonara, B.M. (2011). Modulation of arthritis in rats by *Toxicodendron pubescens* and its homeopathic dilutions. *Homeopathy*, 100, 131-137.

- Patil, M.V.K., Kandhare, A.D., and Bhise, S.D. (2012). Anti-arthritis and anti-inflammatory activity of *Xanthium srtumarium* L. ethanolic extract in Freund's complete adjuvant induced arthritis. *Biomedicine & Aging Pathology*, 2, 6–15.
- Patil, P., Prakash, T., Shivakumar, H., and Pal, S. (2009). Anti-ulcer and anti-secretory properties of the *Butea monosperma* (Lam) bark extract with relation to antioxidant studies. *Iranian Journal of Pharmacology and Therapeutics*, 8, 1-6.
- Pattison, D.J., Harrison, R.A., and Symmons, D.P. (2004). The role of diet in susceptibility to rheumatoid arthritis: a systematic review. *Journal of Rheumatology*, 31, 1310-9.
- Paval, J., Kaitheri, S.K., Potu, B.K., Govindan, S., Kumar, R.S., Narayanan, S.N., and Moorkoth, S. (2009). Anti-arthritis potential of the plant *Justicia gendarussa* Burm F. *Clinics*, 64, 357-360.
- Perdomo, H.A.G., Solarte, P.B., and Espana, P.P. (2015). Pathophysiology associated with forming urinary stones. *Revista Urologia Colombiana*, 15, 118-125.
- Phull, P.S., Green, C.I., and Jacyna, M.R. (1995). A radical view of the stomach: The role of Oxygen-derived free radical and anti-oxidants in gastroduodenal diseases. *European journal of gastroenterology & hepatology*, 7, 265-274.
- Pihan, G., Regillo, C., and Szabo, S. (1987). Free radicals and lipid peroxidation in ethanol- or aspirin-induced gastric mucosal injury. *Digestive diseases and sciences*, 32, 1395-1401.
- Prabha, T., Drababu, M., Goel, S., Agarwal, P.K., Singh, A., Joshi, V.K., and Goel, R.K. (2009). Effect of methanolic extract of *Pongamia pinnata* Linn seed on gastroduodenal ulceration and mucosal offensive and defensive factors in rats. *Indian Journal of Experimental Biology*, 47, 649-659.
- Prachi, C.N., Kumar, D., and Kasana, M.S. (2009). Medicinal Plants of Muzaffarnagar district used in treatment of Urinary tract and Kidney stones. *Indian Journal of Traditional Knowledge*, 8, 191-195.
- Prasad, S.K., Kumar, R., Patel, D.K., Sahu, A.N., and Hemalatha, S. (2012). Physicochemical standardization and evaluation of in-vitro antioxidant activity of *Aconitum heterophyllum* Wall. *Asian Pacific Journal of Tropical Biomedicine*. 2, S526-31.
- Preethi, K.C., Kuttan, G., and Kuttan, R. (2009). Anti-inflammatory activity of flower extract of *Calandulla officinalis* Linn. and its possible mechanism of action. *Indian Journal of Pharmacology*, 47, 113-120.
- Prieto, P., Pineda, M., and Aguilar, M. (1999). Spectrophotometric quantitation of antioxidant capacity through the formation of a phosphomolybdenum complex, Specific application to the determination of vitamin E. *Analytical Biochemistry*, 269, 337-341.

- Purushoth, P.T., Panneerselvam, P., Vijaykumar, R., Clement, Atlee, W., and Balasubramanian, S. (2012). Anti-inflammatory, anti arthritis and analgesic effect of ethanolic extract of whole plant of *Merremia Emarginata* Burm.F. *Central European Journal of Experimental Biology*, 1, 94- 99.
- Rajagopal, M.R. (2006). Pain - Basic Considerations. *Indian Journal of Anaesthesia*, 50, 331-334.
- Rajendran, R., and Krishna, K.E. (2010). Anti-Arthritic Activity of *Premna serratifolia* Linn., Wood against Adjuvant Induced Arthritis. *Avicenna Journal of Medical Biotechnology*, 2, 101- 106.
- Ramachandran, S., Vijaya, K.T.M., Saisandeep, V., Ramsai, K. and Dhanaraju, M.D. (2011). Antilithiatic Activity of Poly-Herbal Extracts on Ethylene glycol-Induced Lithiasis in Rats. *European Journal of Biological Sciences*, 3, 36-39.
- Ramasamy, S., Rajendran, V., Rangaraj, R., Chinnayan, V., Palanisamy, R., Prasannan, D., Selvaraj, J., and Pachamuthu, R.G. (2012). Effect of *Elaeocarpus sphaericus* in freund's complete adjuvant (FCA) induced rheumatoid arthritis in albino rats. *Indo-Global Research Journal of Pharmaceutical Sciences*, 2, 378-382.
- Ramesh, C., Das, K., Nandakumar, Radhakrishnan, Rangappa, R., Srinath, Viswanatha, Shastry, G.L., Rajesh, D., Murugananthan, G., and Talwar, S. (2010). Anti-urolithiatic activity of heart wood extract of *Cedrus deodara* in rats. *Journal of Complementary and Integrative Medicine*, 7, 1-9.
- Ramesh, C., Dharnendra, B.K., Einstien, J.W., Saleem, B.S., and Girish, K. (2010). Anti-urolithiatic activity of wood bark extracts of *Cassia fistula* in rats. *Journal of Pharmaceutical and Biomedical Sciences*, 2, 1-7.
- Ramesh, P.R., and Vijaya, C. (2012). Anti-diabetic and anti-arthritic potential of *Glycosmis pentaphylla* stem bark in FCA induced arthritis and Streptozotocin induced diabetic rats. *International Journal of Pharmacy and Bio Sciences*, 3, 328-336.
- Rao, C.H.V., Ojha, S.K., Radhakrishnan, K., Govindarajan, R., Rastogi, S., and Mehrotra, S. (2004). Antiulcer activity of *Utleria salicifolia* rhizome extract. *Journal of Ethnopharmacology*, 91, 243-49.
- Rao, J.K., Reddi, T.V.V.S., and Kumar, O.A. (2011). Ethnobotany of stem bark of certain plants of Visakhapatnam District, Andhra Pradesh. *Current Botany*, 2 1-6.
- Ratheesh, M., and Helen, A. (2007). Anti-inflammatory activity of *Ruta graveolens* Linn on carrageenan induced paw edema in wistar male rats. *African Journal of Biotechnology*, 6, 1209-1211.
- Ravi, V., Saleem, T.S.M., Patel, S.S., Raamamurthy, J., and Gauthaman, K. (2009). Anti-inflammatory effect of methanolic extract of *Solanum nigrum* Linn berries. *International Journal of Applied Research in Natural Products*, 2, 33-36.

- Reyes-Chilpa, R., Baggio, C.H., Alavez-Solano, D., Estrada-Muniz, E., Kauffman, F.C., and Sanchez, R.I. *et.al.*, (2006). Inhibition of H<sup>+</sup>K<sup>+</sup> -ATPase gastric activity by flavonoids, coumarins and xanthenes isolated from Mexican medicinal plants. *Journal of Ethnopharmacology*, 105, 167-72.
- Ricciotti, E., and Fitzgerald, G.A. (2011). Prostaglandins and Inflammation. *Arteriosclerosis, thrombosis and vascular biology*, 31, 986-1000.
- Rossi, D., and Zlotnik, A. (2000). The biology of chemokines and their receptors. *Annual Review of Immunology*, 18, 217-42.
- Rutter, P. (2005). Symptoms, Diagnosis and Treatment: A Guide for Pharmacists and Nurses. *Elsevier Churchill Livingstone*. Edinburgh.
- Sahoo, N., Manchikanti, P., and Dey, S. (2010). Herbal drugs: Standards and regulation. *Fitoterapia*, 81, 462-471.
- Sairam, K., Priyambada, S., Aryya, N.C., and Goel, R.K. (2003). Gastroduodenal ulcer protective activity of *Asparagus racemosus*: an experimental, biochemical and histological study. *Journal of Ethnopharmacology*, 86, 1-10.
- Sairam, K., Rao, C.V., Babu, D.M., and Goel, R.K. (2002). Antiulcerogenic activity of methanolic extract of *Emblica officinalis*. *Journal of Ethnopharmacology*, 82, 1-9.
- Samal, L., Pattanaik, A.K., Mishra, C., Maharana, B.R., Sarangi, L.N., and Baithalu, R.K. (2011). Nutritional strategies to prevent urolithiasis in animals. *Veterinary world*, 4, 142-144.
- Samuelsson, B., Dahlen, S.E., Lindgren, J.A., Rouzer, C.A., and Serhan, C.N. (1987). Leukotrienes and lipoxins: structures, biosynthesis, and biological effects. *Science* (Washington DC), 237, 1171-1176.
- Sander, L.E., Lorentz, A., Sellge, G., Coeffier, M., Neipp, M., Veres, T., Frieling, T., Meier, P.N., Manns, M.P., and Bischoff, S.C. (2006). Selective expression of histamine receptors H1R, H2R, and H4R, but not H3R, in the human intestinal tract. *Gut*, 55, 498-504.
- Sanyal, A.K., Mitra, P.K., and Goel, R.K. (1983). A modified method to estimate dissolved mucosubstances in gastric juice. *Indian Journal of Experimental Biology*, 21, 78-80.
- Sarkar, B.R., Rai, V.K., Kapoor, B., Sharma, S., Mohanty, J.P., Sarkar, D., Sharma, M.K., and Kar, A. (2011). Preliminary phytochemical screening and evaluation of anti-inflammatory activity of ethanolic extract of leaves of *Indigofera tinctoria* Linn. *International Journal of Research in Phytochemistry & Pharmacology*, 1, 55-58.
- Sass, J.E. (1940). Elements of Botanical Micro technique, *Mc Graw Hill Book Co*, Inc. New York and London, pp. 222.

- Sathyaa, M., Kokilavani, R., Ananta, T.K.S., Balakrishnan, A. (2011). Biopotency of *Acalypha indica* Linn on Membrane Bound ATPases and Marker Enzymes urolithic Rats. *Ancient Science of Life*, 31, 3-9.
- Satya, V., and Paridhavi, M. (2012). Ethano-botanical, phytochemical and pharmacological review of *Anamirta cocculus* (Linn.) Wight and Arn. *International Journal of Review in Life Sciences*, 2, 1-6.
- Schneider, W.C. (1957). Determination of nucleic acids in tissues by pentose analysis. In: *Methods of Enzymology*, Academic Press. New York, Vol. 3, pp.680-684.
- Sean, A.P., and Darren, T.B. (2005). Recurrent Kidney Stones. *The Canadian Journal of Diagnosis*, 97-101.
- Sebastin, J., Holger, T., Thomas, K., Melanie, N.L., and Armin, S. (2009). Pentacyclic triterpene distribution in various plants-Rich sources for a new group of multi-potent plant extract. *Molecules*, 14, 2016-2031.
- Sedlak, J., and Lindsay, R.H. (1968). Estimation of total protein bound and non protein sulfhydryl groups in tissues with Ellman's reagent. *Analytical Biochemistry*, 25, 192-205.
- Sekhar, P.C., Lakshmi, D.K.M., Rao, E.V., and Rao, D.V. (1985). Chemical constituents of the flowers of *Aganosma caryophyllata*. *Fitoterapia*, 56, 174.
- Selvam, R., Kalaiselvi, P., Govindaraj, A., Balamurugan, V., and Sathish, A.S. (2001). Effect of *Aerva zanzata* flowers extract and vediuppuchunnam on the urinary risk factors of calcium oxalate urolithiasis during experimental hyperoxaluria. *Pharmacological Research*, 43, 89-93.
- Sen, S., Chakraborty, R., De, B., and Mazumder, J. (2009). Plants and phytochemicals for peptic ulcer: An overview. *Pharmacognosy Review*, 3, 270-279.
- Sengar, N., Joshi, A., Prasad, S.K., and Hemalatha, S. (2015). Anti-inflammatory, analgesic and anti-pyretic activities of standardized root extract of *Jasminum sambac*. *Journal of Ethnopharmacology*, 160, 140-148.
- Sengupta, M., Mondal, P., Saha, D.M., Paul, S., and Gupta, M. (2013). Evaluation of anti-ulcer activity of aqueous extract of black cumin seeds (*Nigella sativa*) on experimental albino rats. *Journal of Drug Delivery & Therapeutics*, 3, 25-28.
- Sharma, J.N., Sharma, J.N., and Arora, R.B. (1973). Arthritis in ancient Indian literature. *International journal of health science*, 8, 37-42.
- Sharma, N., Tanwer, B.S., and Vijayvergia, R. (2011). Study of medicinal plants in Aravali regions of Rajasthan for treatment of kidney stone and urinary tract troubles. *International Journal of PharmTech Research*, 3, 110-113.

## References

- Sharma, V., and Rajani, G.P. (2011). Evaluation of *Caesalpinia pulcherrima* Linn. for anti-inflammatory and antiulcer activities. *Indian Journal of Pharmacology*, 43, 168–171.
- Shay, M., Komarov, S.A., Fels, S.S., Meranze, D., Gruenstein, M., and Siple, H. (1945). A simple method for the uniform production of gastric ulceration in the rat. *Gastroenterology*, 5, 43-61.
- Shettar, A.K., Kotresha, K., Kaliwal, B.B., and Vedamurthy, A.B. (2015). Evaluation of in-vitro antioxidant and anti-inflammatory activity of *Ximenia Americana*. *Asian Pacific Journal of Tropical Disease*, 5, 918-923.
- Shibata, M., Ohkubo, T., Takahashi, H., and Inoki, R. (1989). Modified formalin test: characteristic biphasic pain response. *Pain*, 38, 347-352.
- Shinde, U., Phadke, A., Nair, A., Mungantiwar, A., Dikshit, V., and Saraf, M. (1999). Studies on the anti-inflammatory and analgesic activity of *Cedrus deodara* (Roxb.) Loud. wood oil. *Journal of Ethnopharmacology*, 65, 21-27.
- Shokunbi, O., and Odetola, A. (2008). Gastroprotective and antioxidant activities of *Phyllanthus amarus* extracts on absolute ethanol induced ulcer in albino rats. *J. Med. Plants Res*, 2, 261-267.
- Siddique, R.A.H. (2014). Prevalence of Peptic Ulcer Disease among the Patients with Abdominal Pain Attending the Department of Medicine in Dhaka Medical College Hospital, Bangladesh. *IOSR-Journal of Dental and Medical Sciences*, 13, 5-20.
- Sindhu, R.K., Vasudeva., N. and Sharma, S.K. (2010). Pharmacognostical and preliminary phytochemical investigations on *Verbesina encelioides* benth. Roots. *Journal of Herbal Medicine and Toxicology*, 4, 113-118.
- Singh, A.P., (2007). *Didymocarpus pedicellata*: The Lithontriptic Ethnomedicine. *Ethnobotanical Leaflets*, 11, 73-75.
- Singh, G.K., and Kumar, V. (2011). Acute and sub-chronic toxicity study of standardized extract of *Fumaria indica* in rodents. *Journal of Ethnopharmacology*, 134, 992–95.
- Singh, K., Kaur, R., Singh, S., Bajwa, B.S., and Prasad, D.N. (2013). Anti-inflammatory Activity of *Barleria prionitis* Linn. *Journal of Natural Remedies*, 13,13.
- Singh, K.B., and Sailo, S. (2013). Understanding epidemiology and etiologic factors of urolithiasis: an overview. *Science Vision*, 13, 169-174.
- Singh, R.G., Behura, S.K., and Kumar, R. (2010). Litholytic Property of Kulattha (*Dolichous biflorus*) vs Potassium Citrate in Renal Calculus Disease: A Comparative Study. *Journal of the Association of Physician of India*, 58, 287.
- Sivamani, S., Joseph, B., and Kar, B. (2014). Anti-inflammatory activity of *Withania somnifera* leaf extract in stainless steel implant induced inflammation in adult zebrafish. *Journal of Genetic Engineering and Biotechnology*, 12, 1–6.

- Sizova, L. (2008). Approaches to the treatment of early rheumatoid arthritis with disease-modifying antirheumatic drugs. *British Journal of Clinical Pharmacology*, 66, 173–178.
- Sofidiya, M.O., Imeh, E., Eeani, C., Aigbe, F.R., and Akindele, A.J. (2014). Antinociceptive and anti-inflammatory activities of ethanolic extract of *Alafia barteri*. *Brazilian Journal of Pharmacognosy*, 24, 348-354.
- Soundararajan, P., Mahesh, R., Ramesh, T., and Begum, V.H. (2006). Effect of *Aerva Lanata* on calcium oxalate urolithiasis in rats. *Indian Journal of Experimental Biology*, 44, 981-986.
- Spector, T.D. (1990). Rheumatoid arthritis. *Rheum Dis Clin North Am*, 16, 513-537.
- Sreejayan, N., and Rao, M.N.A. (1997). Nitric oxide scavenging by curcuminoids. *Journal of Pharmacy and Pharmacology*, 49, 105-7.
- Srikanta, B.M., Siddaraju, M.N., and Dharmesh, S.M. (2007). A novel phenol-bound pectic polysaccharide from *Decalepis hamiltonii* with multi-step ulcer preventive activity. *World Journal of Gastroenterology*, 13, 5196-5207.
- SriRamana, K., Lakshmi, D.K.M., and Rao, D.V. (1985). Crystalline components of the leaves of *Aganosma caryophyllata*. *Indian Journal of Pharmaceutical Science*, 47, 165-6.
- Stankov, S.V. (2012). Definition of Inflammation, Causes of Inflammation and Possible Anti-inflammatory Strategies. *The Open Inflammation Journal*, 5, 1-9.
- Stolt, P., Bengtsson, C., Nordmark, B., Lindblad, S., Lundberg, I., Klareskog, L., and Alfredsson, L. (2003). Quantification of the influence of cigarette smoking on rheumatoid arthritis: Results from a population based case-control study, using incident cases. *Annals of the Rheumatic Diseases*, 62, 835-841.
- Sumbul, S., Ahmad, M.A., Asif, M., and Akhtar, M. (2011). Role of phenolic compounds in peptic ulcer: An overview. *Journal of Pharmacy and Bioallied Sciences*, 3, 361-67.
- Swingle, K.F., and Shideman, F.E. (1972). Phases of the inflammatory response to subcutaneous implantation of a cotton pellet and their modification by certain anti-inflammatory agents. *Journal of Pharmacology and Experimental Therapeutics*, 185, 226-234.
- Szabo, S., Folkman, J., Vattay, P., Morales, R.E., Pinkus, G.S., and Kato, K. (1994). Accelerated healing of duodenal ulcers by oral administration of a mutein of basic fibroblast growth factor in rats. *Gastroenterology*, 106, 1106-1111.
- Szabo, S., Vincze, A., Sandor, Z., Jadus, M., Gombos, Z., Pedram, A., Levin, E., Hagar, J., and Iaquinto, G. (1998). Vascular approach to gastroduodenal ulceration.

- New studies with endothelins and VEGF. *Digestive Diseases and Sciences*, 43, 40-45.
- Tatiya, A.U., and Saluja, A.K. (2011). Further studies on membrane stabilizing, anti-inflammatory and FCA induced arthritic activity of various fractions of bark of *Machilus macrantha* in rats. *Brazilian Journal of Pharmacognosy*, 21, 1052-1064.
- Teather, L.A., Magusson, J.E., and Wurtman, R.J. (2002). Platelet-activating factor antagonists decrease the inflammatory nociceptive response in rats. *Psychopharmacology*, 163, 430-433.
- Terlecki, R.P., and Triest, J.A. (2007). A contemporary evaluation of the auditory hazard of extracorporeal shock wave lithotripsy. *Urology*, 70, 898-899.
- Thamotharan, G., Sekar, G., Ganesh, T., Sen, S., Chakraborty, R., and Senthil, K.N. (2010). Antiulcerogenic effects of *Lantana camara* linn. leaves on *in vivo* test models in rats. *Asian Journal of Pharmaceutical and Clinical Research*, 3, 57-60.
- Trease, G.E., and Evans, W.C. (2002). *Pharmacognosy*. 15th Edition, W.B. Saunders Company Ltd., London.
- Trinchieri, A. (2008). Epidemiology of urolithiasis: an update. *Clinical Cases in Mineral and Bone Metabolism*, 5, 101-106.
- Tripathy, S., Sahoo, S.P., Pradhan, D., Sahoo, S., and Satapathy, D.K. (2009). Evaluation of anti arthritic potential of *Hybanthus enneaspermus*. *African Journal of Pharmacy and Pharmacology*, 3, 611-614.
- Tugcu, V., Ozbek, E., Aras, B., Arisan, S., Caskurlu, T., and Tasci, A.I. (2007). Manganese superoxide dismutase (Mn-SOD) gene polymorphisms in urolithiasis. *Urology Research*, 5, 219-224.
- Urade, Y., and Hayaishi, O. (1999). Prostaglandin D2 and sleep regulation. *Biochimica et Biophysica Acta*, 1436, 606-615.
- Vaananen, P.M., Meddings, J.B., and Wallace, J.L. (1991). Role of oxygen-derived free radicals in indomethacin-induced gastric injury. *American Journal of Physiology-Gastrointestinal and Liver Physiology*, 261, G470-G475.
- Vaidya, B.D., and Kashyap, L. (2000). *Materia Medica of Ayurveda*. Concept publishing company, New Delhi, India.
- Varalakshmi, P., Shamila, Y., and Latha, E. (1990). Effect of *Crataeva nurvala* in experimental urolithiasis. *Journal of Ethnopharmacology*, 28, 313-321.
- Vasconcelos, M.A., Royo, V.A., Ferreira, D.S., Crotti, A.E., Andrade silva, M.L., Carvalho, J.C., Bastos, J.K., and Cunha, W.R. (2006). In vivo analgesic and anti-inflammatory activities of ursolic acid and oleanolic acid from *Miconia albicans*

(Melastomataceae). *Zeitschrift fur Naturforschung C*, 61, 477-482.

Vedavathy, S. (2004). An Introduction to the Tamil Siddhas. Folk medicinal wisdom of chittoor district, Andhra Pradesh. *Indian Folklife*, 2-20.

Vemuri, H., Namburu, S.L., Surya, T.G., Divya, S., Koganti, B., and Prasad, K.V.S.R.G. (2012). Antiurolithiatic and antioxidant activities of *Cansjera rheedii*. *Journal of Advances in Drug Research*, 2, 1-12.

Vickers, A., and Zollman, C. (1999). ABC of complementary medicine: herbal medicine. *British Medical Journal*, 319, 1050 -1053.

Vilcek, J., and Le, J. (1994). Immunology of cytokines: An introduction. In: The Cytokine Handbook. Editor: Thomson A. London: *Academic Press Limited*, pp. 1-19.

Vittalrao, A.M., Shanbhag, T., Kumari, M., Bairy, K.L., and Shenoy, S. (2011). Evaluation of anti-inflammatory and analgesic activity of alcoholic extract of *Kaempferia galangal* in rats. *Indian Journal of Physiology and Pharmacology*, 55, 13-24.

Vos, J.G., and Van, L.H. (1998). Experimental studies on immune suppression: how do they predict for man. *Toxicology*, 129, 13-26.

Vyas, B.A., Vyas, R.B., Joshi, S.V., and Santani, D.D. (2011). Antiurolithiatic activity of whole-plant hydroalcoholic extract of *Pergularia daemia* in rats. *Journal of young pharmacists*, 3, 36-40.

Vyas, N., and Argal, A. (2012). Antiurolithiatic activity of extract and oleanolic acid isolated from the roots of *Lantana camara*. *Phytopharmacology*, 3, 326-334.

Wagner, H.S., and Bladt. (1996). Plant Drug Analysis, 2nd ed. *Springer-Verlog*, Berlin/ Heidelberg, Germany.

Wallace, J.L. (2001). Mechanisms of protection and healing: current knowledge and future research. *American Journal of Medicine*, 110, 19-23.

Wallis, T.E. (1965). Analytical Microscopy: Its Aims and Methods in Relation to Foods, Water, Spices and Drugs, 3rd ed. *J and A Churchill. Ltd.* London, U.K, pp.188.

Walters, D.C. (1986). Stress as a principal cause of calcium oxalate urolithiasis. *International Urology and Nephrology*, 18, 271-275.

Wang, H.H., Lin, K.J., Chu, S.H., Chen, H.W., Chiang, Y.J., and Lin, P.H., *et al.* (2014). The impact of climate factors on the prevalence of urolithiasis in Northern Taiwan. *Biomedical Journal*, 37, 24.

Wasman, S.Q., Mahmood, A.A., Chua, L.S., Alshawsh, M.A., and Hamdan, S. (2011). Antioxidant and gastroprotective activities of *Andrographis paniculata*

## References

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- (Hempedu Bumi) in Sprague dawley rats. *Indian Journal of Experimental Biology*, 49, 767-772.
- Wells, K.A. (2000). Nephrolithiasis with unusual initial symptoms. *Journal of Manipulative and Physiological Therapeutics*, 23, 196-201.
- Wittel,U.A., Goel,A., Varshney,G.C., and Batra,S.K. (2001). Mucin antibodies - new tools in diagnosis and therapy of cancer. *Frontiers in Bioscience*, 6, D1296-D1310.
- Wood, K., Gorbachinsky, I., and Gutierrez, J. (2014). Medical expulsive therapy. *Indian Journal of Urology*, 30, 60.
- [www.rheumatology.org](http://www.rheumatology.org).
- Yadav, R.D., Jain, S.K., Alok, S., Mahor, A., Bharti, J.P., and Jaiswal, M. (2011). Herbal plants used in the treatment of urolithiasis: a review. *International Journal of Pharmaceutical Science and Research*, 2, 1412-1420.
- Yemm, E.W., and Willis, A.J. (1954). The estimation of carbohydrates in plant extracts by anthrone. *Biochemistry Journal*, 57, 508 514.
- Yildirim, A., Mavi, A., and Kara, A. (2001). Determination of antioxidant and antimicrobial activities of *Rumex crispus* L. extracts. *Journal of Agricultural and Food Chemistry*, 49, 4083 4089.
- Yoshikawa, M., Morikawa, T., Nagatomo, N.L.A., Li, X., and Matsuda, H. (2005). Bioactive saponins and glycosides. XXIII. Triterpene saponins with gastroprotective effect from the seeds of *Camellia sinensis* theasaponins E3, E4, E5, E6 and E7. *Chemical and Pharmaceutical Bulletin*, 53, 1559-1564.
- Yoshikawa, T., Naito, Y., Kishi, A., Tomii, T., Kaneko, T., Iinuma, S., Ichikawa, H., Yasuda, M., Takahashi, S., and Kondo, M. (1993). Role of active oxygen, lipid peroxidation and antioxidants in the pathogenesis of gastric mucosal injury induced by indomethacin in rats. *Gut*, 34, 732-737.
- Young, H.Y., Luob, Y.L., Cheng, H.Y., Hsieh, W.C., Liao, J.C., and Peng, W.H. (2005). Analgesic and anti-inflammatory activities of [6]-gingerol. *Journal of Ethanopharmacology*, 96, 207-210.
- Zeeyauddin, K., Narsu, M.L., Abid, M., and Ibrahim, M. (2011). Evaluation of antiulcer activity of *Boswellia serrata* bark extracts using aspirin induced ulcer model in albino rats. *Journal of Medical and Allied Sciences*, 1, 14-20.
- Zhang, L.L., Wei, W., Yan, S.X., Hu, X.Y., and Sun, W.Y. (2004). Therapeutic effects of glucosides of *Cheanomeles speciosa* on collagen-induced arthritis in mice. *Acta Pharmacologica Sinica*, 25, 1495-1501.
- Zheng, C.J., Zhao, X.X., Ai, H.W., Lin, B., Han, T., Jiang, Y.P., Xing, X., Qin, L.P. (2014). Therapeutic effects of standardized *Vitex negundo* seeds extract on complete Freund's adjuvant induced arthritis in rats. *Phytomedicine*, 21, 838-846.

## PUBLICATIONS

### Research Papers:

1. **Deepali Pandey**, Apurva Joshi & S. Hemalatha. Quality Control Standardization and *In-Vitro* Antioxidant Activity of *Aganosma dichotoma* K.Schum Root. *Pharmacognosy Journal* 2015, 7(1): 74-82 (**Scopus indexed**).
2. **Deepali Pandey**, Apurva Joshi, S. Hemalatha. Anti-ulcer study of standardized ethanol root extract of *Aganosma dichotoma* and isolated ursolic acid. *International Journal of Pharmacy and Pharmaceutical Sciences*, 2017, 9(2): 72-80. (**Scopus indexed**)
3. **Deepali Pandey**, Shardendu Mishra and S. Hemalatha. Anti urolithic activity of different fractions of *Aganosma dichotoma* as a folk medicine of Andhra Pradesh. **Accepted** in *International Journal of Green Pharmacy*. (**Scopus indexed**)
4. **Deepali Pandey** Apurva Joshi, Shardendu Mishra, K. Sairam and S. Hemalatha. Anti nociceptive, anti inflammatory and anti arthritic activity of ethanol root extract and fraction of *Aganosma dichotoma*. *Indian Journal of Experimental Biology* (**Under Review**). (**SCI Extended and Scopus indexed**).

### Poster Presentation:

1. **Deepali Pandey** and S. Hemalatha. Antiurolithic activity of ethanol root extract of *Aganosma dichotoma* as a folk medicine of Andhra Pradesh, National Seminar on Contemporary Challenges in Implementation of CPCSEA in Research, held at S N Medical College Agra, 4-March-2017.
2. **Deepali Pandey**, Apurva Joshi and Siva Hemalatha. Gastroprotective study of the ethanolic root extract of *Aganosma dichotoma*, International Conference on natural products 24-25 March 2015, Johor Bahru, Malaysia.
3. **Deepali Pandey** and Siva Hemalatha. Toxicity study of ethanolic extract of *Aganosma dichotoma*” in 6th NIPER (RBL)-CSIR-CDRI “Symposium on Current Scenario in Drug Discovery and Development” held at CDRI, Lucknow, 2014.

**BANARAS HINDU UNIVERSITY**  
**FACULTY OF MEDICINE**  
**INSTITUTE OF MEDICAL SCIENCES**

No. Dean/2015/CAEC/983

Dated: 19.01.15

The Head

Department of Pharmaceutics

Indian Institute of Technology

Banaras Hindu University

Dear Sir

A meeting of the Central Animal Ethical Committee of the University was held on 19.01.2015 at 3.00 PM in the Chamber of the Dean, Faculty of Medicine, I.M.S. for animal ethical clearance of the proposal submitted by the following.

Name of the Student : Mrs. Deepali Pandey
Title: Anti-ulcer, anti-arthritic and anti-urolithic activity of <i>Aganosma dichotoma</i>
Ethical Observation-
Remarks: <b>The synopsis is approved by the Central Animal Ethical Committee of the University</b>

This is for your information and necessary action at your end.

Yours sincerely



**(R.K.GOEL)**

DEAN

&

CHAIRMAN

CENTRAL ANIMAL ETHICAL COMMITTEE OF THE UNIVERSITY

**SRI VENKATESWARA UNIVERSITY**  
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Date:- 25-04-2013

**AUTHENTICATION CERTIFICATE**

I hereby certify that the following plant species for pharmacognostical / pharmaceutical / pharmacological / phytochemical investigation research work is identified and their botanical name and family name is given.

Botanical Name	Family
<i>Aganosma dichotoma</i> (Roth) Schum.	Apocynaceae

Authenticated by

*K. Madhava Chetty*  
(Dr. K. MADHAVA CHETTY)

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