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Acacia catechu Willd extract: A nutraceutical approach to gastrointestinal pathologies

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Gastro-intestinal infections constitute important emerging and re-emerging infective worldwide diseases. They are mostly endemic and show a heterogeneous aetiology. Most water-borne diseases caused by microorganisms induce diarrhoea and determine about 5 million deaths per year. The research on anti-diarrheal tools should be focused on the evaluation of substances and chemically charachterized phytocomplexes able to affect intestinal motility and to exert a prebiotic action. Several plants, such as *Castanea sativa* Mill., *Sanseviera liberica* Gerome & Labroy, have been shown to inhibit gut peristalsis, through several mechanisms. Furthermore, disparate classes of natural compounds including hydrolysable tannins and flavonoids, restore intestinal functionality, affecting different molecular networks influencing each other's. *Acacia catechu* Willd extract (ACE) has been used in Indian Traditional Medicine to manage several diseases including diarrhoea and other gastrointestinal ailments. This extract was shown to contain high amounts of flavonoids, in particular flavan-3-ols. Furthermore, in vitro biological assays were exerted, using tissues from guinea pigs, to assess ACE effects towards induced and spontaneous intestinal smooth muscle contractility. The results demonstrated that ACE reducecs spontaneous and induced colon and ileal smooth muscle contractility via inhibiting muscarinic and histaminergic receptors. Also ACE effects against several pathogenic and non pathogenic bacteria were tested, showing a selective antibacterial activity towards pathogenic strains including, *Staphylococcus aureus*, Gram-negative *Escherichia coli, Salmonella spp., Campilobacter*, without inhibiting. These findings suggest that Acacia may represent a nutraceutical option to manage diarrheal infectious and non infectious disesases.

Biography

Matteo Micucci has completed his PhD from Bologna University and continues his research focused on Medicinal Chemisrty and Nutraceuticals at Department of Pharmacy and Biotechnology, University of Bologna. He had spent three months period, as visiting PhD Student, in the Research Laboratory of Medicinal Chemistry of De Montfort University (DMU), Leicester, UK. He has published 19 papers in reputed journals and is Science Adviser in the field of Nutraceuticals, Alternative and Complementary Medicines, at Segreteria Particolare of a Senator of the Italian Republic, from October 12th, 2015 till date.

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