

Bioactive withanolides from *Withania obtusifolia*

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Natural products continue to be an important source of unique and new chemical entities in drug research and development. Eight withanolides were isolated from the leaves of *Withania obtusifolia* Taeckh. (Solanaceae). This Jordanian species is closely related to *Withania somnifera*, the most important and most studied of *Withania* species known as Ashwagandha or Indian Ginseng. Ethanolic extract was purified using different chromatographic techniques (open silica gel columns, dextran columns, preparative TLC and semi-preparative HPLC).

Of the isolated compounds, two were new [obtusifonolide (1) and 27-glucoisowithaferin A (2)], four were new to the species [6α -chloro- 5β -hydroxy withaferin A (3), isowithanone (4), 3-ethoxy-2,3-dihydroxy withaferin A (5), and daturaturin A (6)], and two were reported previously from the same species [withaferin A (7) and 4α , 27-dihydroxy -1-oxo- 5β , 6β -epoxy withaferin A (8)]. The structures were elucidated using a set of spectroscopic and spectrometric techniques principally: MS (APCI and ESI), 1D-NMR (^1H and ^{13}C) and 2D-NMR (COSY, HMBC, HMQC and NOESY). Compounds (1-8) were evaluated for cytotoxicity against a human cancer cell panel and for antimicrobial activity in an array of bacteria and fungi. In the cell lines tested, compounds 7 and 8 were the most potent with IC_{50} values ranging from 0.30 to 1.7 μM .

Biography

Chiraz Soumia Amrine is an Algerian lecturer and researcher at the University of Saad Dahleb-Blida (Algeria). She has received her M.Sc. degree in Natural Products Chemistry from Jordan University of science and technology (Jordan), her great interest in phytochemistry and bioactive natural compounds has let her to be part of some researches on medicinal and aromatic plants.

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Pharmacognostical tools for identification of adulterants in medicinal plant materials

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Adulteration is to make impure or inferior by adding foreign substances to the drug part which does not have claimed therapeutic effect but may be similar in appearance with the original drug. Adulteration is common in herbal drug industry due to various reasons such as less supply of raw materials with increasing demand, certain plants used in Ayurveda are very rare but demand is high, certain plants take so many years to mature and produce the specified drug part, certain plants mentioned in classical text of Ayurveda are getting extinct day by day but demand is high, Ayurveda mentioned substitutes when the original drug is absent but such substitutes have similar appearance with plants used as adulterants etc. Small and medium scale Pharmaceutical companies are unable to use advanced techniques to determine the quality and purity of crude drugs. Pharmacognostical analysis dealing with identification of crude drugs used in medicine by using morphological, sensory, microscopical, histo-chemical and other chemical analysis etc. which is highly useful as a cost effective and reliable method for identification of adulterants in herbal drug industry.

Methodology was established to identify correct biological sources and their possible adulterants used in Ayurveda by various pharmacognostical methods with the help of standard protocols, floras, books and monographs on medicinal plant materials.

Most important part of this technique is that cost effectiveness and easy to conduct with a limited laboratory facilities. Author will focus various aspects of medicinal plant raw materials adulteration and detection techniques by the presentation that will help as a reference useful for herbal industries, researchers, Ayurvedic doctors etc. to use quality raw materials for medicinal preparations.

Biography

Chandima Wijayasiriwardena has completed his Ph.D. at the age of 32 years from Gujarat Ayurved University, Jamnagar, India and now he is one of the Senior Research Scientist attached to Ceylon Institute of Scientific and Industrial Research a premier Governmental organization dealing with Technology development and transfer for the economic and industrial growth of the country which is the only centre for excellence in Science and Technology in the country. Also the institute has undertaken several projects to improve quality control and standardization of Traditional Medical Preparations. Author has published more than 23 papers in reputed journals and symposia's serving as an evaluator for herbal raw materials for the department of Ayurveda, Sri Lanka. He is a visiting lecturer for the Siddha Medical faculty, Eastern University of Sri Lanka. He has also contributed for the preparation of powder microscopy book for the detection of 100 medicinal plant materials by Gujarat Ayurved University, Jamnagar, India.

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