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preparations. During the course of time several medicinal plants used in traditional medicine were subjected to chemical screening and the active principles were isolated and characterized. Periodical surveys conducted in USA indicated that 40% of the prescriptions contained products of natural origin. Although several chemicals were introduced as drugs from time to time, the contribution from medicinal plants was found to be very low (about 2%). Some of the important natural products which were introduced as drugs for the treatment of various ailments are reserpine, vinblastine, vincristine, forskolin, paclitaxel, artemisinin etc. Despite the fact that many pharmaceuticals of natural origin have come out as drugs, there are no drugs available for the treatment of various diseases such as rheumatoid arthritis, AIDS, several infectious diseases etc. Thus search for new chemical drugs will relentlessly be continued. Hopefully medicinal plants will provide the solution for these diseases.

O-12

Standardisation and quality control in homoeopathic medicinal plants

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Abstract

Standardisation of medicinal plants used in homoeopathy ensures uniformity. The quality control of homoeopathic medicine requires the use of some other important quality control methods as well which will be discussed.

O-13

Plant extract mediated modulation of TNF- α in BAL of mice exposed to Si

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Abstract

Millions of individuals worldwide suffer from interstitial pulmonary fibrosis which is known to cause stiff lung and shortness of breath. Other features of this disease are epithelial and interstitial cell hyperplasia and extracellular matrix deposition. Several cytokines like interleukin-1, tumor necrosis factor- α (TNF- α), platelet derived growth factor, basic fibroblast growth factor, epidermal growth factor and transforming growth factor- β are found associated with it. Of these, TNF- α plays an important role. Despite a fairly complete understanding of the clinical and pathological features of the disease process, no effective therapeutic and preventive approaches are available. The global concern over pulmonary fibrosis drove us to search for effective therapeutic and preventive measures to control the disease. To this effect, screening of plant extracts that can help prevent the initial stages of lung fibrosis was undertaken. Water soluble ethanol extract of leaves of two plant species ITRCbnp-101 (Fam Oleaceae) and ITRCbnp-102 (Fam Meliaceae) were studied. Mice pretreated with these extracts could abrogate the formation of oedema, congestion and accumulation of nucleated cells in the interstitial tissue leading to thickening of alveolar septa in mouse exposed to fibrogenic silica particles. In contrast, mouse untreated with leaf extract but exposed to Si particles showed these features in the lungs. The TNF- α level in the broncho-alveolar lavage (BAL) was evaluated by solid phase sandwich ELISA. Interestingly, the TNF- α in BAL of leaf extract pretreated and Si particles exposed mice was significantly low in comparison to Si exposed control mice. These preliminary findings suggest the possible use of ITRCbnp-101 and ITRCbnp-102 leaf extracts for prevention of the onset of xenobiotic induced pulmonary fibrosis.

O-14

Termite control with medicinal plant products

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Abstract

Termites are structurally most closely related to cockroaches but are social insects comprising the order Isoptera. They are serious biodegrading agents affecting buildings and other human dwellings. The use of toxic synthetic pesticides in

controlling termites is now a global concern. In order to minimize their use, the attention of scientists is now focussed on integrated termite management (ITM). Use of medicinal plant extractives having termite-resistant properties is a promising alternative.

The plants are storehouse of secondary metabolites such as alkaloids, terpenoids, steroids, polyacetylenes, unsaturated isobutylamides and retenoids. They may act as toxicants, repellants and/or behaviour modifiers. Many plants have evolved a wide range of defensive mechanism to protect themselves from termites. Therefore a large number of formulations using plant extracts have been developed around the world to control termites in recent past. The paper gives detailed survey of literature on research carried out in this direction.

The stem bark, leaves, seeds and flowers of many plants of Himalayan region were extracted in polar and non-polar solvents. The extracts were studied for their behaviour against termites and active compounds present in such extracts were identified. Processes developed for the preparation of plant extracts having anti-termite properties and termite-resistant formulations prepared from such extracts are detailed in this paper.

O-15

Insecticidal, antifeedant and growth inhibitory activities of essential oils of some medicinal plants

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Abstract

Insecticidal, antifeedant and growth inhibitory activities of *Callistemon lanceolatus*, *Cymbopogon winterianus*, *Eucalyptus* spp., *Lantana camara*, *Nerium oleander*, *Ocimum basillicum*, *Ocimum sanctum* and *Vitex negundo* leaf oils were studied against third instar larvae of *Spodoptera litura*. The oils of leaves of these plants were extracted by steam distillation method. Various concentrations (2, 5 and 10%) were prepared from the oils using acetone as diluent. The cauliflower leaves were dipped for 5 seconds in the respective concentrations having 2 to 3 drops of twin-80 as sticker. The treated leaves were then dried in air and put in 6 x 6 inches petridishes. In each petridish 5 larvae were released and kept in incubator at 28°C. Each treatment was replicated thrice. After 2 h, % leaf area consumed by the larvae was recorded. Under no choice assay treatment, no feeding was observed even at 2% concentration in case of *O. sanctum* oil. However in other essential oils except that of *Eucalyptus* sp., the activity observed was at par with control. At 5% concentration *C. winterianus*, *Eucalyptus* sp. and *O. basillicum* oils also reduced consumption of leaves but at 10% concentration no feeding of *C. winterianus* and *O. basillicum* treated leaves was observed. Essential oils of other plants also afforded reduced feeding at this concentration as compared to control. Under choice assay treatment, feeding was recorded in *Eucalyptus* sp. and *L. camara* oil treatments. Twenty percent larval mortality was also recorded in *O. sanctum* at 10% concentration after 48 h of exposure. Reduced feeding resulted in significant weight losses of larvae and pupae. The larval period was increased and adult emergence reduced.

O-16

Antimutagenic studies of polyphenolic extracts from medicinal plant *Terminalia bellirica*

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Abstract

Terminalia bellirica (behera) is an important medicinal plant described in the Ayurveda. The fruits of *T. bellirica* are used in various ailments like piles, dropsy, diarrhoea, biliousness, headache, dyspepsia, ophthalmia, enlarged liver and ascites. Phenolic compounds isolated from fruits of *T. bellirica* possess antimutagenic potential, and are known to be rich in triterpenoids and related secondary metabolites. The benzene, chloroform and acetone extracts of *T. bellirica* were examined by co-incubation and pre-incubation for their antimutagenic effects against direct-acting mutagens, sodium azide and 4-nitro-