Benefits of Thin Layer Chromatography for the Pharmaceutica

Fingerprints for Isolating Biologically Active Materials in Indigenous Medicin

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Thin layer chromatography (TLC) offers a rapid, inexpensive and reproducible method for screening of medicinal is such a plethora of plant material to still evaluate and test for biological activity and hopefully useful medicinal p material continues to play a role in the identification of lead compounds for the pharmaceutical industry. As the c pharmaceutical companies begin to "run dry" of patent protected blockbuster compounds there is once again a r medicinal chemistry for leads in novel structure chemistries.

Newer compounds must be found for the treatment of bacterial infections which have developed methods for ge virtually all antibiotic chemotherapy. Vaccines have been effective against some bacterial antigens, but no vaccin found against any of the major parasitic infections. The rush is on once again for evaluating medicinal plant chem

One place which is suddenly receiving much attention is sub Saharan Africa. This region of Africa contains 60,000 is roughly ¼ of the world's species of plants. People have lived longer in sub Saharan Africa than anywhere else c millions of years hominid species through trial and error identified medicinal plants with remarkable biological act and cultural barriers the experience with these remarkable plants has been ignored. Newer chemistry techniques identification of potentially useful medical compounds. . TLC is the ideal tool for finding these compounds especia Aluminas.

An example of a native medicinal plant being studied in Africa is Siphonochiles aethiopicum. This is also known as ginger. It is widely distributed in tropical Africa, from South Africa northwards to Zambia, Malawi, Ethiopia, West plant part used is the rhizome and the flesh roots. The product is available from commercial plantations and rapi production is possible. Utilization of DAI preparative TLC and then the use of DAI Dry Column Chromatography fo speeds up the process. The rhizomes and roots are harvested at the end of the growing season when the plants In traditional medicine a small piece of the rhizome is chewed. In Malawi traditional medicine belief is that the pla treatment of coughs, colds and asthma. The main traditional use of the rhizome by the Zulu people has been in t malaria and vulvovaginal, and mucocutaneous candidiasis.

Extracts of the rhizome have proven to have significant antibacterial activity against gram positive bacteria, but l anti-viral activity. The produce is rich in essential oil and contains more than 70 monoterpenoids and sesquiterpe cineole, cis-alloocinemene, alpha-terpineol and gemacrene B. The main furanoterpenoid, siphonochilone, represer oil.

To identify the biologically important compounds the rhizome material is ground and then extracted using water The solvents separate the compounds into polar, intermediate and non polar compounds. Then fingerprints are e biologically active compounds using TLC technology. Ideally it is suggested to first use two dimensional TLC for se compounds. The chemical fingerprint of TLC has been demonstrated to be an identification tool for traditional me

To date, there is little in the way of toxicity data. The LD50 brine shrimp toxicity assay is greater than 2000 ug/m line LD50 is 0.409 ug/ml.

It is hoped that recent experience with this compound will help to stimulate interest in many other important me indigenous people and which have heretofore not been fully examined or explored.

Similar use of TLC, (see DAI TLC applications), to create fingerprints for biologically important compounds is being indigenous plant materials from South America, Europe and Asia.

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