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New Caledonian Plants As A Source of Dengue Virus Inhibitors

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The dengue virus reached to epidemic proportion in all tropical and subtropical areas and even spread to some temperate regions. It is nowadays the most widespread and prevalent arthropod-borne viral disease of humans, affecting more than 50 million people each year. The virus group consists of 4 serotypes causing similar symptoms ranging from mild febrile illness to a life-threatening dengue hemorrhagic fever. Research for vaccine or antiviral treatments is now a priority for public health. Extracts of barks and leaves from different endemic plants of New Caledonia described in traditional Melanesian pharmacopeia as fever treatment, or with specific phytochemical interests were examined for their activity against dengue virus. The screening assay was made on the RNA polymerase part of NS5 enzyme, which is essential for the virus replication. This enzyme is specific of the virus and common to the four serotypes. Bioguided fractionation of the inhibitory extracts against dengue virus enzyme NS5, led us to the isolation of several pure compounds. Some of these compounds inhibit specifically the dengue polymerase, and not other viral polymerase. Furthermore, two of them are not cytotoxic and do inhibit the dengue replicon. This integrated strategy permit us to isolate new compounds with an antiviral potential.

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Silibinin Abolish the Enhanced Expression of Fibrosis-Related Molecules Caused by Hepatitis C Virus E2 Protein

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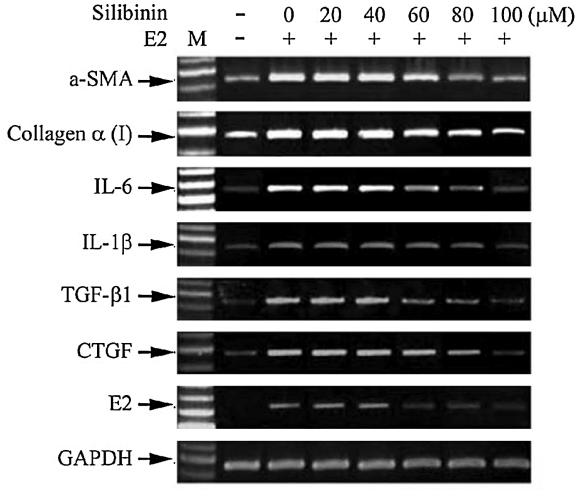
Chronic Hepatitis C virus (HCV) infection may lead to the liver fibrosis, cirrhosis and eventually hepatocellular carcinoma. The current standard-of-care for HCV infection is a long-term administration of pegIFNα and ribavirin with only approximately 50% response rate for genotype 1 infected patients while side effects of various severities and viral resistance may lead to treatment failure. Therefore, development of new or auxiliary remedies to improve response rate or alleviate side effects will be of great value. Our previous study indicated that E2 protein may involve in the process of hepatic fibrogenesis through an oxidative damage-related pathway. In this study, treatment with silibinin, a compounds extracted from herbs, was conducted on E2-expressing cells and RT-PCR analysis was performed to show that E2-enhanced expression of fibrosis-related molecules, including α-SMA, collagen α(I), TGF-beta1, connective tissue growth factor (CTGF), IL-6 and IL-1beta, MMP-2, were all abolished by a treatment with silibinin. Further studies demonstrated that silibinin inhibited α-SMA and collagen α(I) overexpression by regulating pathways involved Smad, p38-MAPK and AKT. Results from this study suggested that silibinin may possess inhibitory capability for the progression of liver fibrogenesis



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Antiherpes Activities of Some Medical Plants from the Lamiaceae

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Chloroform, ethanol, methanol and water extracts, derived from wild and *in vitro* propagated *Lamium album* L. and *Leonorus cardiaca* L. significantly blocked herpes simplex virus type 1 (HSV-1) and type 2 (HSV-2) replication in MDBK cells without apparent cytotoxicity. The chloroform extracts had most potent antiviral activity. The 50% effective doses (IC_{50}) of the chloroform extracts from native *L. cardiaca* were identically – 80 μg/ml. The inhibitory effects of the other extracts were similar or slight. The IC_{50} value on the in vitro extracts from *L. album* was 550 μg/ml and 467 μg/ml, respectively and on the in vivo extracts were 668 μg/ml and 780 μg/ml. The viral replications ware suppressed with 90% after addition of the chloroform extracts in maximal nontoxic concentrations (MNC). The methanol *in vitro* extract and chloroform *in vivo* extract suppressed extracellular HSV-1 above 90% – Δlog 4 and Δlog 1.5, respectively.

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