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IN VITRO EFFECTS OF AQUEOUS *FERULA ASSA-FOETIDA* EXTRACTS ON LEISHMANIA MAJOR PROMASTIGOTES

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The old traditional phytomedicine asafoetida, an oleo-gum-resin obtained from the roots of different *Ferula assa-foetida*, is used in different countries for various purposes. Asafoetida is not only used as a culinary spice but also traditionally used to treat various diseases, including asthma, gastrointestinal disorders, intestinal parasites, etc. This oleo-gum-resin has been known to possess antifungal, anti-diabetic, anti-inflammatory, anti-mutagenic and antiviral activities. A wide range of chemical compounds including sugars, sesquiterpene coumarins and polysulfides have been isolated from this plant [1]. Cutaneous leishmaniasis is the most common form of leishmaniasis. It is a skin infection caused by a single-celled parasite that is transmitted by sand fly bites. Cutaneous Leishmaniasis is major worldwide health problems. The drugs of choice for their treatment are still problematic in this case, and therefore there is an urgent need to discover new drugs with high activity and low side effects. Natural products have become a key source of new drugs in the last years. Advances in the research of natural products for the treatment of leishmaniasis have been recently reviewed.[2]In this study we want to evaluate, anti-Leishmanial activity of aqueous extracts of *Ferula assa-foetida*, *in vitro* promastigote stages of *L. major* (MRHO/IR/75/ER) were transferred to RPMI-1640 medium, supplemented with 10% fetal calf serum (FCS) and antibiotics then grown at 25±2°C. The IC₅₀ values (50% inhibitory concentrations) were determined; accordingly. All experiments were repeated in duplicate. Aqueous extracts of *Ferula assa-foetida* inhibited the growth of promastigote forms of *L. major in vitro* after 72 hour of incubation. IC₅₀ values of aqueous extracts of *Ferula assa-foetida* is 3.6µg/ml. The present results indicate that post training administration of different doses of aqueous extracts of *Ferula assa-foetida* attenuated number of *Leishmania major* promastigotes.

References

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EVALUATION OF FENNEL (*FOENICULUM VULGARE*) EXTRACTS ON TACHYZOITE OF *TOXOPLASMA GONDII* IN BALB/C MICE

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Fennel has been shown to contain antioxidant substances [1]. *Toxoplasma gondii* is one the most important apicomplexan parasite of humans and other warm-blooded animals. Current toxoplasmosis treatment for patients such as pregnant women is based on the administration of spiramycin or a drug combination as sulphadiazine-pyrimethamine-folinic acid (SPFA) in cases of confirmed fetal infection. However, these drugs are few tolerated and present many disadvantages due to their toxic effects to the host.[2]We have studied the effect of Fennel(aqueous – ethanol - acetone) extracts on tachyzoite of *Toxoplasma gondii* in female BALB/c mice. A total of 70BALB/c mice (control & experiment) were included, and 10000 *Toxoplasma* organisms of the RH strain *Toxoplasma gondii* were given intraperitoneally to each mouse. Fennel (Aqueous – ethanol - acetone) extracts was administered in 7 groups. All of the experimental mice were given extracts intraperitoneally with 100or 500 µl/kg/day single dose 3 hours after injection. One hundred percent of mice were survived with all of used dosages of Fennel(aqueous – ethanol - acetone) extracts at 5 days after infection but one hundred percent of positive control mice were died. Comparing of groups, tachyzoites of toxoplasma in the spleen were disappeared in group that received aqueous Fennel extract (40%).In comparison of control group with all experimental groups, eradication of toxoplasm's tachyzoites from the spleen(P<0.001) and liver(P<0.05) were significant .The results show that Fennel(aqueous – ethanol - acetone) extracts are effective on tachyzoites of toxoplasma in mice.

References

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