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Activity of doxorubicin against *Leishmania tropica*

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Objective: The aim of this study was to evaluate the activity of doxorubicin (Known antitumor agent, topoisomerase II poison) against cutaneous leishmaniasis caused by *Leishmania tropicain vitro* and *in vivo*, in view of the developmental resistance against pentavalent antimonials.

Methods: ELISA technique and *in vitro* model of *Leishmania* infection were used to evaluate the potency of doxorubicin against promastigotes and intracellular amastigotes respectively. In addition, *in vivo* model of *Leishmania* infection was used to evaluate the efficacy of doxorubicin in curing the cutaneous lesions in mice.

Results: The potency of doxorubicin was identified with IC_{50} value of (4.25±0.2 μM) against *Leishmania tropica* promastigotes after *in vitro* incubation at 26˚C for 48 hours. Doxorubicin was identified as active against *Leishmania tropica* intracellular amastigotes in peritoneal BALB/c mice macrophages with IC_{50} value of (3.34±0.2 μM) after incubation at 37˚C with 5% CO_2 for 48 hours. In addition, doxorubicin was strongly effective in eradicating cutaneous lesions in the left feet of BALB/c mice previously infected by *Leishmania tropica* promastigotes. After 24 hours and 4 weeks of single peritoneal dose, the difference in diameters between infected feet and healthy feet was reduced to (0.018±0.008 mm) compared with untreated control mice (Pvalues: 2.6×10-5 and 9.8×10-8 respectively). Interferon-gamma was 287.9±23.4 pg/mL in treated serum mice after one week of single peritoneal dose (Pvalue=9.2×10-7) compared with untreated control mice.

Conclusion: Our study demonstrates that doxorubicin may be a promising, effective and safe management of cutaneous leishmaniasis caused by *Leishmania tropica* by single dose with no relapse or unpleasant cytotoxic side effects.

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Detection of antigens leading protective immunity against *Campylobacter jejuni* and investigation of potentional application area

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Campylobacter jejuni, colonizes especially on the gastrointestinal tract of the poultry and leads economic losses. Transmission to human occurs by consumption of infected poultry products and cause gastrointestinal symptoms. Colonization in poultry increase in relation with the age. Non-colonization occurs in the first 2-5 weeks so there may be the role of maternal IgY for protective immunity in eggs. Therefore antigens inducing protective immune responses may be used in vaccine studies and serologic diagnostic kits for human and poultry. Determining the reactivity of anti-*C. jejuni* IgY in local chicken eggs with membrane antigens was aimed. Membrane proteins of *C. jejuni* isolated from tissue samples of I, III and V weeks old chicks-chickens treated in the slaughter house of regional industrial type enterprises were extracted. After separation by SDS-PAGE, immobilized to nitrocellulose membranes. IgY were extracted from 100 eggs taken randomly from domestic and industrial enterprises. Proteins reacting with IgY were investigated by immunoblotting. Colonization in 17.5% of tissue samples was observed. Proteins from 8-120 kdA on cell mebranes were showed. IgY in 68% of the egg was determined by SDS-PAGE and ELISA. Reactive IgY with major 36 and 60 kDa proteins (93.3-100%) in 30 (44.1%) of egg extracts were detected. Anti-*C. jejuni* IgY was determined in 14% and 46% respectively in eggs obtained from the industrial and domestic enterprices and identified immune reactive with 36 and 60 kDa proteins. Therefore these antigens, can be used as target antigens for the vaccine and diagnostic kit development.

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