

实验研究

阿苯达唑亚砷及其对映体体外抗细粒棘球绦虫原头蚴作用

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摘要

目的 观察阿苯达唑亚砷消旋体 (ASOX)、左旋体 (L-ASOX) 和右旋体 (D-ASOX) 体外抗细粒棘球绦虫原头蚴作用。方法 将细粒棘球绦虫原头蚴随机分为8组 (每组约6 000个), 分别置含6 ml DMEM培养液 (含15%胎牛血清, 青霉素和链霉素各500 U/ml) 的培养瓶中, ASOX、L-ASOX和D-ASOX的各50 $\mu\text{g/ml}$ 和100 $\mu\text{g/ml}$ 组分别加入各药液150 μl 和300 μl (配制液含0.1%二甲基亚砷和0.1%吐温-80的蒸馏水), DMSO组中加入等量配制液, 并设空白对照组, 每组设2个平行组。每隔1 d观察1次, 取样滴于玻片, 用0.03%美蓝染色, 显微镜下计数原头蚴约400个, 计算死亡率。直至其中一组的原头蚴全部死亡为止。结果 ASOX、L-ASOX和D-ASOX两个浓度 (50 $\mu\text{g/ml}$ 和100 $\mu\text{g/ml}$) 组不同作用时间原头蚴的死亡率分别与空白对照组和溶剂组相比, 差异均有统计学意义 ($P<0.01$); ASOX组与D-ASOX组相比, 差别无统计学意义 ($P>0.05$), 而与L-ASOX组相比, 差异有统计学意义 ($P<0.05$); D-ASOX与L-ASOX相比, 差异有统计学意义 ($P<0.05$)。各药物作用至第9天时, ASOX、L-ASOX、D-ASOX的50 $\mu\text{g/ml}$ 组原头蚴死亡率分别为 (93.6 \pm 3.7)%、(56.2 \pm 3.9)%和 (99.0 \pm 1.9)%, 各药的100 $\mu\text{g/ml}$ 组死亡率分别为100%、(74.5 \pm 3.7)%和100%, 对照组为 (19.1 \pm 1.3)%, 溶剂组为 (22.5 \pm 1.9)%。结论 ASOX、L-ASOX和D-ASOX在体外均有抗细粒棘球绦虫原头蚴作用, D-ASOX抗原头蚴作用较L-ASOX强。

关键词 [细粒棘球绦虫](#) [原头蚴](#) [阿苯达唑亚砷](#) [单一对映体](#) [体外实验](#)

分类号

In Vitro Observation on Albendazole Sulfoxide and its Enantiomers against *Echinococcus granulosus* Protoscolex

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Abstract

Objective To investigate *in vitro* anti-hydatid efficacy on *Echinococcus granulosus* protoscolex (EgPSC) by using albendazole sulfoxide (ASOX) and its two enantiomeric antipodes, L-ASOX and D-ASOX. Methods Eg protoscoleces were divided into eight groups and cultured in the DMEM culture media under two concentrations (50 $\mu\text{g/ml}$ and 100 $\mu\text{g/ml}$) of ASOX, L-ASOX and D-ASOX respectively. The appropriate controls included (i) a culture containing an equal amount of DMSO and (ii) a culture medium alone. The mortality of EgPSC in each group was daily counted until 100% EgPSC death in some groups. Results Significant difference of EgPSC mortality was found among the three drugs with various concentrations compared to control group ($P<0.01$), and a significant difference between L-ASOX group and D-ASOX group ($P<0.05$). There were no statistical difference between ASOX group and D-ASOX group ($P>0.05$), but between ASOX group and L-ASOX group ($P<0.05$). On the 9th day of culture, the mortality of protoscoleces with the concentration of 50 $\mu\text{g/ml}$ was 93.6%, 56.2% and 99.0% in ASOX, L-ASOX and D-ASOX groups respectively, and those under the concentration of 100 $\mu\text{g/ml}$ were 100%, 74.5% and 100% respectively. The mortality was 19.1% and 22.5% respectively in the control and solvent groups.

Conclusion ASOX, L-ASOX and D-ASOX demonstrate significant effect of anti-Eg protoscolex *in vitro*. D-ASOX shows stronger effect than L-ASOX.

Key words [Echinococcus granulosus](#); [Protoscolex](#); [Albendazole sulfoxide](#); [Enantiomeric antipode](#); [In vitro](#)

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