

实验研究

5-羟色胺体外对日本血吸虫母胞蚴

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摘要

目的 研究5-羟色胺(5-HT)体外对日本血吸虫母胞蚴运动性和体长的影响,并筛选5-HT作用的最适浓度与时间。方法 取感染6~8周日本血吸虫的小鼠肝脏,碾磨后沉淀,孵化收集毛蚴,于1/2 RPMI 1640培养基(含10%小牛血清和常量抗生素)中培养48 h。待毛蚴转化为母胞蚴后,将一部分母胞蚴分别培养于浓度为0、0.1、1、10、100和1 000 $\mu\text{mol/L}$ 的5-HT培养基中48 h,另一部分母胞蚴用10 $\mu\text{mol/L}$ 5-HT分别培养0.16、6、24和48 h,测定母胞蚴的活动率、体长与琥珀酸脱氢酶活力。结果 用不同浓度5-HT培养母胞蚴48 h,随着5-HT浓度的增加,母胞蚴的活动率及体长均逐渐增加,浓度为10 $\mu\text{mol/L}$ 时两者均达到最大,分别为(65.6 \pm 1.5)%和(131.4 \pm 9.2) μm 。用10 $\mu\text{mol/L}$ 5-HT培养时,随着培养时间的延长,母胞蚴的活动率、体长、琥珀酸脱氢酶活力均逐渐增加,24 h时活动率达最大,48 h时体长最长和琥珀酸脱氢酶活力最强。结论 5-HT能显著影响体外培养的日本血吸虫母胞蚴的运动性和体长,其作用的适合浓度为10 $\mu\text{mol/L}$ 。

关键词 [日本血吸虫](#) [母胞蚴](#) [体外培养](#) [5-羟色胺](#) [运动性](#) [体长](#)

分类号

In vitro Effect of 5-Hydroxytryptamine on Motility and Length of Schistosoma japonicum Primary Sporocysts

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Abstract

Objective To study in vitro the effect of 5-hydroxytryptamine (5-HT) on the motility and length of primary sporocysts of Schistosoma japonicum and select the optimal concentration and time of 5-HT. Methods Eggs of S. japonicum were harvested from livers of the infected mice 6-8 weeks after infection, which were then incubated with water. The miracidia were axenically cultured in 1/2 RPMI 1640 containing 10% calf serum and a moderate amount of antibiotics (100 U/ml penicillin G and 100 $\mu\text{g/ml}$ streptomycin) for 48 hours. They became mother sporocysts and were divided into two groups. Parasites in the first group were treated by 5-HT under concentrations of 0, 0.1, 1, 10, 100 and 1 000 $\mu\text{mol/L}$ for 48 hours, respectively. Those parasites in the second group were treated by 5-HT of 10 $\mu\text{mol/L}$ for 0.16, 6, 24 and 48 hours, respectively. The motility, length and succinic dehydrogenase (SDH) activity of the parasites were measured under Olympus microscope. Results Along with the increase of 5-HT concentration, the motility and length of the mother sporocysts all increased gradually. With the 5-HT concentration of 10 $\mu\text{mol/L}$, both of them reached a maximum value, being (65.6 \pm 1.5)% and (131.4 \pm 9.2) μm respectively. Meanwhile, along with the prolongation of treatment time, the motility and length also increased gradually. The motility reached a maximal value at 24 hours post-treatment. So did the length and SDH activity of the parasites at 48 hours post-treatment. Conclusion 5-HT shows a significant effect on the motility and length of mother sporocysts of S. japonicum and its optimal concentration is 10 $\mu\text{mol/L}$ in vitro conditions.

Key words [Schistosoma japonicum](#) [Mother sporocyst](#) [In vitro](#) [5-Hydroxytryptamine](#) [Motility](#) [Length](#)

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