

论著

瑞香素对体外培养恶性疟原虫超氧化物歧化酶活性及DNA合成的影响

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摘要

目的研究瑞香素(DPNT)对体外培养恶性疟原虫超氧化物歧化酶(SOD)活性及DNA合成的影响。方法在恶性疟原虫FCC1株体外培养体系中,以SOD试剂盒检测瑞香素、瑞香素铁盐及去铁胺(DFO)对疟原虫SOD活性的影响。疟原虫培养同步化,利用荧光素Hoechest33258测定在瑞香素和去铁胺作用下疟原虫不同发育阶段(环状体和滋养体)的DNA合成水平。结果与未加药对照组比较,经瑞香素作用后疟原虫总SOD下降约60%($P<0.01$),而相应的经去铁胺作用后,疟原虫的总SOD仅下降约22%($P>0.05$)。瑞香素铁螯合能力被遮蔽后,几乎失去对疟原虫SOD的影响。同步培养的滋养体阶段疟原虫,在瑞香素作用下DNA合成率明显低于对照组。结论在体外瑞香素可显著降低疟原虫SOD活性,并影响滋养体阶段疟原虫的DNA合成。

关键词 [恶性疟原虫](#) [瑞香素](#) [超氧化物歧化酶](#) [脱氧核糖核酸](#)

分类号

Effect of Daphnetin on SOD Activity and DNA Synthesis of Plasmodium falciparum in vitro

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Abstract

Objective To investigate the effect of daphnetin on superoxide dismutase (SOD) activity and DNA synthesis in *P. falciparum* in vitro. Methods The effect of daphnetin, daphnetin-Fe complex and desferrioxamine B on SOD activity of *P. falciparum* (*P. f*) FOCI in vitro was determined with a SOD test-kit. The level of DNA synthesis of *P. f* synchronized cultured in vitro at various developmental stages after treatment of daphnetin or desferrioxamine B was assayed by fluorescein Hoechest 33258. Results The total SOD activity decreased by 60% after daphnetin treatment while it only decreased by 22% if treated with desferrioxamine B. No effect on SOD activity of *P. f* treated with daphnetin-Fe complex was observed. The level of DNA synthesis of *P. f* trophozoites in synchronized in vitro culture was significantly lower than that of the control. Conclusion Daphnetin lowered SOD activity and decreased DNA synthesis of *P. f* in vitro.

Key words [Plasmodium falciparum](#) [daphnetin](#) [superoxide dismutase \(SOD\)](#) [deoxyribonucleic acid \(DNA\)](#)

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