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15种中草药对刺激隐核虫(*Cryptocaryon irritans*)的杀灭效果及包囊破裂的条件

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摘要:

比较分析了15种中草药对刺激隐核虫(*Cryptocaryon irritans*)滋养体和幼虫的离体杀灭效果,并探讨了刺激隐核虫包囊破裂产生幼虫的最适温度和盐度条件。结果显示,中草药药物浓度为4.55 g/L时,槟榔对滋养体和幼虫有杀灭效果,大黄和野菊花仅对幼虫有杀灭效果;药物浓度为9.09 g/L时,苦参、贯众对滋养体和幼虫具有杀灭效果。药物浓度为18.18 g/L时,黄芩、川楝子、枳壳对滋养体和幼虫都具有杀灭效果。野菊花对滋养体也具有杀灭效果;在45.45、90.09 g/L较高药物浓度时,黄芪、鱼腥草、板蓝根、白头翁、金银花、熟地黄对幼虫和滋养体具有杀灭效果。研究表明,槟榔、苦参、大黄、贯众、黄芩、枳壳、川楝子、野菊花杀虫效果显著;黄芪、鱼腥草、板蓝根、白头翁、金银花、熟地黄、黄连的杀虫效果不显著。不同培养温度和盐度对刺激隐核虫包囊破裂产出幼虫所需时间比较结果显示,包囊破裂产出幼虫的最适温度为26℃、最适盐度为20-30。

关键词: 中草药 刺激隐核虫 滋养体 幼虫 包囊 温度 盐度

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The Pesticidal Effects of Chinese Herbal Medicine on the Trophonts and the Theronts of Ciliate *Cryptocaryon irritans* and the Influence of Temperature and Salinity on the Cyst Rupture

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Abstract:

In this study we performed in vitro study on the pesticidal effects of 15 Chinese herbal medicines on the trophonts and theronts of ciliate *Cryptocaryon irritans*, including Betel nut (*Areca catechu*), Bitter ginseng (*Sophora flavescens*), Rhubarb (*Rheum officinale*), Cyrtomium rhizome (*Cyrtomium Rhizoma*), Radix scutellariae (*Scutellaria baicalensis*) and Wild chrysanthemum (*Dendranthema indicum*). We also explored the optimum temperature and salinity for the cyst rupture. At the concentration of 4.55 g/L, Betel nut could kill both the trophonts and the theronts of the ciliate, but Rhubarb and Wild chrysanthemum could only kill theronts. At the concentration of 9.09 g/L, both Bitter ginseng and Cyrtomium rhizome were able to kill the trophonts and the theronts. At the concentration of 18.18 g/L, Radix scutellariae, Toosendan fruit (*Melia toosendan*) and Fructus aurantii (*Citrus aurantium*) could kill the trophonts and the theronts, and Wild chrysanthemum could kill the trophonts. Other herbs could annihilate the trophonts and the theronts at much higher concentrations (45.45 g/L to 90.91 g/L), such as Astragalus root (*Astragalus membranaceus*), Heartleaf houttuynia herb (*Houttuynia cordata*), Isatis root (*Isatis tinctoria*), Chinese bulbul (*Anemone chinensis*), Honeysuckle (*Lonicera japonica*), Radix rehmanniae preparata (*Rehmannia glutinosa*), and Rhizoma coptidis (*Coptis chinensis*). These results suggested that Betel nut, Bitter ginseng, Rhubarb, Cyrtomium rhizome, Radix scutellariae, Toosendan fruit, Fructus aurantii, and Wild chrysanthemum might be more pesticidal than the other herbs, and hence they could be used to control the ciliate. Our study also revealed that the optimum temperature and salinity for the cyst rupture were 26°C and 20-30 respectively.

Key words: Chinese herbal medicine Ciliate *Cryptocaryon irritans* Trophonts Theronts Cysts Temperature Salinity

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