

论文

不同萜类对黄曲霉菌抑制作用评价

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摘要:

目的 评价7种萜类对黄曲霉*Aspergillus flavus*的抑菌活性,获得抑菌性能优良的化合物,为研制和开发新型黄曲霉杀菌剂提供科学依据.方法 采用气体扩散法研究7种萜类挥发物在1、2、4、8 μ L 4个浓度下对黄曲霉菌丝生长和孢子萌发率的影响.结果 除了1 μ L的金合欢烯、 β -罗勒烯、 α -蒎烯以外,其余处理均对黄曲霉菌丝生长有明显抑制活性($P<0.05$);1、2、4 μ L的香叶烯、1 μ L的 β -罗勒烯和1 μ L的松油烯对黄曲霉孢子萌发率无明显影响,其余处理条件下萜类对孢子萌发均有抑制作用($P<0.05$);芳樟醇的抑菌活性最明显,在8 μ L的浓度下对菌丝生长和孢子萌发的抑制率分别达到75.93%和86.32%.结论 7种萜类化合物对黄曲霉菌有不同程度的抑制活性,其中芳樟醇的活性最高.

关键词: 黄曲霉 萜类 菌丝生长 孢子萌发

Antifungal effect of seven terpenes against *Aspergillus flavus*

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Abstract:

Objective To evaluate antifungal effects of 7 terpenes against *Aspergillus flavus*(*A.flavus*)and to provide basis for development of antimicrobial against *A.flavus*.Methods The anti-*A.flavus* effects of the terpenes were investigated at the concentrations of 1 μ L,2 μ L,4 μ L,and 8 μ L with gaseous diffusion methods.Results All treatments had inhibitory effect on hyphal growth,with the exception of 1 μ L farnesen,1 μ L β -ocimene,and 1 μ L α -pinene.Myrcene at the concentrations of 1 μ L,2 μ L and 4 μ L, β -ocimene at 1 μ L,and terpinene at 1 μ L were lack of inhibition on spore germination.The terpenes at other concentrations could inhibit spore germination significantly.The antifungal effect of linalool was the strongest with an inhibitory rates on hyphal growth and spore germination of 76.53% and 86.32% at the concentration of 8 μ L.Conclusion The results indicate that the seven terpenes could inhibit *A.flavus* at different extent,and the effects of linalool is the best.

Keywords: *Aspergillus flavus* terpenes hyphal growth spore germination

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