

论著

特殊生态环境真菌的分离培养及抗肿瘤活性筛选

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摘要 目的 从特殊环境样品中分离纯化真菌, 并筛选获取抗肿瘤活性菌株供筛选新药、无活菌株供真菌核糖体工程转化研究。方法 利用单菌落挑选与划线培养技术, 分离纯化真菌。通过摇床发酵培养, 提取制备发酵样品。采用MTT法结合细胞形态学检测的方法, 用K562细胞测试发酵样品的抗肿瘤活性。结果 从采自湖北巴东偏远山区6个不同砖窑内的窑土样品中分离真菌32株, 从天津塘沽驴驹河渤海湾潮间带海泥样品中分离真菌102株。其中, 在100 mg·L⁻¹ 样品浓度下有明显抗肿瘤活性的陆生真菌2株、海洋来源真菌12株, 即使在 1 000 mg·L⁻¹ 的高浓度下也没有抗肿瘤作用的无活性真菌8株。结论 从窑土、潮间带海泥等样品中分得真菌134株, 从中筛选获取抗肿瘤活性菌株14株(占菌株总数的10.4%), 无活性菌株8株。活性菌株为筛选抗肿瘤天然产物提供了药源菌株, 无活性菌株则为真菌核糖体工程转化研究提供了菌株材料。

关键词 [海洋来源真菌](#); [陆生真菌](#); [分离,培养](#); [抗肿瘤活性](#)

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Isolation of fungal strains in unusual environment and screening for their antitumor activity

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Abstract

Objective To isolate fungal strains in unusual environment to obtain antitumor-metabolite-producing strains for new drug screening and to obtain the non producing strains for ribosome engineering study. **Methods** The fungal strains were obtained by single colony isolation technique. The antitumor activity was assayed by MTT method using K562 cells together with morphological observation of K562 cells under inversed light microscope. **Results** The 32 terrestrial fungal strains were isolated from inner-brickkiln-soil samples collected from 6 different brickkilns in Badong area of Hubei Province, China, and the 102 marine-derived fungal strains were isolated from soil samples collected at the tideland of Bohai Bay around Lūjūhē in Tanggu District of Tianjin, China. Among them, 14 strains produced fermentation products obviously inhibiting the proliferation of K562 cells at the concentration of 100 mg·L⁻¹, while the fermentation products from 8 fungal strains showed no inhibitory effect on the K562 cells even at the concentration of 1 000 mg·L⁻¹. **Conclusion** Total 134 fungal strains were isolated from specific soil samples, including 14 strains producing metabolites with antitumor activity and 8 strains showing no activity. These strains have provided fungal strains for further studies on the bioactive metabolites and on the alteration of metabolic capacity of the fungal strains to produce bioactive metabolites by ribosome-engineering.

Key words [marine-derived fungus](#) [terrestrial fungus](#) [isolation](#) [cultivation](#) [antitumor activity](#)

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