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A bacteria strain as a model for screening the antitumor materials

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Abstract

Some antitumor antibiotics can inhibit the growth of some bacteria strains, and we screened a bacteria strain Y, which is very Sensitivity to antitumor antibiotics. A screening model for antitumor materials was established. The characteristics of the screening model is rapid, simple, easy to use, Sensitivity, and also can be used as high throughput screening method. The model can be used for screening antitumor materials from pure compond and also from microbial metabolite. Using the screening model, We obtained a kind of surfactin from *Bacillus* sp. In vitro experiment indicated that, Surfactin have obvious antitumor activity. Surfactin (18μg/ml) can inhibit the growth of human lung adenocarcinoma cell line A549 after 72hr, and it can inhibit the growth of Human hepatocellular carcinoma cell lines SMMC-7721 and Human breast cancer cell line SK-BR-3 after 48hr and 72hr. The surfactin no obvious toxin to Human embryonic kidney cell line HEK293. Further study using laser scanning confocal microscope indicated that the surfactin can inhibit the DNA replication of tumor cell. In vivo experiment shown that the surfactin have obvious toxin to Tumor bearing mice S180 and H22. The results of this study indicated that the screening model is a very effective method for screening antitumor materials, and surfactin have antitumor activity. The antitumor mechanism of the furfactin need further study.

Biography

Xin Mingxiu has completed his Ph.D at the age of 40 years from Institute of Microbiology, Chinese Academy of Sciences. He is the Associate Professor at College of Life Sciences, Beijing Normal University, and he is the member of Beijing Society of Microbiology. He has published more than 30 papers in journals and he is the Editor in chief of <Microbiology, third edition> and <Experimental Microbiology, Secold edition> which published by High Education Press in China.