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论文

蛋白激酶抑制剂staurosporine增强抗癌药对肿瘤细胞的杀伤

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摘要：

蛋白激酶抑制剂staurosporine 5 ng·ml^{-1}阻断人胚肺2BS细胞于G_1/S边界,而不影响人胃癌BGC-823细胞的周期运行。细胞周期时相特异药物阿霉素、阿糖胞苷或博莱霉素A_5与staurosporine合用,2BS细胞和BGC-823细胞的IC_{50}均发生改变,显示低剂量staurosporine增强抗癌药对肿瘤细胞的杀伤。用谷胱甘肽(GSH)的荧光探针mBCL测定不同细胞周期时相的GSH,发现staurosporine使2BS细胞中GSH含量显著增高,而使BGC-823细胞中GSH含量显著下降。Staurosporine对正常和肿瘤细胞周期行进及胞内GSH水平的不同影响,可能是它增强抗癌药物对肿瘤细胞杀伤作用的原因。

关键词： 蛋白激酶抑制剂(staurosporine) 抗肿瘤药物 细胞周期 谷胱甘肽

PROTEIN KINASE INHIBITOR STAUROSPORINE ENHANCES CYTOTOXICITY OF ANTITUMOR DRUGS TO CANCER CELLS

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Abstract:

Treated with low dosage(5 ng·ml^{-1})of staurosporine for 18 h,human embryolung 2BS cells werc blocked at the G_1/S boundary, but human gastric carcinoma BGC-823 cells stillkept their cell cycle.In comparison with $IC_{50}$of 2BS and BGC-823 cells treated with cell cycle phasespecific antitumor drugs adriamycin,Ara-C and BLM A_5 alone or combined with staurosporine5ng · ml^{-1}),the IC_{50}values increased from 0.325 μg·ml^{-1}),5 μg · ml^{-1})and 6.5 μg·ml^{-1})to 0.45 μg·ml^{-1}),10 μg · ml^{-1})and 6.5 μg·ml^{-1},respectively in 2BS cells;but decreased from 0.325 μg·ml^{-1}),25 μg·ml^{-1})and 1.1 μg·ml^{-1})to 0.07μg·ml^{-1},6.25 μg · ml^{-1})and 0.4 μg·ml^{-1}),respectively in BGC-823 cells.These results suggest that combination of staurosporine 5 ng·ml^{-1})withantitumor drugs showed different effects on tumor cells and normal cells.With the GSH fluorescentprobe mBCL,we found that GSH contents incrcased in 2BS cells treated with staurcoporine 5ng·ml^{-1}).

Keywords: Cell cycle Antitumor drug Glutathione(GSH) Staurosporine

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