癌变.畸变.突变 ISSN: 1004-616x CN:44-1063/R 2003; 15(3) :161-163

检测研究

大蒜提取液和维生素E对烹饪油烟凝集物的协同抗突变作用

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收稿日期 2002-9-26 修回日期 2003-2-18 网络版发布日期:

摘要 目的：观察大蒜提取物(garlic extract,GE)和维生素E在拮抗烹饪油烟凝集物(condensates of cooking oil fume,COF)的致突变的作用。 方法：在人外周血淋巴细胞培养物中注入一定剂量的GE或一定剂量的维生素E并一定量的COF，观察淋巴细胞的姐妹染色单体交换率(sister chromatid exchanges,SCE)的变化，挑选GE(按1:10 000稀释)和维生素E(按1:1 000稀释)同时注入培养基中(含COF 10 μl)，观察二者对COF的协同抗突变作用。 结果：GE(按1:10 000稀释)可显著降低COF处理过的淋巴细胞SCE($P < 0.05$)；维生素E(按1:1 000稀释)和GE(按1:10 000稀释)在降低COF处理过的淋巴细胞SCE方面存在着协同作用($P < 0.01$)。 结论： GE和维生素E在拮抗COF的致突变性过程中存在着显著的协同效应；一定量的GE亦有一定的拮抗COF的致突变作用。

关键词 大蒜；维生素E；烹饪油烟凝集物；协同效应

ANTAGONISTICACTION OF GARLIC EXTRACT AND VITAMINE TO MUTAGENICITY OF COOKING OIL FUMES

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Abstract Purpose： To observe antagonistic effects of garlic extract(GE)and vitamin E to mutagenicity of condensates of cooking oil fumes(COF). Methods： SCE(sister chromatid exchange) was observed and compared before and after addition of garlic extract or vitamin E in different amounts to the culture of human peripheral blood lymphocytes containing different amounts of COF. Then GE(1:10 000 dilution)and / or vitamin E (5 μl) were added to the culture of human peripheral blood lymphocytes containing COF 10μl to compare the changes in SCE. Results： Garlic extract(1:10 000 dilution) could lower SCE of lymphocytes($P< 0.05$); Garlic extract and vitamin E had a very significantly synergistic effect on lowering SCE of lymphocytes treated by COF($P< 0.01$). Conclusions： Garlic extract and vitamin E have a synergistic effect to antagonize the mutagenicity of COF; garlic extract alone can also lower SCE of human peripheral blood lymphocytes.

Keywords garlic vitamin E condensates of cooking oil fumes cooperativity

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