# 식물 성분과 방사선 종양치료

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Inhibition of ICAM-1 expression by garlic component, allicin, in gamma-irradiated human vascular endothelial cells via downregulation of the JNK signaling pathway

Ionizing radiation used in cancer therapy frequently exerts damaging effects on normal tissues and induces a complex response including inflammation. Since the upregulation of adhesion molecules on endothelial cell surface has been known to be associated with inflammation and our previous data showed that irradiation enhanced adhesion molecules expression, interfering with the expression of adhesion molecules may be an important therapeutic target of inflammatory diseases. We examined the effect of allicin, a major component of garlic, on the induction of intercellular adhesion molecule-1 (ICAM-1) by gamma-irradiation (γIR) and the mechanisms of its effect in gamma-irradiated human umbilical vein endothelial cells (HUVECs). HUVECs were pretreated for 20 h with allicin (0.01.1 μg/ml) and then exposed to 8 Gy radiation. Allicin significantly inhibited γIR-induced surface expression of ICAM-1 and ICAM mRNA in a dose-dependent manner. In addition, pretreatment with allicin resulted in the decrease of AP-1 activation and phosphorylation of the c-Jun NH2-terminal kinase (JNK) induced by γIR. These results suggest that allicin downregulates γIR-induced ICAM-1 expression via inhibition of both AP-1 activation and the JNK pathway and may be considered in therapeutic strategies for the management of patients treated with radiation therapy.
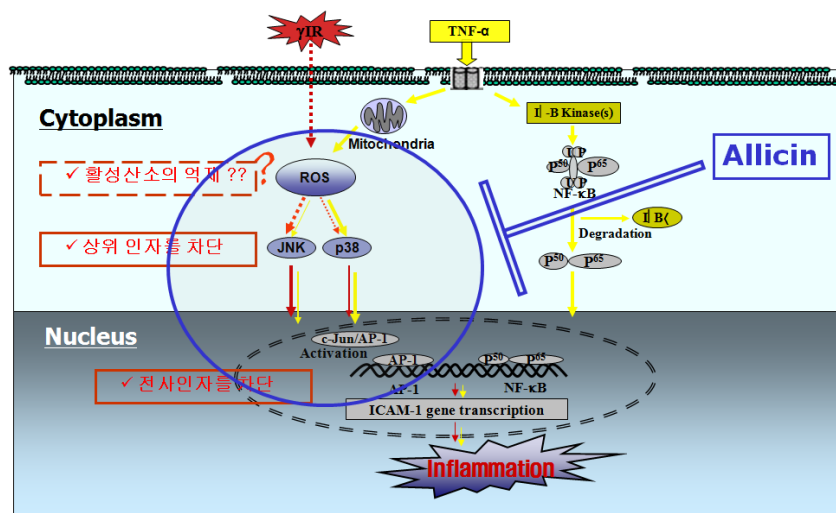
〈Fig〉 gamma-ray 로 유발된 염증 반응에 대한 allicin 의 항염증 효과기전