

3 - 92 Radiosensitizing Effect of Diallyl Disulfide on S180 Sarcoma-bearing Mice

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Diallyl disulfide (DADS), an important component of garlic (*Allium sativum*) derivative, has been demonstrated to exert a potential molecular target against human cancers. It has been reported that Diallyl disulfide causes caspase-dependent apoptosis in human cancer cells through a Bax-triggered mitochondrial pathway^[1]. Diallyl disulfide can also induces apoptosis in human colon cancer cell line (COLO 205) through the induction of reactive oxygen species^[2].

In this paper, the radiosensitizer effect of Diallyl disulfide (DADS) on S180 sarcoma-bearing mice was studied. Male Kun-Ming mice were implanted with S180 cell to establish orthotopically transplanted model. Then, the tumor-bearing mice were exposed to whole body irradiation with X-ray. On day 28, the animals were sacrificed. Tumor volume and weight were evaluated in treatment versus control. The group treated with DADS and irradiation showed significant reductions in tumor volume and weight($p<0.01$ versus control, DADS alone or irradiation alone). In vitro, DADS increased reactive oxygen species(ROS) production in S180 cells.

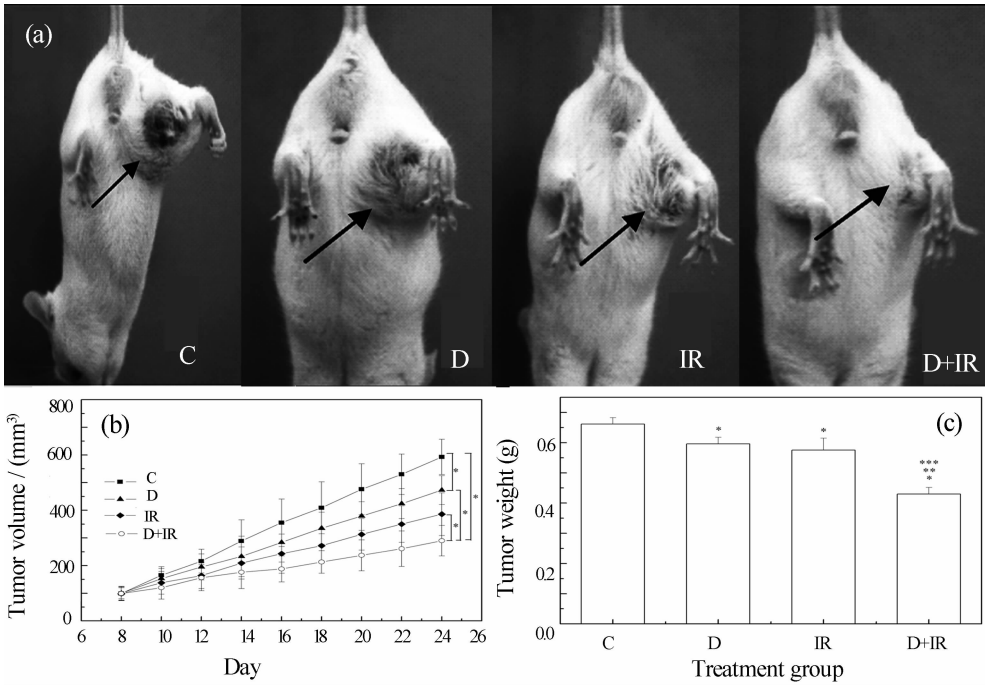


Fig. 1 (a) Effects of DADS on tumor growth in mice, “→”point at tumor site. (b) Tumor volume in different treatment group(* $p<0.01$). (c) Tumor weight in different treatment group(* $p<0.01$ vs C, * * $p<0.01$ vs D, * * * $p<0.01$ vs IR). C: control group, D: Drug only group, IR: Irradiated group, D+IR: Drug + irradiated group.

References

[1] N. S. Nagaraj, K. R. Anilakumar, O. V. Singh, Journal of Nutritional Biochemistry, 21(2010)405.
 [2] J. S. Yang, G. W. Chen, T. C. Hsia, et al. , Food and Chemical Toxicology, 47(2009)171.