主論文の題名

Inflammation Enhanced X-irradiation-Induced Colonic Tumorigenesis in the Min mouse

主論文の要旨

Inflammation is potential risk factor of various human malignancies. Inflammatory bowel syndrome such as ulcerative colitis is well known as risk factor of colitis cancer. Here, we examined effect of enhancing effect of dextran sulfate sodium (DSS)-associated inflammation on X-irradiation induced colonic tumorigenesis in Min and wild-type (WT) mice. Animals were X-irradiated at 1.5 Gy at 5 weeks old (at 0 experimental week) and 2% DSS in drinking water was administered at 5 or 11 experimental weeks. Mice were sacrificed at 16 weeks and incidence and multiplicity of colonic tumors were assessed. Incidence of colonic tumors in Min mouse was increased from 33.3% to 100% (P<0.05) with X-irradiation alone, whereas no tumors were developed in WT mice. In DSS-treated Min mice, X-irradiation increased the number of colonic tumors. Total number of colonic tumors was increased 1.57 times from 30.67±3.83 tumors/mouse with X-irradiation + DSS at 5 weeks compared to 19.57±2.9 in corresponding DSS alone group (P<0.05). When the duration of inflammation was compared, longer period of DSS effect promoted more colonic tumorigenesis. Collectively, we concluded that X-irradiation and DSS-induced inflammation acted synergistically for colonic tumorigenesis.