Tumor Transplantability in Mice Kept in Standard Non-enriched Environment (Control) or Enriched Environment

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Abstract

We have previously shown that the transplantability of a murine ovary granulosa cell tumor cell line, OV3121, was significantly enhanced in syngeneic B6C3F1 mice irradiated with gamma-rays at a low dose-rate of 20 mGy/day for 400 days to a total accumulated dose of 8000 mGy. Transplantability, however, was delayed when mice were exposed to an enriched environment. In the present study, we showed that environmental enrichment does not alleviate the enhanced tumor transplantability brought about by irradiation. In addition, we examined whether providing igloos or running wheels, as environmental enrichment, will alleviate tumor transplantability. Results showed a significant reduction in tumor transplantability in mice provided with igloos, but not in those provided with running wheels.

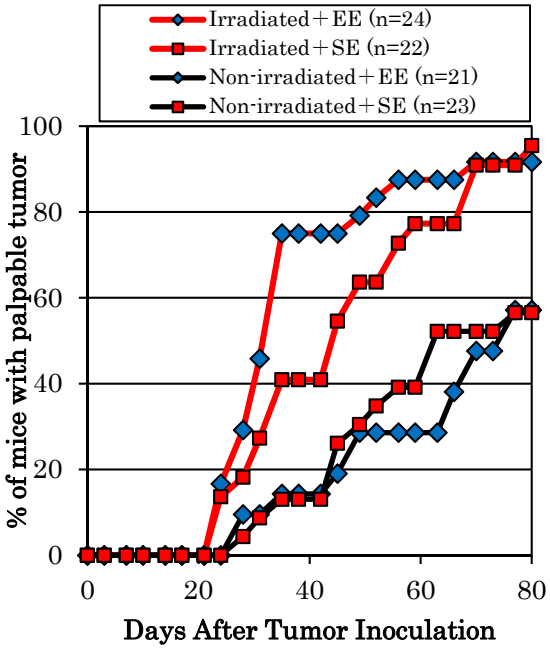

Fig. 1 Comparison of tumor transplantability. Irradiated or non-irradiated control mice were exposed to an environment that was enriched (EE) or standard (SE). Then all mice were inoculated with OV3121 cells. Mice with palpable tumors were counted to assess transplanted tumor formation.

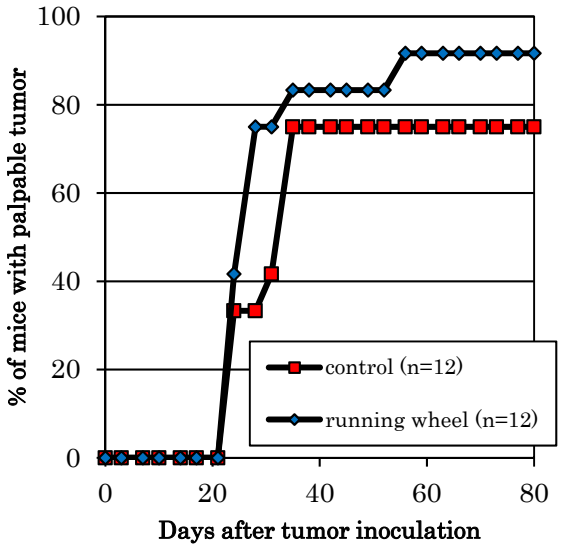

Fig. 2 Tumor transplantability of OV3121cells in mice provided with or without (control) a running wheel and inoculated with OV3121 cells. Mice with palpable tumors were counted to assess transplanted tumor formation.

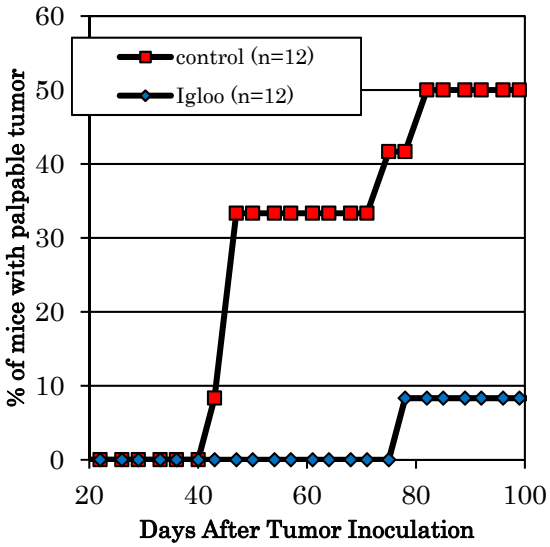

Fig. 3 Comparison of tumor transplantability in mice provided with or without (control) an igloo and inoculated with OV3121 cells. Mice with palpable tumors were counted to assess transplanted tumor formation.