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Abstract Title

Inhibition of tumor growth and metastasis in association with modification of immune response by novel organic germanium compounds.

Abstract Source

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Abstract:

The effects of two novel organic germanium compounds, 1-phenyl-2-carbamoylethylgermanium sesquisulfide (PCAGeS) and 1-phenyl-2-carbamoylethylgermanium sequioxide (PCAGeO), on transplantable murine tumors and immune responses were studied. Both drugs showed low toxicity for mice. In culture, neither substance displayed significant cytotoxicity against murine tumor cells L1210 leukemia, L5178Y lymphoma, or IMC carcinoma. Growth of subcutaneously transplanted IMC carcinoma or Meth-A fibrosarcoma was markedly reduced by oral administration of PCAGeS. PCAGeO exhibited a similar but smaller effect on the tumor growth. Pulmonary metastasis of Lewis lung carcinoma was inhibited by oral or intraperitoneal treatment with PCAGeS. The activity of cyclophosphamide or Adriamycin against L1210 leukemia was significantly potentiated by oral administration of PCAGeS. PCAGeS enhanced the delayed-type hypersensitivity response to sheep red blood cells (SRBC) of mice or restored the response suppressed by ascitic IMC carcinoma, but did not significantly affect the formation of antibody to SRBC. PCAGeO similarly stimulated the DTH reaction. Phagocytic activity of peritoneal macrophages was enhanced by oral treatment of mice with PCAGeS. The results suggest that PCAGeS and PCAGeO display tumor-inhibitory activity by modification of the immune mechanism.

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Study Type: Animal Study
Additional Links
Substances: Germanium : CK(12) : AC(7)
Diseases: Cancers: All : CK(14773) : AC(4596), Leukemia : CK(1005) : AC(398), Lymphoma : CK(253) : AC(83)
Pharmacological Actions : Antineoplastic Agents : CK(1158) : AC(639)
Additional Keywords : Drug: Doxorubicin : CK(168) : AC(64), Drug-Plant-Vitamin Synergies : CK(965) : AC(266)