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Chemopreventive potential of Aloe vera against 7,12-dimethylbenz(a)anthracene induced skin papillomagenesis in mice.

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Abstract: The present investigation was undertaken to explore the antitumor-promoting activity of Aloe vera on 2-stage skin carcinogenesis, induced by a single topical application of 7,12-dimethylbenz(a)anthracene and promoted by treatment of croton oil for 16 weeks in Swiss albino mice. Oral administration of aloe leaf extract at a dose of 1000 mg/kg body weight/d and aloe gel treatment at a dose of 1 mL/9 cm(2)/mice/d was found to be effective in decreasing the number and size of the papillomas. A significant reduction in tumor incidence (40.00+/-5.10, 30.00+/-3.25, and 40.00+/-4.12 for aloe gel, aloe gel and aloe leaf extract combined, and aloe leaf extract alone, respectively) was observed in animals in the aloe extract- and aloe gel-treated groups compared with 100% tumor incidence in the control group. The cumulative number of papillomas during an observation period of 16 weeks was significantly reduced in the aloe-treated groups (8.0+/-0.34, 6.00+/-1.10, and 9.00+/-1.41 for aloe gel, aloe gel and leaf extract, and aloe leaf extract, respectively) compared with a 36+/-0.98 cumulative number of papillomas in the control group. The average latent period was significantly increased from 4.9+/-0.10 weeks in the control group to 6.37+/-0.12, 6.8+/-0.25, and 6.2+/-0.21 weeks in the aloe-treated groups, respectively. The tumor burden and tumor yield were significantly decreased (2.0+/-0.25, 2.00+/-0.30, and 2.25+/-0.2 and 0.8+/-0.25, 0.6+/-0.32, and 0.9+/-0.28, respectively) as compared with the 7,12-dimethylbenz(a)anthracene-treated control group (3.6+/-0.10 and 3.6+/-0.19). Furthermore, treatment with aloe gel and/or extract by topical and/or oral administration resulted in a significant increase in the reduced glutathione (P

Links: [Link to full text](#)

Subject: Index Medicus;

MeSH subject: 9,10-Dimethyl-1,2-benzanthracene -- toxicity; Animals; Body Weight -- drug effects; Catalase -- metabolism; Croton Oil -- pharmacology; DNA -- metabolism; Glutathione -- metabolism; Lipid Peroxides -- metabolism; Male; Mice; Phytotherapy; Plant Leaves -- chemistry; Proteins -- metabolism; Skin -- drug effects; Skin -- metabolism; Skin -- pathology; Aloe -- chemistry (major); Chemoprevention -- methods (major); Papilloma -- chemically induced; Papilloma -- pathology; Papilloma -- prevention & control (major); Plant Extracts -- administration & dosage; Plant Extracts -- therapeutic use (major); Skin Neoplasms -- chemically induced; Skin Neoplasms -- pathology; Skin Neoplasms -- prevention & control (major)

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