

Effect of boschniakia rossica on expression of GST-P, p53 and p21^{ras} proteins in early-stage chemical hepatocarcinogenesis and its anti-inflammatory activities in rats

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Abstract

AIM: To investigate the effect of boschniakia rossica (BR) extract on expression of GST-P, p53 and p21^{ras} proteins in early stage chemical hepatocarcinogenesis in rats and its anti-inflammatory actions.

METHODS: The expression of tumor marker, placental form glutathione S-transferase (GST-P), p53 and p21^{ras} proteins were investigated by immunohistochemical techniques and ABC method. Anti-inflammatory activities of BR were observed by xylene and croton oil-induced mouse ear edema, carrageenin, histamine and hot scald-induced rat paw edema, adjuvant-induced rat arthritis and

cotton pellet induced mouse granuloma formation methods.

RESULTS: The 500 mg/kg of BR-H₂O extract fractionated from BR Methanol extract had inhibitory effect on the formation of DEN-induced GST-P-positive foci in rat liver and the expression of mutant p53 and p21^{ras} protein was lower than that of hepatic preneoplastic lesions. Both CH₂Cl₂ and H₂O extract from BR have inhibitory effect in xylene and croton oil-induced mouse ear edema. BR-H₂O extract exhibited inhibitory effect in carrageenin, histamine and hot scald-induced hind paw edema and adjuvant-induced arthritis in rats and cotton pellet induced granuloma formation in mice.

CONCLUSION: BR extract exhibited inhibitory effect on formation of Preneoplastic hepatic foci in early stage of rat chemical hepatocarcinogenesis. Both CH₂Cl₂ and H₂O extract from BR exerted anti-inflammatory effect in rats and mice.

Key words: Boschniakia rossica; Liver neoplasms/chemically induced; Glutathione transferases; Protein p53; Proto-oncogene protein p21 (Ras); Immunohistochemistry; Arthritis, adjuvant; Antibiotics

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