Berberine: Diminui o potencial de membrana mitocondrial (Delta-Psimt), inibe microorganismos tumorigênicos: bactérias, fungos e vírus, interage com DNA e RNA formando complexos, ativa AMPK, ativa p53, inibe HIF-1, inibe NAT – N-acetiltransferase, inibe a telomerase, inibe a topoisomerase I, inibe COOX-2 /PGE2/receptor do PGE2, inibe NOI (óxido nítrico induzível), inibe a 5 alfa-redutase tipo 2, ativa p21, p27 e Wee1 e inibe Cdk1, Cdk2, Cdk4/6 e Ciclinas A, E, D1 e D2, aumenta expressão do Fas/Fasl, inibe fator nuclear NF-kappaB, inibe metaloproteinases: MMP-1, MMP-2 e MMP-9, inibe vários fatores de crescimento, reduz resistência à insulina, diminui a resistência do câncer MDR, inibe a glicólise por inibir extrusão do lactato (inibe CD147/Basigin - MCT1/4), inibe via RAF/ERK, inibe via HER2/PI3K/Akt. José de Felippe Junior


Source

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Abstract

Chemoprevention, a novel and useful approach in experimental oncology, deals with the prevention, suppression, or inhibition of carcinogenesis using natural or synthetic entities. This study evaluated the chemopreventive potential of berberine on 7,12-dimethylbenz[a]anthracene (DMBA)-induced hamster buccal pouch carcinogenesis. Oral squamous cell carcinoma was developed in the buccal pouch of golden Syrian hamsters by painting with 0.5% DMBA in liquid paraffin three times a week for 14 weeks. Tumor incidence, tumor volume, tumor burden, phase I and phase II carcinogen detoxification agents, lipid peroxidation, antioxidant status, and histopathological changes were assessed in hamsters treated with DMBA alone and in DMBA+berberine-treated animals. Hundred percent tumor incidences with an imbalance in carcinogen-metabolizing enzymes and cellular redox status were observed in hamsters treated with DMBA alone. Oral administration of berberine at a dose of 75 mg/kg body weight (bw) to DMBA-treated hamsters completely prevented tumor incidence and restored the
status of the above-mentioned biochemical markers. Berberine, a traditional drug from Southeast Asia, shows promising chemopreventive efficacy in hamster buccal pouch carcinogenesis.

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