

デキストラン硫酸ナトリウム (DSS) 誘発大腸炎 モデルマウスに対する Dibenzoylmethane 誘導体の効果

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Efficacy of Dibenzoylmethane Derivatives in Protecting against Endoplasmic Reticulum Stress and Inhibiting Nuclear Factor Kappa B on Dextran Sulfate Sodium Induced Colitis in Mice

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ABSTRACT: We recently reported that some dibenzoylmethane (DBM) derivatives have a protective effect against endoplasmic reticulum (ER) and inhibit nuclear kappa B (NF- κ B). The aim of this study was to evaluate the effect of DBM derivatives against dextran sulfate (DSS)-induced colitis in mice. The DBM derivatives used in this study were 4,4'-dibromodibenzoylmethane that protects against ER stress, and 4,4'-dichlorodibenzoylmethane that protects ER stress and inhibits NF- κ B. In each group, the presence of faecal occult blood, the disease activity index score (DAI score) and intestinal length were examined. Both of the DBM derivatives with protective effects against ER stress significantly improved occult bleeding of the colitis induced by DSS. The 4,4'-dichlorodibenzoylmethane significantly reduced the DAI score and inhibited the shortening of the colon length, but the 4,4'-dibromodibenzoylmethane did not. These findings suggest that the protective effect against ER stress and inhibitory effect on NF- κ B are needed in the treatment of DSS-induced colitis. Therefore, the effect of 4,4'-dichlorodibenzoylmethane maybe beneficial in the therapeutic regulation of ulcerative colitis.

抄録 大腸炎治療改善薬の探索を目的とし、DSS で誘発した大腸炎モデルマウスを使い dibenzoylmethane (DBM) 誘導体を評価した。4,4'-dibromodibenzoylmethane と 4,4'-dichlorodibenzoylmethane の 2 種類を使用した。2 種類の化合物とも小胞体ストレス保護作用を有するが、NF- κ B 阻害活性を有するのは後者の化合物である。精査した結果、DSS で誘発した大腸炎の症状である便の状態、DAI 及び大腸の短縮は、後者の化合物で有意に改善することが分かった。すなわち、小胞体ストレス保護作用と NF- κ B の両方を有している化合物において、大腸炎モデルマウスに対する治療改善効果が認められた。

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