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Summary

THE POTENTIAL OVERLAP BETWEEN CANNABINOID AND NOCICEPTIN SIGNALING AND ITS ROLE IN INTESTINAL INFLAMMATION IN A MOUSE MODEL AND HUMAN SAMPLES

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Mouse colitis study suggests cannabinoid receptor antagonists reduce the protective effect of nociceptin receptor activation and shows correlation between CB1 and NOP receptor expression in Crohn's disease patients.

KEY POINTS

- In DSS-induced mouse colitis, the NOP receptor agonist SCH 221510 reduced total colon damage score from 6.40±1.52 to 4.10±0.50, but co-administration of CB1 antagonist AM 6545 or CB2 antagonist AM 630 significantly increased damage scores to 11.83±0.44 and 9.12±1.54 respectively.
- All treatment groups showed significant reduction in colonic IL-6 protein expression compared to DSS-treated mice, with SCH 221510 alone, CB1 antagonist alone, CB2 antagonist alone, and combination therapy reducing IL-6 levels.
- Combined treatment with SCH 221510 and cannabinoid receptor antagonists increased CB1 and CB2 receptor gene expression in mouse colon compared to single-drug treatments.
- CB1 receptor expression was significantly lower in human colonic samples from Crohn's disease patients (2284±1074, $P<0.01$) and ulcerative colitis patients (1348±446.8, $P<0.05$) compared to healthy controls (6621±2935), with a strong positive correlation between CB1 and NOP receptor expression observed only in Crohn's disease ($r=0.71$, $P<0.05$).

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