

Ginger root extract mitigates neuropathic pain via suppressing neuroinflammation: gut-brain connection

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ABSTRACT

Objectives: Emerging evidence suggests an important role of the gut-brain-axis in the development of neuropathic pain (NP). We investigated the effects of gingerol-enriched ginger (GEG) on pain sensitivity and mRNA expression of inflammation and tight junction protein in GI tissues (colon and ileum) and nervous tissues (amygdala and spinal cord) of animals with NP.

Methods: Twenty-eight male rats were randomly divided into 3 groups: sham control, spinal nerve ligation (SNL, pain model), SNL+0.375% (w/w in diet) GEG for 4 weeks. Pain sensitivity was assessed by von Frey filament tests, evoked audible vocalizations, and grimace tests in subjects. Intestinal permeability was assessed by lactulose/mannitol ratio in urine. The levels of mRNA expression of neuroinflammation (NF- κ B and TNF) in the colon and right amygdala were determined by qRT

CONCLUSIONS