

VSL 230

Prevention of inflammation with DMG and *Perna canaliculus* in a collagen-induced inflammatory rat model.

Objective: The combination of *Perna canaliculus* and DMG was evaluated for its ability to prevent the onset of inflammation and swelling in a collagen-induced inflammatory rat model.

Summary: Collagen-induced arthritis (CIA) is a well-established animal model of rheumatoid arthritis and can be used to evaluate the use of substances in reducing inflammation. Dimethylglycine (DMG) has a long history of beneficial uses including modulation of the immune response. *Perna canaliculus* (green-lipped mussel) has been studied for its anti-inflammatory properties. The freeze dried *Perna* used was produced from the entire mussel (minus the shell) and contains a wide spectrum of potentially active constituents.

Background: Collagen II injections are used to create inflammation, redness, swelling, and pain to evaluate the effectiveness of specific agents in controlling inflammation and reversing these symptoms.

Methods: Female Wistar rats obtained from Charles River Laboratories (Wilmington, MA) were divided into two groups (control and treatment). Rats were injected with type II collagen on day zero. The treatment group had *Perna* (100 mg/kg/day) mixed in their food and were given intraperitoneal injections of DMG (100 mg/kg/day) for the duration of the study. Rats were followed for incidence and onset of CIA, as well as degree of paw inflammation. The experimental protocol was carried out under the supervision of the Clemson University Institutional Animal Research Committee.

Results: The control rats showed a 58.3% incidence of inflammation, the rats in the DMG & *Perna* combination group only showed a 22.2% incidence.

Prevention of Inflammation with <i>Perna canaliculus</i> & DMG	
Group	Incidence of Inflammation (%)
Control	58.30%
<i>Perna</i> & DMG Combo	22.2%*

Numbers are given as mean \pm s.e.m. * indicates $p < 0.05$ compared to controls.

Conclusion: In this model, the DMG & *Perna* combination was found to be effective in reducing the incidence of inflammation.

Clinical Relevance: This study, along with other data, was submitted for publication in 2007 to substantiate the use of *Perna* and DMG for preventing inflammation and supporting overall joint function.

Lawson J, et al. Prevention of inflammation with DMG and *Perna canaliculus* in a collagen-induced inflammatory rat model. Clemson University, 1990. Published in *BMC Complimentary and Alternative Medicine*, 2007, 7:20