

DIETARY CAPSAICIN MODULATION ON SELECT MACROPHAGE FUNCTION

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Capsaicin (CAP) is a pungent principle of hot pepper that has been used as a spicy food additive, preservative, and medicine. It has been shown that CAP injections in pharmacological levels caused immunologic dysfunction. However, we have found that the survival percentage of sarcoma 180-bearing mice increased in the CAP-supplemented group compared to control (Korean J.Immunol.,16(1), 65-70, 1994). We also found that the dietary CAP enhanced select immune response such as a plaque-forming cell number, serum antibody level, and lymphocyte proliferative response to mitogen, which indicated that dietary CAP may differentially modulate the immune system, unlike the immunosuppressive effect of CAP injection. In this study, we investigated the effect of dietary CAP on select macrophage function in mice. Balb/c mice were divided into 4 groups and fed diets supplemented with CAP at 0, 1, 5, 20 ppm for 3 weeks. All groups were injected with 2.0 ml sterile fluid thioglycollate prepared to the manufacturer's specifications. Peritoneal exudate cells were harvested with HBSS, centrifuged, and resuspended in EMEM containing heat-inactivated calf serum. After adherence, macrophage were stimulated with lipopolysaccharide for 8 and 24 hours for nitric oxide production, cytolytic function or tumor necrosis factor (TNFa) production. TNFa production, nitric oxide production, and cytolytic activity increased in the CAP supplemented groups compared to control. The results suggest that dietary CAP enhances macrophage activity for select tumoricidal function, probably led to its antitumoricidal effect. In vitro CAP immunomodulatory effects are underway. (Supported by KOSEF grant 93-0101-001-1)