

57-INFLUENCE OF DIETARY PROTEINS ON THE IMMUNE SYSTEM OF MICE

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ABSTRACT The effect of graded amounts of dietary laetalbumin (L) and casein (C) hydrolyzates on the immune responsiveness of C3H/HeN and DBA/2 strain mice has been investigated by measuring both the specific humoral immune response to sheep red blood cells (SRBC) and the nonspecific splenic cell responsiveness to phytohemagglutinin, concanavalin A and *Escherichia coli* lipopolysaccharide after stimulation with *Mycobacterium bovis*, strain BCG. The nutritional efficiency of these diets was similar at both 12 and 28% amino acid levels. The immune responses of mice fed the L diets were found to be significantly greater than those of mice fed the corresponding C diets, especially at the 28% level. Furthermore in the mice fed L diet, increasing the concentration of amino acid in the

diet from 12 to 28% greatly enhanced immune responsiveness by both parameters measured. In the C-fed mice, a comparable enhancement of mitogen responsiveness with increasing amino acid level of diet was seen, but there was no change in the humoral immune response. The enhancement of immune responsiveness observed in mice fed the 28% L diet was moderately reduced by the addition of phenylalanine to the diet, indicating that the lower level of this amino acid in the L protein may be of some significance. These dietary effects on immune responsiveness were remarkably similar in both mouse strains tested.

INDEXING KEY WORDS: diet - protein - immunity - mice

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58-INFLUENCE OF DIETARY LACTALBUMIN HYDROLYSATE ON THE IMMUNE SYSTEM OF MICE AND RESISTANCE TO SALMONELLOSIS

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ABSTRACT - In the present study we investigated the effect of four weeks of treatment with a diet containing lactalbumin hydrolysate (LAH: Nestlé, Vevey, Switzerland) on the immune response of C3H/HeN mice. Our data indicate that it was possible to increase the level

of this type of protein in the diet above the minimum requirement (12% LAH) and thus produce augmented humoral immune responsiveness and resistance to salmonellosis. *Lactalbumin = Whey Protein Concentrate*