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CHARACTERIZATION OF C-REACTIVE PROTEIN ON THE SURFACE OF RAINBOW TROUT LYMPHOCYTES

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The nature of rainbow trout C-reactive protein (CRP) existing on lymphocytes was investigated to analyze the relation between CRP and lymphocyte function.

CRP was detected on the surface of rainbow trout lymphocytes (S-CRP) by flowcytometer using biotinylated rabbit anti-rainbow trout CRP antibody and fluorescent-coupled avidin. S-CRP was found on 4% of head kidney lymphocytes (HKL), and 25% of peripheral blood lymphocytes (PBL). Purified CRP bound to both HKL and PBL. Stimulation of PBL by concanavalin A, lipopolysaccharide or phytohemagglutinin showed on increase of the percentage of S-CRP-positive cells but this was not the case with HKL, suggesting the lack of production of CRP by PBL.

Treatment of rainbow trout lymphocytes with anti-rainbow trout CRP antibody and rabbit complement showed a decrease of S-CRP positive cells and reduced the nonspecific cytotoxicity of lymphocytes in a ^{51}Cr-release assay. In contrast to this, treatment of lymphocytes by complement alone did not kill lymphocytes, but nonspecific cytotoxicity was clearly suppressed. Addition of purified CRP to lymphocyte and target cell suspensions did not affect the nonspecific cytotoxicity of lymphocytes.

The present study shows that CRP is present on rainbow trout lymphocytes and that some lymphocytes bearing S-CRP express nonspecific cytotoxic activity.