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Role of NKT cells inmurine malaria

Natural Killer T (NKT) cells are characterized by the presence of both Nk1.1 and CD3. We studied their role in immunocompetent and nude mice (C3H/He and C57BL/6) infected with Plasmodium yoelii (17X, lethal and 17XNL, non-lethal) by intraperitoneal passage of 10^4 infected RBC.

Parasitemia was monitored throughout the infection, and the blood smears were negative for parasites in one month with non-lethal strains and mice died of 100% parasitaemia by 10^{th} day with lethal strain Flowcytometric analysis of mononuclear cells from liver showed expansion of NKT cells with both strains of malaria and subanalysis with three colour staining revealed that majority of them were CD4"CD8" DN on recovery from malaria.

Furthermore, they were cytotoxic against parasitized RBC . Reinfection with parasites revealed that immunity against both strains developed following infection, which lasted for a period of about 6 months. Adoptive transfer of 1×10^6 immune hepatic NKT cells to irradiated C57BL/6 mice followed by reinfection with 1×10^6 P.yoelii Protected mice from Malaria. These data show that NKT cells play a protective role in murine malaria.