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Therapeutic anti-pan HLA-class II monoclonal antibody that directly induces lymphoma cell death via large pore formation

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We developed mouse anti-human pan HLA class II monoclonal antibody (mAb) by immunizing BALB/c mouse with live cells of several human lymphoma cell lines and screened by cytotoxic ability for lymphoma cell lines not used for immunization. This newly established mAb triggered cytoskeleton-dependent, but complement and caspase-independent, cell death in Hodgkin lymphoma (HL) cell lines, Burkitt lymphoma cell lines, and advanced adult T-cell leukemia cell lines but not normal lymphocytes. Intravenous injection of mAb 4713 in tumor-bearing SCID mice improved survival significantly. Treatment with this mAb induced the formation of large pores on the surface of target lymphoma cells within 30 min. This finding suggests that the cell death process induced by this anti-pan HLA-class II mAb may involve the same death signals stimulated by a cytolytic anti-pan MHC class I mAb (RE2) that also induces large pores formation in mouse lymphoma cell lines and activated normal lymphocytes. This multifaceted study supports the therapeutic potential of mAb 4713 for various forms of lymphoma.

Biography

Shuji Matsuoka has completed his Ph.D. at the age of 30 years from Tokyo University and postdoctoral studies from La Jolla Institute for Allergy and Immunology. He is the assistant professor of Pathology and Oncology, Juntendo University School of Medicine. He has published more than 30 papers in reputed journals.

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