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The role of CD244 on pathogenesis of experimental autoimmune encephalomyelitis

Jinhee Cho[1], **So Jin Bing**[2], **Areum Kim**[1], **Khinm Herath**[1], **Won Jung Lee**[1], **Kyung-Mi Lee**[3] and **Youngheun Jee**[1]
[1]Jeju National University, South Korea
[2]National Institute of Health, USA
[3]Korea University, South Korea

CD244 is a member of the signaling lymphocyte activation molecule (SLAM) family and can exhibit either activating or inhibitory effect on the cytotoxic activity of cells, depending on the density of its ligand CD48 and the availability of its adaptor protein SLAM-associated protein SAP. Although the role of CD244 has mainly been studied in virus infection, its role in autoimmune disease has not been well defined. In the present study, we examined the regulation of CD244 expression in experimental autoimmune encephalomyelitis (EAE), an induced model of autoimmune disease, and determined that the role of CD48 expression on T cells was markedly changed during EAE progression. To determine the type of CD244-expressing cells affected during the EAE progression, flow cytometry analysis was performed. In the spleen of naïve mice, most of the CD244-expressing cells were NK1.1+ NK cells although NK cells were not the major population in the spleen compared to T cells. In addition, the number of CD244+ NK cells was significantly decreased in early and peak stages of EAE compared to the naïve control. At the recovery phase, the numbers of CD244+ CD4+ T cells and CD244+ CD8+ T cells were increased relative to naïve levels, respectively, while the number of CD244+ NK cells returned to the naïve level, consistent with other reports which considered CD244 as one of exhaustion markers in various diseases. In addition, high CD48 expression was associated with IL-17a production. The reduction of CD244 expression in NK cells that infiltrated into the CNS appeared more dramatic than that in the periphery. Our results suggest that CD244 expression correlates with NK cell function during EAE progression.

Biography

Jinhee Cho is a PhD student at Jeju National University, Republic of Korea. He has research interest in Immunology, especially Th1/Th2 type immune responses. He completed his BA in Veterinary Medicine at Jeju National University, South Korea from 2008-2014 and; MS in Veterinary Medicine at Jeju National University, South Korea from 2014-2016.

joejh@jejunu.ac.kr

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