

[P-50]

**The effect of polysaccharide isolated from the root of
Acanthopanax koreanum on B cell activation**

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Many polysaccharides isolated from plants have been shown to enhance various immune responses *in vivo* and *in vitro*. Here we demonstrate that polysaccharide isolated from the root of *Acanthopanax koreanum* (AK) has a unique mode of immunostimulation with regard to its cell-type specificity. AK was found to markedly increase polyclonal IgM antibody production and the proliferation of B cells. However, AK did not affect the proliferation of T cells, the IL-2 and IFN-g expression of Th1 cells, or the IL-4 expression of Th2 cells. AK also did not increase iNOS transcription and NO production in macrophages. AK activity was not affected by polymyxin B, a specific inhibitor of LPS, suggesting that AK had different mode of action from LPS. AK activity in B cells from C3H/HeJ, known to have a defective TLR4, was decreased in comparison with that in control B cells from C3H/HeN mice. Anti-TLR2, anti-TLR4, anti-CD19 and anti-CD79b, but not anti-CD38, antibodies blocked B cell proliferation, indicating the possible cellular binding sites of AK. AK-induced B cell proliferation was significantly inhibited by PTK inhibitor genistein, PI3K inhibitor wortmannin, and p38 inhibitor SB203580, but not by MEK-1 inhibitor PD98059. In conclusion, our results demonstrate that AK, plant-derived polysaccharide, has a distinct mode of action in that it selectively activated B cells.

Keyword : *Acanthopanax koreanum*;B cells;Macrophages;T cells