2009年　第68回日本癌学会学術総会

Gagome-kombu Fucoidan enhances natural immunity through a toll-like receptor(TLR)and activate anti-tumor immunity
ガゴメ昆布フコイダンは、Toll-like receptorを介してNK細胞を活性化し抗腫瘍作用を増強する

We have reported that orally-administered fucoidan(Fd) from Gagome-kombu(*Kjellmaniella crassifolia*) exhibits the strong anti-tumor effect in mice by activating natural killer (NK) cells and Peyer's patch cells, which produce IFN-γ. It was also found that splenocytes stimulated by Fd in vitro suppressed Sarcoma-180 growth in vivo when the splenocytes were transferred into the tumor-bearing mice intraperitoneally. To investigate the mechanism of anti-tumor effect of Fd more precisely, we compared the degree of NK activation of the splenocytes prepared from MyD88 KO mice and the wild type(C57BL/6J) mice. Gagome-kombu fucoidan enhanced NK cell activity dose-dependently (from 2 to 16μg/mL) in the wild type mice from 9.9% to 21.5% of NK activity compared to control 8.5%. However, in MyD88 KO mice, no enhancement of NK activation was detected. Also, IFN-γ production was enhanced only in the wild type. Production of some cytokines like IFN-γ is well-known enhanced by MyD88 activation through TLRs. Therefore, these results indicate that orally-administered Fd enhances NK cell activity and anti-tumor immunity through MyD88 dependent TLRs.