

2<sup>nd</sup> Global Summit on

# ONCOLOGY & CANCER

March 12-14, 2018 Singapore

## Effect of molecular weight of fucoidan on its anticancer-activity

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Different molecular weight fucoidan samples were prepared and its anticancer activity was compared. In the case of MCF-7 human breast cancer cell line, the proliferation inhibition increased depending on the concentration of fucoidan. At a low concentration of fucoidan (0.5 mg/mL), cytotoxicity was not significantly different between high molecular weight and low molecular weight fucoidan samples. However, the 42% cytotoxicity of high molecular weight fucoidan significantly increased up to 66% of low molecular weight fucoidan samples at a concentration of 2 mg/mL. When the concentration increased to 4 mg/mL, the difference in cytotoxicity became more pronounced. The effects of molecular weight of fucoidan were also investigated in other cancer cells including AGS and HepG-2. In the case of AGS (human stomach cancer cell line), the cytotoxicity of high molecular weight fucoidan was 35% and those of low molecular weight fucoidans were up to 47%. The cytotoxicity of high molecular weight fucoidan against HepG-2 was 35% and that of low molecular weight fucoidan increased up to 57%. The effect of molecular weight of fucoidan was also carried out on inhibitory effect on cell transformation. TPA is a highly potent tumor promoter and is widely used for cell transformation. JB6 mouse epidermal cells were treated with TPA in the absence or presence of fucoidan samples. The low molecular weight fucoidan was shown to have a higher inhibitory effect on cell transformation.

### Biography

Jong-il Choi has completed his PhD from KAIST, South Korea and Postdoctoral studies from University of Minnesota. Presently, he is the Professor at Chonnam National University, South Korea and has published more than 100 papers in reputed journals.

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