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Natural Biological Response Modifier (MGN-3) Shown to be Effective Against Tumor Cell Growth

Mamdooh Ghoneum, Ph. D., Chief of Research, Department of Otolaryngology, Drew University of Medical Science
Ken H. Tachiki, Ph. D., Koichi Ueyama, Ph. D., Takashi Makinodan, Nalini Makhijani and Dean Yamaguchi, M. D., Ph. D.

Recent advances in research on MGN-3 showed that in addition to having potent immunomodulatory function and anti-HIV activity, this compound can be effective in directly targeting certain cancer cells. MGN-3 is a new biological response modifier (BRM) that is an arabinoxylan compound which is a polysaccharide containing hemicellulose-extract of rice bran modified by enzymes from Shiitake mushroom.

In the present preliminary study, the direct effects of MGN-3 on skin cancer cell growth and cytokine production were evaluated. Incubation of a squamous cell carcinoma (SCC13) cell line with MGN-3 arrested tumor cell growth (30% decrease in cell number after 48 hours and 50 % at 72 hours of culture) as compared to control SCC13 cells grown in a MEM media alone which continued to increase in cell number. Employing flow cytometry procedures, analyses showed that after 16 hours of treatment of SCC13 cells with MGN-3, there was a five-fold increase in intracellular levels of interleukin 10 (IL-10), but no apparent change in content of interferon- γ (INF- γ). ELIZA analyses showed higher (8-fold) levels of IL-10 and a 3-fold increase in IL-12 in the culture media of SCC13 cells. However, little change in INF- γ concentration was detected. The effects of MGN-3 on other cell lines, such as normal and tumor breast cells and prostate cancer cells, were also evaluated.

In conclusion, our findings indicate that MGN-3 acts by not only enhancing the host immune function but also through a direct alteration of tumor cell growth and production of cytokines. These findings may offer a mechanism of action which could explain the high clinical success and impressive benefits of MGN-3 treatment obsearved with 32 patients over 4 years. MGN-3, commercially known as Bio Bran, was provided by Daiwa Pharmaceuticals Company. Ltd., Tokyo, Japan. Suported in

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