

***In Vivo* Tumor Inhibitory Effects of Arabinoxylan Rice Bran (MGN-3/biobran) on Ehrlich Carcinoma – Bearing Mice**

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This study was undertaken to investigate the *in vivo* antitumor activity of the modified rice bran arabinoxylan compound (MGN-3/biobran) against Swiss albino mice bearing Ehrlich Ascites Carcinoma (EAC) cells. Female Swiss albino mice were inoculated in the right thigh and were intra-tumorally injected with MGN-3 after tumor growth (day 11). MGN-3 treatment caused a significant delay of tumor growth that was noticed at day 28 and maximized to -44.8%, at day 45 ($P < 0.05$) as compared to controls.

Two mechanisms underlying MGN-3 effect were investigated. First, MGN-3 – induced apoptotic effect against EAC cells. Flow cytometry analysis and Giemsa stained cytospin preparations demonstrated a significant increase in percent EAC cell apoptosis upon treatment with MGN-3 (58% dead cells as compared to control 9.5%). A second mechanism by which MGN-3 caused tumor regression involved the enhancement of NK cell activity. Mice injected with MGN-3 (100 ug/ml) in the thigh for 2 wks caused a significant increase (2 folds) in splenic NK activity as compared with controls. MGN-3-treated NK cells at different E:T ratios equaling 5.5% at 12.5:1, 13.6% at 25:1, 17.4% at 50:1 and 22.1% at 100:1, while the corresponding values for the controls were 2.7%, 5.1%, 8.4%, and 10.6.6%. When NK cell activity was calculated in terms of LUs, NK cell activity in MGN-3 treated mice showed (27.1LUs) as compared to controls (8.3LUs). The increase in NK activity was associated in an increase in the percent of conjugate-forming cells. MGN-3-treated mice showed a significantly higher value (27.5%) as compared to control mice (14%), representing two fold increase. These data may have clinical implications for the treatment of solid cancer.