

A study to evaluate the effect of BioBran on canines with cancer

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BioBran is reported to possess immunomodulatory effects by promoting NK cell activities, macrophage activities, dendritic cell maturations, B and T cell proliferations, and by exerting anti-inflammatory activities. Additionally, this substance has been shown to possess tumor reduction, tumor-marker lowering, and QOL- improvement effects. These effects were reported from *in vitro*, animal (mouse or rats), and human clinical studies. However, effects of BioBran on canines have not been reported. Therefore, we evaluated the effects of BioBran on canines by an *in vitro* study on NK cell activities in canines, and by a clinical study on canines with cancer.

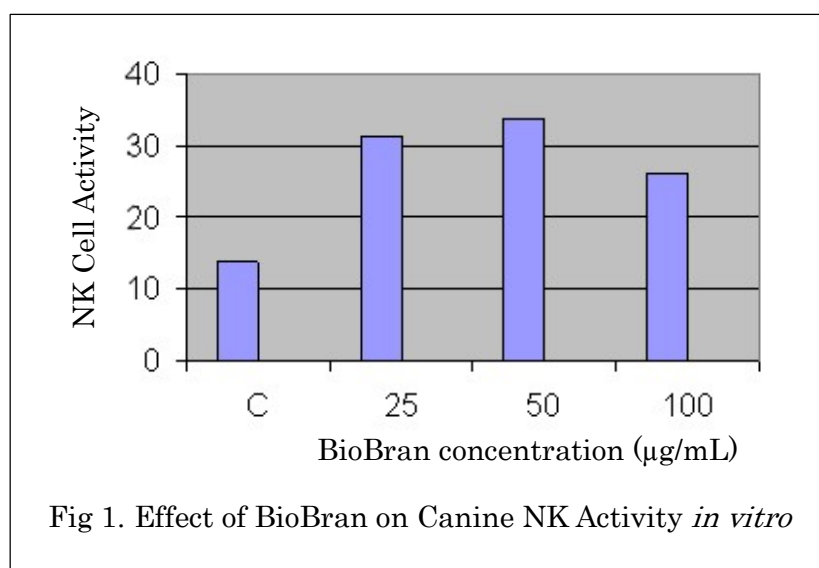
1. NK cell activity

Materials and Methods:

BioBran was dissolved in PBS at different concentrations (25, 50, 100 $\mu\text{g/ml}$), and added to fresh peripheral blood lymphocytes for 16 hr. NK activity was examined by 4- hour Cr- release assay against CTAC cancer cells as target.

Results:

BioBran treatment enhanced NK cell activity at all concentrations used (Figure 1). These results show that BioBran exhibits enhancing effects also in canine NK cell activity.



2. Clinical study

Methods

This study was a double-blind placebo-controlled trial to evaluate the effect of BioBran on 18 canines which were treated with chemotherapy for multicentric lymphoma. These 18 canines were randomly allocated into two groups. The BioBran group (n= 10) was orally administered with BioBran at 40 mg/kg/day. The control group (n= 8) was administered with the same dosage of placebo which was substance identical in appearance to the active treatment. After 4 weeks from the baseline, the effect of BioBran on complete response rates of tumor shrinkage was investigated.

Results

The BioBran group showed higher complete response rates compared to the control group during 1 to 4 weeks of treatment. These results suggest that BioBran has potential effects on canines with multicentric lymphoma.

