

# **BioBran Reduces Side Effects of Chemotherapy in Breast Cancer Patients**

BioBran = ImunoBran

# BioBran

Rice Bran Arabinoxylan Compound (RBAC) is an immunomodulator made from a rice bran extract that has been enzymatically modified with an enzyme complex from the shiitake mushroom.

Modified Arabinoxylan from Rice Bran is known by the names MGN-3, Biobran, and ImunoBran.

### 3. Effect of Reducing Side Effects of Chemotherapy in Breast Cancer Patients

#### Objective:

To assess the effect of reducing chemotherapy induced side effects in terms of tiredness, anorexia, vomiting and hair loss and Quality of Life in terms of weight loss.

#### Design: Randomized controlled trial

Subjects: 50 patients of histologically proven locally advanced breast cancer patients  
6 cycles of chemotherapy (6 months)

Group A (n=25):

BioBran: 3 g/day, one week before and one week after chemotherapy

Group B (n=25): Chemotherapy Alone

Source: "BIOBRAN MGN-3" Effect of reducing side effects of chemotherapy in breast cancer patients."  
Masood Al, Sheikh R, et al, *Professional Med J* Feb 2013, 20(1): 013-016

## 4. Effect of Reducing Side Effects of Chemotherapy in Breast Cancer Patients

### Results:

Comparison of chemotherapy-induced side effects between two groups:

Chemotherapy-induced side effects	Group A (n=25)	Group B (n=25)
No Tiredness/No Anorexia	80%	12%
Nausea/Vomiting	40%	100%
Hair Loss	28%	100%
Weight Gain	64%	0%
Weight Loss	0%	84%
Blood transfusion not required	90%	1%

Source: "BIOBRAN MGN-3" Effect of reducing side effects of chemotherapy in breast cancer patients."  
Masood Al, Sheikh R. et Al, *Professional Med J* Feb 2013, 20(1): 013-016

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## **5. Effect of Reducing Side Effects of Chemotherapy in Breast Cancer Patients**

### **Conclusion:**

The study showed that, by helping to optimize the immune system, BioBran can not only help maximize treatment success, but also minimize treatment side effects and improve quality of life during treatment and in recovery.

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## **6. BioBran Maintains a Strong Immune System**

**Lymphocytes: Increases T-cell and B-cell proliferation, even in cancer patients**

**T-Cells: BioBran 1000 increases levels of helper and cytotoxic T cells and balances the CD4/CD8 ratio**

**Macrophages: Activates macrophages**

**Dendritic Cells: Activates dendritic cells**

**Natural Killer cells (NK cells): Activates NK cells**

## 7. Natural Killer Cells (NK Cells)

NK Cells Are Essential to Early Defense Surveillance  
Function of Immune System

- rapid release of cytokines (e.g., interferon- $\gamma$  and interleukin 4)
- attack cells that have been infected by microbes
- collectively regulate multiple aspects of essential immune responses.

Eliminates Unhealthy or Senescent Cells by Injecting  
Intrinsic Granules to induce *apoptosis*

## 8. NK Cells and Disease Control

Several Studies show that people with low NK cell activity are more susceptible to:

1. Cancer
2. Autoimmune Diseases
3. Infections (e.g. Lyme Disease, Herpes Virus, influenza Virus )
4. Chronic Fatigue Immune Dysfunction (CFID) Syndrome of increased severity
5. Immune Senescence



## Conclusion

The researchers concluded that by helping to optimize the immune system, Biobran/MGN-3 can not only help maximize treatment success, but also help minimize treatment side effects and improve quality of life during treatment and in recovery.