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Title: The bacterial adjuvants: Lactobacillus delbrueckii as a therapy for breast cancer of inbred Balb/C mice

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Abstract: Background and objectives: Breast Cancer (BC) is a common invasive women cancer with 458,503 deaths worldwide in 2008. Surgery, drugs, radiation and immunotherapy are common therapies but probiotics recently used for the BC prevention and treatment. Probiotics are live nonpathogenic bacteria or its components that may be helpful and has anti-mutagenic effects. This study was evaluated the Lactobacillus delbrueckii subsp. Bulgaricus (Ld) probiotic effects on BC in inbred Balb/C animal model.

Material and Methods: MCF-7 model of cancer in female homozygous inbred Balb/C mice (2-3 weeks) was used. Bacteria were cultured on MRS-agar (1109 CFU/ml). Groups; Probiotic, MCF-7 control and naïve control were used and fed daily by gastric intubation with 200 μl of live bacteria and 200 μl of PBS in last groups respectively addition to normal feeding. The treatment was started 7 days before and continued until day 50 after cancer inoculation. The IL-2, IL-4 and INF-Gamma of plasma and stimulated splenocytes supernatant, plasma Igs, splenocyte proliferation (MTT test), Delayed type hypersensitivity test (DTH), gut wall integrity were tested between groups with statistical tests.

Results: The data were showed that Ld can improved cell mediated immunity and shift the immunity to Th2, it can increase the secretion of Igs, increase the cell proliferation in probiotic group and increase the delayed hypersensitivity response to tumor antigen significantly. The Ld can improve the gut wall integrity also.

Conclusion: The probiotic Lactobacillus delbrueckii can use as a bacterial adjuvant to improve the immune system against tumor cells in breast cancer.

Lactobacillus delbrueckii, Breast Cancer, Probiotic, MCF-7, Balb/C

Presentation: Poster