

FINAL VERIFIED ENGLISH VERSION (ERROR-FREE) INFLUENCE OF HERBAL PREPARATIONS ON THE COOPERATION OF T AND B LYMPHOCYTES

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Relevance of the Study

The development of an immune response to thymus-dependent antigens, such as sheep red blood cells (SRBC), requires cooperative interactions between T and B lymphocytes. This cooperation is essential for the transformation of B cells into plasma cells—the main producers of antibodies. Therefore, assessing the effects of herbal preparations on these cooperative interactions is of considerable scientific and practical importance.

Objective of the Study: to investigate the effect of herbal preparations on the cooperation between T and B lymphocytes.

Materials and Methods:

We conducted experiments to evaluate the influence of herbal preparations on T–B lymphocyte cooperation during the immune response. White mice were exposed to total-body irradiation at a lethal dose of 8 Gy. Subsequently, the animals were injected with syngeneic bone marrow cells (a source of B lymphocytes, 10^7 /mL), lymph node cells (a source of T lymphocytes, 2×10^6 /mL), and SRBC at a dose of 2×10^8 /mL. On Day 9, the mice were euthanized, and the number of antibody-forming cells (AFCs) in the spleen was determined. The herbal preparations under investigation were administered once intraperitoneally, 24 hours after irradiation. For comparison, the immunomodulator Immunomodulin was administered at a dose of 0.01 mL/kg.

Results:

It was established that spleens of animals receiving syngeneic T and B lymphocytes formed 46.0 ± 6.8 AFCs.

The findings showed that: Ginger enhanced T–B lymphocyte cooperation 1.6-fold. The herbal preparation Doctor Ali 1 Tea Infusion significantly increased antibody formation 1.5-fold (67.0 ± 3.8).

Comparative analysis revealed that Immunomodulin, at a dose of 0.01 mL/kg, increased the number of AFCs in the spleen 2.6-fold and the total number of splenocytes 2.4-fold.

These results demonstrate that herbal preparations possess the ability to stimulate the cooperative interaction of T and B lymphocytes during the immune response.

Conclusion

1. Herbal preparations (Ginger and Doctor Ali 1 Tea Infusion) stimulate the cooperative interaction between T and B lymphocytes involved in the immune response.