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RM-11, an isoxazole derivative, accelerates restoration of the immune function in mice treated with cyclophosphamide

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Abstract:
The aim of this study was to evaluate efficacy of an isoxazole derivative RM11 to accelerate reconstitution of selected immune activities in cyclophosphamide (CP)-immunocompromised mice. We demonstrated that administration of fifteen 10 μg intraperitoneal doses of RM11, following a sublethal (200 μg/kg) dose of CP, significantly stimulated the number of antibody-forming cells (AFC) to sheep erythrocytes (SRBC) as determined 35 days after the CP treatment. Similarly, treatment of the CP-injected mice with 7 doses of RM11 significantly enhanced generation of delayed type hypersensitivity (DTH) to ovalbumin (OVA). Moreover, in that model, the treatment of mice with RM11 accelerated the process of myelopoiesis. RM11 also counteracted the suppressive action of methotrexate (MTX) in the *in vitro* model of the humoral immune response to SRBC. The phenotypic studies with fluorocytometer revealed that intraperitoneal 10 μg dose of RM11 significantly elevated the percentage of mature ($CD3^+$, $CD4^+$ and $CD8^+$) T cells in the spleen and down-regulated the content of $CD19^+$ cells. We conclude that RM11 may be of potential therapeutic value in restoration of the immune status in patients undergoing chemotherapy.

Key words:
isoxazoles, mice, immune response, cyclophosphamide, methotrexate