

Age-Dependent Effect of Peptidoglycan Monomer Linked with Zinc on the Generation of Suppressor Macrophages in Mice

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Aim. To quantify the influence of age of mice treated with peptidoglycan-monomer linked with Zn (PGM-Zn) on the generation of peritoneal exudate cells (PEC) with suppressive activity.

Method. BALB/c mice, aged 10-12 ("old") or 2.5-3.5 ("young") months were treated every fifth day during 26 days with injections of PGM-Zn (10 mg/kg i.p.) or with the same amount of the solvent. One day after the last injection, PEC cells were collected and co-cultured with syngeneic old and young splenocytes, stimulated with ConA. Three days later, the proliferation of "old" or "young" splenocytes in the presence of "old" or "young" PEC from PGM-Zn or NaCl-treated mice was evaluated.

Results. "Old" control splenocytes were less reactive to ConA than those obtained from young animals. Pre-treatment of donor mice with PGM-Zn induced the appearance of PEC in both age groups, which inhibited proliferative response to ConA in the population of both "young" and "old" control splenocytes. However, only "young" PGM-Zn-induced PEC had an inhibitory effect on spontaneous proliferation of "old" and "young" control splenocytes, and displayed the ability to induce an additional decline of blastogenesis of splenocytes from old PGM-Zn-treated mice, pointing to a greater suppressive vigor of young macrophages. In contrast, control PEC from both young and old NaCl-treated donors produced a stimulating effect on low blastic transformation found in the cultures of the "old" and "young" PGM-Zn-treated splenocytes. Again the corrective effect of "young" PEC was greater than the effect of the "old" ones.

Conclusion. PGM-Zn may induce the appearance of peritoneal macrophages which have suppressive effect on spontaneous and ConA-induced blastogenesis of splenocytes. The effects were, however, dependent on age and proliferative activity of responder cells.

Key words: *aging; concanavalin A; macrophages; mice*

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