

RELATIONSHIP BETWEEN GANGLIOSIDES AND MYELOSUPPORTIVE CAPACITY OF STROMAL CELLS.

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Stroma-mediated myelopoiesis depends upon growth factors and an appropriate intercellular microenvironment. Previous studies have demonstrated that gangliosides, produced by two stromal cells types, are required for optimal myelosupportive function. Here, we analyze the pattern of cell production and shedding of gangliosides in bone marrow stroma and primary skin fibroblasts and compare the ability of these stromata to sustain the survival and proliferation of myelopoietic progenitor cells. Although the two stromal cells synthesize the same gangliosides, their relative GM3 contents were quite different. Ganglioside shedding was similar to the ganglioside synthesis pattern, but net myelosupportive activity was significantly different. Inhibition of ganglioside synthesis or neutralization of GM3 by a monoclonal antibody in stroma cell supernatants decreased the FDC-P1 proliferation. Thus, the differences in the capacities of presented or soluble growth factors to sustain myeloid cell proliferation may be related to differences in the concentration of gangliosides present at the membrane or their shedding to the supernatant.

Keywords: gangliosides, stromal cells, myelopoiesis, intercellular microenvironment, GM-CSF.

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