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The Effect of Iron Bound Transferrin on Megakaryocytopoiesis in Bone Marrow Culture

Selda DELİORMAN

Ruhi UYAR

Yılmaz ALTUNER

Department of Physiology, Faculty of Medicine,  
Osmangazi University, Eskişehir-Turkey

 [Keywords](#)  
 [Authors](#)



[medsci@tubitak.gov.tr](mailto:medsci@tubitak.gov.tr)

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**Abstract:** Megakaryocytopoiesis is a complicated phenomenon which involves the proliferation of progenitor cells, formation of a polyploid nucleus, cytoplasmic changes and formation of thrombocytes. It has been suggested that megakaryocytopoiesis resembles erythropoiesis. It is well known that iron is a required element for the proliferation of erythrocytes, lymphocytes and cancer cells but no consensus has yet been reached about its role in thrombocytopoiesis. Although thrombocytosis is generally found in patients with iron deficiency anemia, thrombocytopenia is also observed. Cell surface receptors for transferrin were initially characterized on cells with high iron requirements including hemoglobin producing cells and placental cells. More recently, it was found that transferrin receptors also exist on the other cells. Therefore, we assumed that megakaryocytes may have transferrin receptors and iron may affect the growth of megakaryocytes. We examined the proliferation of rat megakaryocytic cells with the presence of 50, 150, 300 µg/ml iron-saturated transferrin in a plasma clot culture system. According to our preliminary results, iron might not be required for the proliferation of megakaryocytic cells in vitro.

**Key Words:** Iron, Transferrin, Megakaryocytopoiesis, Bone marrow.

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