ABSTRACT

The present inventors discovered that the administration of an agonistic minibody (VB22B sc(Fv)2) against the TPO receptor resulted in not only the induction of human megakaryocyte-specific differentiation (increase in platelet precursor cells), but also the engraftment of transplanted hematopoietic stem cells derived from human cord blood (CD34-positive cells) and significant increase in multi-lineage hematopoietic precursor cells. TPO and TPO receptor agonists can be used as agents for promoting the growth of CD34-positive hematopoietic cells or agents for promoting the engraftment of transplanted cells in the bone marrow, which can be effective when administered alone (without using G-CSF and erythropoietin in combination) after hematopoietic stem cell transplantation (in particular, cord blood transplantation). Furthermore, TPO and TPO receptor agonists can be used as agents for promoting the growth and/or differentiation of multilineage hematopoietic precursor cells and agents for promoting the recovery of multilineage hematopoiesis.