# 学位論文の要旨

三重大学

| 所属 | 三重大学大学院医学系研究科<br>甲　生命医科学専攻　臨床医学系講座<br>小児科学分野 | 氏名 | 花木（はなき）　良（りょう） |
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主論文の題名

Donor-derived M2 macrophages attenuate GVHD after allogeneic hematopoietic stem cell transplantation

主論文の要旨


**Introduction**

Graft-versus-host disease (GVHD) is frequent and fatal complication following allogeneic hematopoietic stem cell transplantation (HSCT) and characteristically involves skin, gut, and liver. Macrophages promote tissue regeneration and mediate immunomodulation. Macrophages are divided into two different phenotypes, classically activated M1 (proinflammatory or immune-reactive macrophages) and alternatively activated M2 (anti-inflammatory or immune-suppressive macrophages). Anti-inflammatory effect of M2 macrophage led us to test its effect in the pathophysiology of GVHD.

**Methods**

GVHD was induced in lethally irradiated BALB/c mice. M2 macrophages derived from donor bone marrow (BM) was administered intravenously, while controls received donor BM-mononuclear cells and splenocytes. Animals were monitored for clinical GVHD and analyzed.

**Results**

We confirmed that administering donor BM-derived M2 macrophages attenuated GVHD severity and prolonged survival after HSCT. Moreover, donor BM-derived M2 macrophages significantly suppressed donor T cell proliferation by cell-to-cell contact in vitro.

**Conclusions**

We showed protective effects of donor derived M2 macrophages on GVHD and improved survival in a model of HSCT. Our data suggest that donor-derived M2 macrophages offer the potential for cell-based therapy to treat GVHD.