

CLAIMS

1. A genetically modified non-human animal comprising in its genome a nucleic acid encoding human M-CSF, a nucleic acid encoding human IL-3, a nucleic acid encoding human GM-CSF, a nucleic acid encoding human SIRPA and a nucleic acid encoding human TPO, wherein each of the nucleic acids encoding human M-CSF, human IL-3, human GM-CSF, human SIRPA and human TPO is operably linked to a promoter, and wherein the animal expresses human M-CSF polypeptide, human IL-3 polypeptide, human GM-CSF polypeptide, human SIRPA polypeptide and human TPO polypeptide.
2. The genetically modified non-human animal of claim 1, wherein the animal is immunodeficient.
3. The genetically modified immunodeficient non-human animal of claim 2 wherein the animal comprises a recombination activating gene 2(Rag2) gene knock-out.
4. The genetically modified immunodeficient non-human animal of claim [[3]]2 or 3 wherein the animal comprises an IL2 receptor gamma chain (IL2rg) gene knock-out.
5. The genetically modified non-human animal of any one of the preceding claims, wherein the animal is a rodent.
6. The genetically modified non-human animal of claim 5, wherein the animal is a mouse.
7. The genetically modified animal of any one of the preceding claims, further comprising human hematopoietic cells.
8. The genetically modified animal of any one of the preceding claims, further comprising a human cancer cell.
9. The genetically modified animal of claim 8, wherein the human cancer cell is a leukemia cell or a melanoma cell.
10. A method of hematopoietic stem and progenitor cell (HSPC) engraftment comprising the step of administering at least one HSPC to a genetically modified non-human animal,

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1. A genetically modified non-human animal comprising in its genome a nucleic acid encoding human M-CSF, a nucleic acid encoding human IL-3, a nucleic acid encoding human GM-CSF, a nucleic acid encoding human SIRPA and a nucleic acid encoding human TPO, wherein each of the nucleic acids encoding human M-CSF, human IL-3, human GM-CSF, human SIRPA and human TPO is operably linked to a promoter, and wherein the animal expresses human M-CSF polypeptide, human IL-3 polypeptide, human GM-CSF polypeptide, human SIRPA polypeptide and human TPO polypeptide.

2. The genetically modified non-human animal of claim 1, wherein the animal is immunodeficient.

3. The genetically modified immunodeficient non-human animal of claim 2 wherein the animal comprises a recombination activating gene 2(Rag2) gene knock-out.

4. The genetically modified immunodeficient non-human animal of claim 2 or 3 wherein the animal comprises an IL2 receptor gamma chain (IL2rg) gene knock-out.

5. The genetically modified non-human animal of any one of the preceding claims, wherein the animal is a rodent.

6. The genetically modified non-human animal of claim 5, wherein the animal is a mouse.

7. The genetically modified animal of any one of the preceding claims, further comprising human hematopoietic cells.

8. The genetically modified animal of any one of the preceding claims, further comprising a human cancer cell.

9. The genetically modified animal of claim 8, wherein the human cancer cell is a leukemia cell or a melanoma cell.

10. A method of hematopoietic stem and progenitor cell (HSPC) engraftment comprising the step of administering at least one HSPC to a genetically modified non-human animal,