Tg-CXCL2(OE) transgenic mice may be bred to generate Tet-Off/Tet-On double mutant mice with conditional (inducible/reversible) spatial and temporal overexpression of the hematopoietic stem cell regulator Cxcl2 (chemokine (C-X-C motif) ligand 12) and a tdTomato reporter. This strain may be useful in studies of hematopoietic development, cancer and transplantation therapies.

Donating Investigator
Camilla Forsberg, University of California Santa Cruz
Detailed Description

Cxcl2 (chemokine (C-X-C motif) ligand 12) encodes a chemokine that functions as a major regulator of hematopoietic stem cell (HSC) trafficking, proliferation and survival. Tg-CXCL2(OE) mice express polyhistidine-tagged mouse Cxcl2 and a membrane bound tdTomato reporter under the control of a tetracycline-responsive promoter element (TRE; tetO). Mice hemizygous for the transgene are viable and fertile. The viability/fertility of homozygotes has not been determined.

When combined with a reverse tetracycline-controlled transactivator protein (rtTA) such as B6.Cg-Gt(ROSA)26Sor<sup>tm1(rtTA*M2)Jae</sup> and induced with doxycycline, double mutant mice develop increased numbers of multipotent progenitors in the bone marrow and spleen, improved hematopoietic stem and progenitor cell mobilization into the blood as well as radioresistance of hematopoietic stem and progenitor cells.

Development

Control Suggestions

Selected References

Genetics

Tg(tetO-Cxcl2,-tdTomato)#Forsb

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support
Genotyping Protocols
Genotyping resources and troubleshooting

Breeding Considerations

Hemizygotes are viable and fertile. The viability/fertility of homozygotes has not been assessed.

Additional Breeding and Husbandry Support

Citation
When using the CXCL12 Tg, Tg-CXCL12(OE) mouse strain in a publication, please cite the originating article(s) and include MMRRC stock #67169 in your Materials and Methods section.

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