

VE-Cadherin-Cre-recombinase Transgenic Mouse

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INNOVATION

The ability to target gene deletion to a specific cellular compartment via the Cre/loxP system has been a powerful tool in the analysis of broadly expressed genes. Researchers at UCLA generated a transgenic mouse line in which expression of Cre-recombinase is under the regulatory control of the VE-Cadherin promoter. Temporal distribution and activity of the enzyme was evaluated with two independent Cre reporter lines. Histological analysis was performed throughout development and in the adult. Recombination of lox P sites with subsequent expression of beta-galactosidase or GFP was detected as early as E7.5 in endothelial cells of the yolk sac. Progressive staining of the embryonic vasculature was noted from E8.5-13.5; however, more contiguous reporter expression was only seen by E14.5 onward in all endothelial compartments including arteries, veins, and capillaries. In addition, the team found Cre activity in lymphatic endothelial cells. Unlike other endothelial-specific Cre mice, this model showed expression in the adult quiescent vasculature. Furthermore, the constitutive nature of the VE-Cadherin promoter in the adult can be advantageous for analysis of gene deletion in pathological settings. In addition, these mice may be useful in studies of the cardiovascular system, including angiogenesis, and endothelial and hematopoietic cell lineages.

RELATED MATERIALS

- ▶ [VE-Cadherin-Cre-recombinase transgenic mouse: a tool for lineage analysis and gene deletion in endothelial cells; Dev Dyn. 2006 Mar;235\(3\):759-67.](#)

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Transgenic Mice for Endothelial Cell Research \(Ve-Cadherin Cre-Recombinase - Rosa26r-LacZ\)](#)
- ▶ [Dual Transgenic Mice for Endothelial Cell Research \(Ve-Cadherin Cre-Recombinase - Rosa26r-YFP\)](#)
- ▶ [Floxed Mouse for Progesterone Receptor \(PRCE\)](#)
- ▶ [VE-cadherin-CreERT2 Transgenic Mouse](#)

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OTHER INFORMATION

KEYWORDS

Mouse model, research tool, Vascular endothelial cadherin, VECadherin, CD-144, cadherin-5, endothelial

CATEGORIZED AS

- ▶ [Research Tools](#)
- ▶ [Animal Models](#)

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