

Title: Supplementary Movie 1

Description: Venous sprouting and migration in wild-type embryo. Over-night imaging of a wild type embryo starting at 32hpf showing the sprouting and migration of venous endothelial from the PCV. Venous and lymphatic endothelial cells were labeled with flt4:mCit.

Title: Supplementary Movie 2

Description: Venous sprouting is blocked in adamts3; adamts14 double mutant embryos. Over-night imaging of an adamts3; adamts14 double mutant in which venous and lymphatic endothelial cells were labeled with flt4:mCit, starting at 32hpf.

Title: Supplementary Movie 3

Description: 3D-reconstruction and surface rendering depicting the expression of the adamts3 reporter line at the horizontal myoseptum at 48hpf. In the adamts3:Gal4FF; UAS:GFP; kdrl:mCherry double transgenic embryo adamts3-expressing cells are highlighted in green and endothelial cells in red.

Title: Supplementary Movie 4

Description: 3D-reconstruction and surface rendering of adamts3+ cell transplantations giving rise to motoneurons. Depicted is a rescue of vISV and PL formation in an adamts3; adamts14 double mutant at 48hpf. Transplanted adamts3-expressing cells are shown in green, all transplanted cells are labeled in blue (dextran-Alexa647); flt4:mCit-positive endothelial cells are highlighted in yellow (or red in the surface rendering).

Title: Supplementary Movie 5

Description: 3D reconstruction and surface rendering of a transplantation giving rise to adamts3-expressing mesenchymal cells. Shown is a region exhibiting a rescue of vISV and PL development in an adamts3; adamts14 double mutant at 48hpf. adamts3-expressing cells are shown in green and flt4:mCit positive endothelial cells are highlighted in yellow (or red in the surface rendering).

Title: Supplementary Movie 6

Description: 3D reconstruction and surface rendering of floorplate and PL in the transplantation of adamts14-expressing cells. The movie showed the rescue region of adamts3; adamts14 double mutant at 48hpf. Dextran-Alexa647 labeled floor plate were in grey; flt4:mCit positive cells were in green; flt1:tdTom positive cells were in red.

Title: Supplementary Movie 7

Description: 3D reconstruction and surface rendering of mesenchymal cells and PL in the transplantation of adamts14-expressing cells. The movie showed the rescue region of adamts3; adamts14 double mutant at 48hpf. Dextran-Alexa647 labeled transplanted cells were in grey; flt4:mCit positive cells were in green; flt1:tdTom positive cells were in red. In order to highlight the cells at segment boundary and horizontal myoseptum, surface rendering was applied.

Title: Supplementary Movie 8

Description: 3D reconstruction and surface rendering of mesenchymal cells at HM and PL in the transplantation of adamts14-expressing cells. The movie showed the rescue region of adamts3; adamts14 double mutant at 48hpf. Dextran-Alexa647 labeled transplanted cells were in grey;

flt4:mCit positive cells were in green; flt1:tdTom positive cells were in red. In order to highlight the cells at the horizontal myoseptum, surface rendering was applied