

International Vascular Biology Meeting 2018



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W122**BMP9 phenotypically alters the pulmonary microvascular endothelium in Pulmonary Arterial Hypertension**

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- BMP9 was tested to reinstate Bone Morphogenic Protein (BMP) signaling in pulmonary endothelial cells from Pulmonary Arterial Hypertension (PAH) patients.
- BMP9 restored BMP receptor levels in the microvascular endothelium (MVEC) of PAH patients, but also activated TGFβ signaling.
- Repetitive BMP9 treatment induced phenotypic changes in PAH MVEC, including loss of junctional VE-cadherin and consequently decreased barrier integrity.

W123**Nanoparticle-Encapsulated Nucleoside-Modified VEGFC mRNA (VEGFC mRNA-LNP) Induces Organ Specific Lymphatic Growth and Reverses Lymphedema**

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- We have developed a novel nanoparticle-encapsulated nucleoside-modified codon-optimized VEGFC mRNA system, which is a novel application of the mRNA-LNP platform
- VEGFC mRNA-LNP complex administration induces organ specific lymphatic growth and active lymphatic function in the newly formed lymphatic vessels
- VEGFC mRNA-LNP treatment reverses experimental lymphedema

W124**Cleaver-1 controls site-specific homing of lymphocytes to the spleen**

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- Red pulp is the major site of lymphocyte entry into the spleen
- Cleaver-1 is expressed exclusively on vessels in the splenic red pulp
- Cleaver-1 controls lymphocyte entry into the spleen

W125**Tetraspanin18 is a novel regulator of developmental and pathological angiogenesis.**

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- Retinal vascular development, including radial growth and vertical sprouting, is suppressed in endothelial cell-specific Tspan18 KO mice.
- Tspan18 knockout mice show no hemorrhage in transplanted tumor and decreased neovascular tuft area in ROP model.
- Tspan18 directly binds to a fragment of VEGFR2 protein and may regulate VEGFR2 signaling.

W126**A new type of lymphatic endothelial cells in the medulla of lymph nodes**

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- Microarray analysis of lymph node subcapsular and medullary sinus-lining lymphatic endothelial cells
- The microarray analysis revealed that CCL19 is highly expressed in medullary sinus of lymph nodes compared to subcapsular sinus
- Identification and visualisation of CCL19+ lymphatic endothelial cells using CCL19-reporter mice