Vascular Niche Technology for Stem Cell Expansion and Organ Regeneration

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Definition of Angiocrine

- **Angiocrine Factors**: (an-jee-oh-o-krahyn)-growth factors, signaling molecules, extracellular components, or other niche modifiers produced by endothelial cells.

- **Angiocrine factors** promote the proliferation of tissue-specific stem cells.
Angiocrine model of regeneration and development

Activated Endothelial Cells

Angiocrine Factors

Regenerating cells
Vasculature Precedes Tissue Development

Liver
Matsumoto 2001

Pancreas
Lammert 2001

Testis
Cool 2011

Bone Marrow
Zovein 2008

Kidneys
Serluca 2002

Bone Marrow
Zovein 2008
Why should ECs signal tissue regeneration?

Tissue growth without blood vessels could lead to necrosis.

Using angiocrine factors from blood vessels synchronizes tissue growth with the blood supply.

The endothelial cells can then maintain this role throughout adulthood in normal and pathological settings.
ATTENTION!

The entire presentation will be provided to registered attendees only at the conference!

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