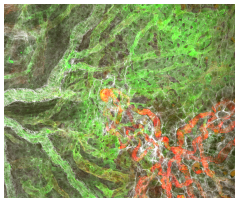
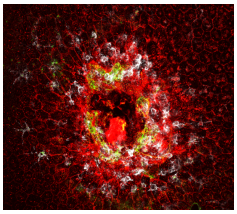


MASSACHUSETTS GENERAL HOSPITAL

HARVARD MEDICAL SCHOOL



Postdoctoral fellow positions available at Massachusetts General Hospital/Harvard Medical School

Laboratory for Epithelial Biology, Inflammation and Angiogenesis (PI: Alexander G. Marneros, MD/PhD)

Project 1: "Mechanisms of terminal differentiation of nephron epithelium in the kidney".

We have recently identified a **novel critical regulator of terminal epithelial differentiation in the kidney** that is required for proper nephron development and for kidney functions in the adult. By utilizing new conditional mutant mice we are investigating the specific spatiotemporal roles of this epithelial regulator in the kidney. This project aims to elucidate the molecular mechanisms through which this gene controls key aspects of nephron functions in the kidney during development and in the adult.

Project 2: "Molecular pathways and therapeutic interventions affecting macrophage polarization".

We are investigating **molecular mechanisms that control macrophage activation and the role that activated macrophages play for inflammation and pathological angiogenesis**. We have established *in vitro* assays to identify regulators of macrophage polarization. In chemical screens we could identify pharmacologic inhibitors of alternative macrophage polarization (M2-type macrophages) and could show *in vivo* that these inhibitors can block macrophage-induced angiogenesis. This project aims to identify new therapies that target the molecular pathways that are critical for macrophage polarization and that influence the ability of activated macrophages to induce pathological angiogenesis in conditions such as age-related macular degeneration, cancer or wound healing.

Project 3: "Roles of distinct inflammasomes in pathologic angiogenesis and inflammation".

We found that NLRP3 inflammasome activation promotes pathologic angiogenesis in age-related macular degeneration and in other diseases (***Cell Reports*, *2013; EMBO Mol Med, 2016***). In this project we aim to determine the pathomechanisms as well as the specific contributions of distinct inflammasome activators for pathologic angiogenesis by utilizing innovative genetic mouse models that we have generated.

Our laboratory utilizes diverse experimental techniques and has long-standing expertise in mouse genetics, molecular biology, and imaging techniques. We are embedded within a highly interactive excellent research environment at Massachusetts General Hospital and Harvard Medical School. Our research projects involve epithelial biology, wound healing, angiogenesis and inflammation. This allows exposure to diverse but overlapping areas of research. Much of our work has clinical and translational relevance.

For more information: https://www.massgeneral.org/cbrc/research/researchlab.aspx?id=1076

Requirements:

1. PhD with at least one significant first author publication (at least accepted for publication)
2. Expertise in molecular biology techniques
3. Working well within a team, excellent work ethic and being well organized

Contact:
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