A Postdoctoral position is available in the laboratory of Dr. Jacques-Antoine Haefliger, Department of Medicine, University of Lausanne, CHUV, Switzerland

Presentation
To complement our research activities, we are seeking to recruit a post-doctoral researcher to work on projects relating to Connexin signaling in the control of blood pressure and angiogenesis, particularly looking into the participation of the vascular Connexin in the control of tumor growth and in response to hypertension.

Job information
Expected start date in position: November 2017
Contract length: 1 year, renewable for a maximum 3 years
Activity rate: Full time position
Workplace: University of Lausanne, Department of Physiology, Bugnon 7A, 1005 Lausanne

Your responsibilities
The main responsibility consists in conducting scientific research to investigate the involvement of the vascular Connexins (Cx), mainly Connexin37 (Cx37) in the control of angiogenesis and/or in the control of blood pressure.

Connexins and angiogenesis
Angiogenesis is the growth of new capillaries, sprouting from pre-existing blood vessels. Excessive and defective angiogenesis are both associated with the progression of numerous diseases, including cancer. Endothelial cells (EC) play a central role in the angiogenic process. We previously documented that the angiogenesis and growth of tumors are reduced in mice deleted for Cx40 (Cx40-/- mice), whereas the smooth muscle cells coverage and animal survival are increased, compared to those observed in wild type animals (Alonso et al., 2016), identifying Cx40 as a potential novel target in cancer treatment (Alonso et al., 2016; Meda and Haefliger, 2016). We recently found that endothelial Cx40 also participates to the control of vessel growth during the *in vivo* development of the retina, indicating that Cx40 may represent a therapeutic target, under various conditions of pathological angiogenesis. We also postulate that Cx37, which is also expressed between EC could play a role in angiogenesis. The postdoctoral project will start by deciphering the role of Cx37 and the associated molecular mechanisms in the growth of endothelial cells during tumor angiogenesis.

Connexins and hypertension
The wall of vessels consists of two communication compartments, that of the smooth muscle cells (SMC), which are coupled by Cx43 and Cx45, sometimes with some Cx37, and that of EC, which predominantly express Cx37, Cx40 and some Cx43. Gap junctions participate to the synchronization and coordination of both SMC and EC along the vessel wall, by allowing for the intercellular spreading of various signals. In the afferent arterioles of kidneys, the renin-secreting cells (RSC) are also coupled to each other, and to EC, by Cx40 and Cx37 channels.
We previously showed that 1) Cx40 play an important role in hypertension by controlling the renin secretion (Krattinger et al., 2007; Le Gal et al., 2014) and the nitric oxide (NO) signaling (Alonso et al., 2010a; Le Gal et al., 2015; Meens et al., 2015); 2) Cx43 is upregulated between SMC of aortas specifically in response to angiotensinII (AngII) (Alonso et al., 2010b); 3) Cx37 control the basal NO release (Meens et al., 2015) and the SMC proliferation (Allagnat et al., 2017).
Furthermore, we recently observed that Cx37-/- mice submitted to a model of renin-dependent hypertension are normotensive in spite of increased circulating renin levels, suggesting that the

pathways mediated by AngII signaling are altered in the absence of Cx37. This ongoing study show that Cx37 contributes to the control of blood pressure, calling for further investigations of the underlying cellular and molecular mechanism of this control. As part of the postdoctoral project, we will generate different models of hypertension such as L-NAME and 1K1C (one kidney, one clip surgery procedure) to decipher the role of Cx37 in the control of blood pressure.

Your qualifications
The candidate should be a highly motivated scientist and critical thinker with a PhD degree in life sciences, with excellent knowledge in vascular biology. Good team player with a solid theoretical and practical knowledge of molecular biology, cellular biology and physiology. Primary responsibilities will include mouse colony management. Experience and knowledge in mouse work including genotyping tissue processing, DNA, RNA and protein assay is mandatory. Good spoken and written english is required.

Your benefits
Our lab is hosted at the Department of Physiology at the University of Lausanne, a well-equipped and well-funded institute (https://www.unil.ch/physiologie/home.html). Our group benefits from a dynamic environment and strong collaborations embedded in the broader Lausanne research environment, institutional facilities (cellular imaging, proteomics, electron microscopy, etc) and multiple biotech companies. We offer a nice working place in a multicultural, diversified and dynamic academic environment.

For further information, please contact
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Lab website: https://www.unil.ch/fbm/fr/home/menuinst/communication/nouveaux-professeurs/2010/haefliger-jacques-antoine.html

Your application
To apply, please send a single PDF file including a motivation letter describing why you are interested in joining our group, a CV including scientific publications, your Bachelors/Masters and PhD grades, and contact details for 2 or more referees to Jacques-Antoine.Haefliger@chuv.ch.

Deadline for application: september 30, 2017