

Selected publications

CIRB – Molecular Control of Neuro-Vascular Development

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-Karam, M., Janbon, H., Malkinson, G., and Brunet, I. (2022) Heterogeneity and developmental dynamics of LYVE-1 perivascular macrophages distribution in the mouse brain. *JCBFM* (in press, available in Biorxiv doi: <https://doi.org/10.1101/2021.10.08.463501>

- Taïb, S., Lamandé, N., Martin, S., Couplier, F., Topilko, P., and Brunet, I. (2022). Myelinating Schwann cells and Netrin-1 control intra-nervous vascularization of the developing mouse sciatic nerve. *Elife* 11, e64773.

- Taïb, S., Durand, J., and Brunet, I. (2020). [Oxaliplatin-induced peripheral neuropathy: how to create a barrier?]. *Med Sci (Paris)* 36 Hors série n° 1, 33–37.

- Simonnet, É., and Brunet, I. (2019). [The functions of arterial sympathetic innervation: from development to pathology]. *Med Sci (Paris)* 35, 643–650.

- Minocha, S., Valloton, D., Brunet, I., Eichmann, A., Hornung, J.-P., Lebrand, C., (2015), NG2 glia are required for vessel network formation during embryonic development. *Elife* 4.

- Aspalter, I.M., Gordon, E., Dubrac, A., Ragab, A., Narloch, J., Vizán, P., Geudens, I., Collins, R.T., Franco, C.A., Abrahams, C.L., Thurston, G., Fruttiger, M., Rosewell, I., Eichmann, A., Gerhardt, H., (2015). Alk1 and Alk5 inhibition by Nrp1 controls vascular sprouting downstream of Notch. *Nat Commun* 6, 7264.

- Fortuna, V., Pardanaud, L., Brunet, I., Ola, R., Ristori, E., Santoro, M.M., Nicoli, S., and Eichmann, A. (2015). Vascular Mural Cells Promote Noradrenergic Differentiation of Embryonic Sympathetic **Neurons**. *Cell Rep* 11, 1786–1796.

- Rama N., Dubrac A., Mathivet T., Ní Chárthaigh R.-A., Genet G., Cristofaro B., Pibouin-Fragner L., Ma L., Eichmann A. & Chédotal A. (2015), Slit2 signaling through Robo1 and Robo2 is required for retinal neovascularization. *Nat. Med.* 21, 483–491.

- Eichmann A. & Brunet I. (2014), Arterial innervation in development and disease. **Science Translational Medicine** 6, 252ps9.

- Greif D.M. and Eichmann A. (2014), Vascular biology: Brain vessels squeezed to death. **Nature** 508, 50–51.

- Prahst C., Kasaai B., Moraes F., Jahnsen E.D., Larrivee B., Villegas D., Pardanaud L., Pibouin-Fragner L., Zhang F., Zaun H.C., et al. (2014), The Homeobox Transcription Factor H2.0-Like Homeobox Transcription Factor Modulates Yolk Sac Vascular Remodeling in Mouse Embryos. **Thromb. Vasc. Biol.** 34, 1468–1476.
- Brunet I., Gordon E., Han J., Cristofaro B., Broqueres-You D., Liu C., Bouvrée K., Zhang J., del Toro R., Mathivet T., Larrivée B., Jagu J., Pibouin-Fragner L., Pardanaud L., Machado M.J.C., Kennedy T.E., Zhuang Z., Simons M., Levy B.I., Tessier-Lavigne M., Grenz A., Eltzhig H. & Eichmann A. (2014), Netrin-1 controls sympathetic arterial innervation. **Journal of Clinical Investigation** 124, 3230–3240.
- Cristofaro B., Shi Y., Faria M., Suchting S., Leroyer A.S., Trindade A., Duarte A., Zovein A.C., Iruela-Arispe M.L., Nih L.R., Kubis N., Henrion D., Loufrani L., Todiras M., Schleifenbaum J., Gollasch M., Zhuang Z.W., Simons M., Eichmann A. & le Noble F. (2013), Dll4-Notch signaling determines the formation of native arterial collateral networks and arterial function in mouse ischemia models. **Development** 140, 1720-1729.
- Bouvrée K.*, Brunet I.*, del Toro R., Gordon E., Prahst C., Cristofaro B., Mathivet T., Xu Y., Soueid J., Fortuna V., Miura N., Aigrot M.S., Maden C.H., Ruhrberg C., Thomas J.L. & Eichmann A. (2012), Semaphorin3A, Neuropilin-1 and PlexinA1 are required for lymphatic valve formation. **Circ. Res.**, 111: 437-445. * equal contribution
- Larrivée B., Prahst C., Gordon E., del Toro R., Mathivet T., Duarte A., Simons M. & Eichmann A. (2012), Alk1 signaling inhibits angiogenesis by cooperating with the Notch pathway. **Dev. Cell**, 22: 489-500.
- Pardanaud L. & Eichmann A. (2011), Extraembryonic origin of circulating endothelial cells. **Plos One**, 6: e25889.
- Tammela T., Zarkada G., Nurmi H., Jacobsson L., Heinolainen K., Tvogorov D., Mutomäki A., Franco C., Aranda E., Yla-Herttuala S., Fruttiger M., Mäkinen T., Eichmann A., Pollard J., Gerhardt H., Alitalo K. (2011), VEGFR-3 reinforces Notch signaling through FoxC2 to control angiogenesis. **Nat Cell Biol**, 11: 1202-13.
- Calvo C.F., Fontaine R.H., Soueid J., Tammela T., Makinen T., Alfaro-Cervello C., Bonnaud F., Miguez A., Benhaim L., Xu Y., Barallobre M.J., Moutkine I., Lyytikä J., Tatlisumak T., Pytowski B., Zalc B., Richardson W., Kessaris N., Garcia-Verdugo J.M., Alitalo K., Eichmann A. & Thomas J.L. (2011), Vascular endothelial growth factor receptor 3 directly regulates murine neurogenesis. **Genes & Dev.**, 25: 831-844.
- Koch A.W.*, Mathivet T.*, Larrivée B., Tong R.K., Kowalski J., Pibouin-Fragner L., Bouvrée K., Stawicki S., Nicholes K., Rathore N., Scales S.J., Luis E., del Toro R., Freitas C., Bréant C., Michaud A., Corvol P., Thomas J.L., Wu J., Peale F., Watts R.J., Tessier-Lavigne M., Bagri A. & Eichmann A.* (2011), Robo4 maintains vessel integrity and inhibits angiogenesis by interacting with UNC5B. **Dev. Cell**, 20: 33-46. * equal contribution
- Del Toro R., Prahst C., Mathivet T., Siegfried G., Kaminker J., Larrivée B., Bréant C., Duarte A., Takakura N., Fukamizu A., Penninger J. & Eichmann A. (2010), Identification and functional analysis of novel endothelial tip cell-enriched genes. **Blood**, 116: 4025-33.
- Lebrin F., Srun S., Raymond K., Martin S., van den Brink S., Freitas C., Bréant C., Mathivet T., Larrivée B.,

Thomas J.L., Arthur H.A., Westermann C.J.J., Disch F., Mager J.J., Snijder R.J., Eichmann A.* & Mummery C. (2010), Thalidomide enhances mural cell recruitment and reduces epistaxis in patients with hereditary hemorrhagic telangiectasia. **Nat. Med.**; 16: 420-8. * equal contribution

- Xu Y., Yuan L., Mak J., Pardanaud L., Caunt M., Kasman I., Larrivée B., Suchting S., del Toro R., Medvinsky A., Yang J., Kolodkin A., Thomas J.L., Koch A., Alitalo K., Eichmann A.* & Bagri A.* (2010), Neuropilin-2 mediates VEGF-C induced lymphatic sprouting together with VEGFR3. **J. Cell Biol.**; 188:115-30. * equal contribution