[Confocal Microscope, A10]

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1. **Short description of the infrastructure.**

This Leica TCS SP8 confocal laser scanning microscope is currently located in A10 room 1054. It is an inverted microscope system, and is equipped with the following objectives: 5x/0.15 DRY HC PL FLUOTAR; 20x/0.75 DRY HC PL APO CS2; 40x/1.30 OIL HC PL APO CS2; and 63x/1.40 OIL HC PL APO CS2.
Laser lines: 405 nm, 488 nm; 552 nm; 638 nm. Detectors: 1 x PMT and 1 x Hybrid detector. Additionally, the system has a motorized stage and is capable of imaging either live cells or fixed cells/tissue. For live cell imaging, the system is equipped with an Okolab stage top chamber.

2. **Is this infrastructure receiving support also from other Strategic Research Areas (SRAs) or organizations at Lund University (e.g. Medical faculty, LBIC). If yes, please specify the type of support and its amount.**

No.

3. **Number and names of MultiPark senior researchers using the infrastructure in the period 2018-2020[1].**

By now 28 trained users get access to the system from 13 different research groups.

4. **Number and names of senior researchers outside of Multipark and/or non-academic partners using the infrastructure 2018-2020.**

No

5. **Does the infrastructure have a steering document accessible to the users? If yes, when was it last updated?[2]**

Yes. Last updated in July 2020.

6. **Is the infrastructure charging user fees? If yes, state the amount and what is covered by the user fees.**

200 SEK/hour

7. **List publications generated with the help of this infrastructure during the past 3 years (2018-2020). Do not include manuscripts in preparation and please give the full reference (i.e., complete author list, complete title, journal name with year, volume, pages)[3].**

[1] If the infrastructure was first established in 2020, please include this information.

[2] Note that the Multipark leadership may ask to see this document with a very short notice.

[3] If the infrastructure was first established in 2020, please include this information here too.

(Many users have some manuscripts under reviewing or revision now, they will be reported in future).

1. Elabi O, Gaceb A, Carlsson R, Padel T, Soylu-Kucharz R, Cortijo I, Li W, Li JiaYi and **Paul G**. Human a-synuclein overexpression in a ouse model of Parkinson's disease leads to vascular pathology, blood brain barrier leakage and pericyte activation. Scientific Reports 2021, 11:1120 doi.org/10.1038/s41598-020-80889-8
2. Gaceb A, Barbariga M and **Paul G**. An *in vitro* partial lesion model of differentiated human mesencephalic neurons: effect of pericyte secretome on phenotypic markers. J Mol Neurosci. 2020 Nov;70(11):1914-1925. doi: 10.1007/s12031-020-01589-6
3. Mehmeti-Ajradini M , Bergenfelz C, Larsson AM, Carlsson R, Riesbeck K, Ahl J, Janols H, Wullt M , Bredberg A , Kallberg E , Bjork Gunnarsdottir F, Rydberg Millrudd C , Ryden L, **Paul G** , Loman N, Adolfsson J , Carneiro A, Jirstrom K, Killander F, Bexell D, Leandersson K. Human G-MDSCs are neutrophils at distinct maturation stages promoting tumor growth in breast cancer. Life Sci Alliance. 2020 Sep 21;3(11):e202000893.doi: 10.26508/lsa.202000893.
4. Roth M, Enström A, Aghabeick C, Carlsson C, Genove G and **Paul G**. Parenchymal pericytes are not the major contributor of extracellular matrix in the fibrotic scar after stroke. Journal of Neuroscience Research 2019. Nov 22. doi: 10.1002/jnr.24557
5. Roth M, Gaceb A, Enström A, Padel, T, Genove G, Özen I and **Paul G**. Regulator of G-Protein Signaling 5 regulates the shift from perivascular to parenchymal pericytes in the chronic phase after stroke. FASEB 2019 April 30. FASEB J. 2019 Aug;33(8):8990-8998. doi: 10.1096/fj.201900153R.
6. Özen I, Roth M, Barbariga M, Gaceb A, Deierborg, T, Genové G and **Paul G**. Loss of Regulator of G-Protein Signaling 5 leads to neurovascular protection in stroke. Stroke. 2018 Sep;49(9):2182-2190. doi: 10.1161/STROKEAHA.118.020124
7. Padel T, Roth M, Gaceb A, Li JY, Björkqvist M and **Paul G**. Brain pericyte activation occurs early in Huntington's disease. Exp Neurol. 2018 Apr 7;305:139-150. doi: 10.1016/j.expneurol.2018.03.015
8. Carlsson R, Özen I, Barbariga M, Gaceb A, Roth M and **Paul G**. STAT3 precedes HIF1α transcriptional responses to oxygen and oxygen and glucose deprivation in human brain pericytes. PLoS One. 2018 Mar 8;13(3):e0194146. doi: 10.1371
9. Gaceb A., Özen I., **Padel T.,** Barbariga M., **Paul G**. Pericytes secrete pro-regenerative molecules in response to Platelet-derived growth factor-BB. J Cereb Blood Flow Metab. 2018 Jan; 38(1):45-57. doi: 10.1177/0271678X17719645.
10. Itzia Jimenez-Ferrer, Filip Bäckström, Alfredo Dueñas-Rey, Michael Jewett, Antonio Boza-Serrano, Kelvin C. Luk, Tomas Deierborg and Maria Swanberg The MHC class II transactivator modulates seeded alpha-synuclein pathology and dopaminergic neurodegeneration in an in vivo rat model of Parkinson's disease Brain Behavior, and Immunity 91: 369-382, Jan 2021.