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RESEARCH AREA

I am interested in how alterations in autophagy contribute to healthy ageing and the pathophysiology of age-related, chronic neurodegenerative disorders such as Parkinson's disease, Alzheimer's disease and Huntington's disease.

TECHNIQUES AVAILABLE IN THE LAB

Lentiviral vector production, direct neuronal reprogramming, nuclei sorting using FACS and ultra-centrifugation, westren blot, immunolabeling, high-content automated microscopy, PCR, qRT-PCR, cloning, gel electrophoresis, transfection, transduction, patch-clamp electrophysiology, in vitro cell culturing, drug-screening.

SELECTED PUBLICATIONS

Pircs, K., Drouin-Ouellet, J., Horváth, V., Gil, J., Rezeli, M., Garza, R., Grassi, DA., Sharma, Y., St-Amour, I., Harris, K., Jönsson, ME., Johansson, PA., Vuono, R., Fazal, SV., Stoker, T., Hersbach, BA., Sharma, K., Lagerwall, J., Lagerström, S., Storm, P., Hébert, SS., Marko-Varga, Gy., Parmar, M., Barker, RA., Jakobsson, J. (2022) Distinct subcellular autophagy impairments in induced neurons from Huntington's disease patients. **Brain 145(9):** 3035-3057.

Brattas, P.L., Hersbach, B.A., Madsen, S., Petri, R., Jakobsson, J., **Pircs, K.** (2020) Impact of differential and time-dependent autophagy activation on therapeutic efficacy in a model of Huntington disease. **Autophagy 17:** 1316-1329.

Pircs, K., Petri, R., Madsen, S., Brattås, P.L., Vuono, R., Ottosson, R.D., St-Amour, I., Hersbach, A.B., Matusiak-Brückner, M., Hult, Lundh, S., Petersén, A., Déglon, N., Hébert, S.S., Parmar, M., Barker, A.R., Jakobsson, J. (2018) Huntingtin aggregation impairs autophagy leading to Argonaute-2 accumulation and global microRNA dysregulation. **Cell Rep 24:** 1397-1406.

Drouin-Ouellet, J., Lau, S., Brattas, P.L., Rylander, Ottosson, D., **Pircs, K.,** Grassi, D., Collins, M.L., Vuono, R., Sjöland, A.A., Westergren-Thorsson, G., Graff, C., Minthon, L., Toresson, H., Barker, A.R., Jakobsson, J., Parmar, M. (2017) REST suppression mediates neural conversion of adult human fibroblasts via microRNA dependent and independent pathways. **EMBO Mol Med 9:** 1117-1131.

Petri, R., **Pircs, K.,** Jönsson, M.E., Akerblom, M., Brattas, P.L., Klussendorf, T., Jakobsson, J. (2017) let-7 regulates radial migration of new-born neurons through positive regulation of autophagy. **EMBO J 36:** 1379-1391.