Name of infrastructure: **Mouse behavioural platform**

Infrastructure manager: Elena Espa

PI contact person: Angela Cenci Nilsson

1. Short description of the infrastructure.

The mouse behavioral platform is an infrastructure including optimized laboratory space and equipment to assess cognitive, affective, and motor functions of mice. It currently includes the following facilities:

Lab room C1044a (two space modules):
(i) Barnes Maze (test of spatial reference memory).
(ii) Flexible space module with ceiling-mounted camera (ANY-maze software) accommodating space and hardware/software for these tests: Elevated plus maze, Y-maze, Passive Avoidance, Light-Dark box.

Lab room C1042a (two space modules)
(i) Open field system (8 boxes) with videotracking (ANY-maze software).
(ii) Flexible space module for non-automatized tests (cylinder test, stepping test, corridor test, ratings of animal behaviours in individual cages). A tripod-supported videocamera (GoPro Hero 6) is available to film mice during these tests.
(iii) Rotarod, grip-strength meter, and related hardware are also in this space.

Lab room A0934:
This is an additional room for non-automatized tests, rotarod, and grip-strength meter in case room C1042a gets overbooked.

Lab rooms are equipped with scales, holding cabinets for mice, and cleaning material.

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, we do not receive other type of support than that provided by Multipark.
However, the Centre for Comparative Medicine (CCM; previous BMSD) has so far accepted to pay the lab rent for rooms *C1044a and C1042a*.

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

Ten Multipark group leaders (“partners”) have been using this platform within the given period (the number of users per group is indicated in brackets)

Björklund Tomas (1 user); Björkqvist Maria (1 user); Cenci Nilsson Angela (2 users); Deierborg Tomas (2 users); Hansen Christian (1 user); Li Jia-Yi (1 user); Lundgaard Iben (3 users); Paul-Visse Gesine (2 users); Ruscher Karsten & Marklund Niklas (1 user).

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

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

Four "non-Multipark" partners have been using this platform within the given period.

Andersson My (2 users); Duarte Joao (3 users); Meissner Anja (2 users); Charlotta Grims (2 users).

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

Yes, we have a very detailed steering document that is updated at least once a year by the platform´s management group (this group consists of 6 people with direct experience of the different test stations; their names are reported on the Multipark Web page).

The last update of the steering document was carried out in January 2021, and the document was then sent to all the partners via e-mail.

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

Yes, there are user fees. As stated in the platform´s steering *document "User fees are needed to cover all costs that are not sponsored by Multipark (in particular, consumables, hardware-software upgradings, depreciation costs). To this end, the estimated costs per calendar year are divided by 2 periods (January-June and July-December), and then divided by the number of users in each period to calculate biannual user fees".*

In 2020, the fees have been 1608 kr/user for the first 6 months (Jan-June) and 1302 kr/user for the last 6 months (July-December). Fees are indicated without overhead.

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].

Publications per year (PI name in bold)

2020

Outeiro TF, Heutink P, Bezard E, **Cenci AM**. From iPS cells to rodents and non-human primates: filling the gaps in modeling Parkinson's disease. *Mov Disord*. 2020
[E-published ahead of print]

Cenci MA, Bjorklund A. Animal models for preclinical Parkinson's research: an update and critical appraisal. *Prog Brain Res*. 2020;252:27-59.

Sebastianutto I, Goyet E, Andreoli L, Font-Ingles J, Moreno-Delgado D, Bouquier N, Jahannault-Talignani C, Moutin E, Di Menna L, Maslava N, Pin JP, Fagni L, Nicoletti F, Ango F, **Cenci MA**§, Perroy J§. D1-mGlu5 heteromers mediate noncanonical dopamine signaling in Parkinson´s disease.. *J Clin Invest.* 2020 Mar 2;130(3):1168-1184. § shared last authors.

Henrikson JH, Pombo Antunes AR, Wieloch T, **Ruscher K.** Enhanced functional recovery by levodopa is associated with decreased levels of synaptogyrin following stroke in aged mice. *Brain Res Bull*. 2020 Feb;155:61-66.

---

[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.

2019

Francardo V, Geva M, Bez F, Denis Q, Steiner L, Hayden MR, **Cenci MA**. Pridopidine induces functional neurorestoration via the Sigma-1 Receptor in a mouse model of Parkinson's disease. *Neurotherapeutics*. 2019;16(2):465-79.

Sjögren M, Soylu-Kucharz R, Dandunna U, Stan TL, Cavalera M, Sandelius Å, Zetterberg H, **Björkqvist M.** Leptin deficiency reverses high metabolic state and weight loss without affecting central pathology in the R6/2 mouse model of Huntington's disease. *Neurobiol Dis.* 2019 Dec;132:104560.

Talhada D, Feiteiro J, Costa AR, Talhada T, Cairrão E, Wieloch T, Englund E, Santos CR, Gonçalves I, **Ruscher K.** Triiodothyronine modulates neuronal plasticity mechanisms to enhance functional outcome after stroke. *Acta Neuropathol Commun*. 2019 Dec 21;7(1):216.

2018

Cenci MA, Crossman AR. Animal models of l-dopa-induced dyskinesia in Parkinson's disease. *Mov Disord*. 2018;33(6):889-99.

Duarte AI, Sjögren M, Santos MS, Oliveira CR, Moreira PI, **Björkqvist M.** Dual therapy with liraglutide and ghrelin promotes brain and peripheral energy metabolism in the R6/2 mouse model of Huntington's disease. *Sci Rep.* 2018 Jun 12;8(1):8961.

Saraiva C, Talhada D, Rai A, Ferreira R, Ferreira L, Bernardino L, **Ruscher K.** MicroRNA-124-loaded nanoparticles increase survival and neuronal differentiation of neural stem cells in vitro but do not contribute to stroke outcome in vivo. *Plos One*. 2018 Mar 1;13(3):e0193609.