[AAV platform**]**
[Name of infrastructure manager/contact person]: Cecilia Lundberg / Johan Jakobsson

1. **Short description of the infrastructure.**
   The Lund AAV vector core is located at the BMC ín Lund. It is a viral vector core facility providing you with full service - the core has a long experience in the production of viral-based vectors and has become an important technological resource for researchers, providing services to non-profit institutions and academic investigators worldwide.
   The core provides investigators access to state-of-the-art vector technology for preclinical studies and other basic research applications. These studies can contribute with information which can prove crucial to the understanding of gene function and development of therapeutic vectors.

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]. - 8**

   Anders Björklund
   Angela Cenci Nilsson
   Cecilia Lundberg
   Daniella Ottosson
   Johan Jakobsson
   Malin Parmar
   Maria Swanberg
   Tomas Björklund

   Number and names of senior researchers outside of Multipark and/or non-academic partners using the infrastructure 2018-2020. - 18

   Daniel Engelbertsen (LU, Exp kardiovaskulär forskning)
   Demetris Soteropoulos (Newcastle University)
   Endokrinologi
   Jaan-Olle Andresso (Karolinska Institutet)
   Johan Richter LU
   John Peever (University of Toronto)
   Johan Lundkvist (Sinfonia Biotherapeutics AB)
   Jonas Larsson 314244 LU
   Laura Lahti (Karolinska Institutet)
   Francois Pomerlau (University of Kentucky Medical Center)
   Olof Gidlöf (Institutionen för kliniska vetenskaper, Avd för molekylär kardiologi
   Paolo Medina (Umeå Universitet)
   Per Svenningsson (Karolinska Institutet)
   Sebastian Sato (Umeå Universitet)
   Simon Stott (University of Cambridge)
   Stefan Karlsson LU
   Zaal Kokaia LU
   UNIVERSITÀ DELGI STUDI DI CAGLIARI, MONSERRATO (CA) ITALY

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

4. **Does the infrastructure have a steering document accessible to the users? If yes, when was it last updated?[2]**
Please see website: https://www.multipark.lu.se/technical-platforms/aav-vector-lab

Is the infrastructure charging user fees? If yes, state the amount and what is covered by the user fees.
Production of a standard high-concentration prep (200ul, approx. 1·1014 - 1·1015 VG/ml):
Existing plasmid in our inventory: 10.000 SEK
Custom made vectors including design & cloning: 15.000 SEK

6. **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].**

Klawonn A, Fritz M, Castany S, Pignatelli M, Similä F, Hugo AT, Levinsson J, Jaarola M, Hidalgo J, Jakobsson J, Heilig M, Bonci A, Engblom D. Microglial activation elicits a negative affective state through prostaglandin-mediated modulation of striatal neurons. Immunity, 2021, 54: 225-234

Itzia Jimenez-Ferrer, Michael Jewett, Alfredo Dueñas-Rey, Filip Bäckström, 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 Behav Immun 91: 369-382, Jan 2021.

Hoban DB, Shrigley S, Mattsson B, Breger LS, Jarl U, Cardoso T, Nelander Wahlestedt J, Luk KC, Björklund A, Parmar M. Impact of α-synuclein pathology on transplanted hESC-derived dopaminergic neurons in a humanized α-synuclein rat model of PD Proc Natl Acad Sci, USA, 2020 Jun 30;117(26):15209-15220.

Scheggi S, Rossi F, Corsi S, Fanni S, Tronci E, Ludovica C, Vargiu R, Gambarana C, Muñoz A, Stancampiano R, Bjorklund A, Carta M
BDNF Overexpression Increases Striatal D3 Receptor Level at Striatal Neurons and Exacerbates D1-Receptor Agonist-Induced Dyskinesia
Journal of Parkinson's Disease, 08 July 2020

Brattås PL, Hersbach BA, Madsen S, Petri R, Jakobsson J, Pircs K
Impact of differential and time-dependent autophagy activation on therapeutic efficacy in a model of Huntington disease.
Autophagy. 2020 May 6:1-14

A systematic capsid evolution approach performed in vivo for the design of AAV vectors with tailored properties and tropism.
Davidsson M, Wang G, Aldrin-Kirk P, Cardoso T, Nolbrant S, Hartnor M, Mudannayake J, Parmar M, Björklund T.
Proc Natl Acad Sci U S A. 2019 Dec 9;116(52):27053-62. doi: 10.1073/pnas.1910061116. PMID: 31818949

Seeding of protein aggregation causes cognitive impairment in rat model of cortical synucleinopathy.
Espa E, Clemensson EKH, Luk KC, Heuer A, Björklund T, Cenci MA.

[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.

Mov Disord. 2019 Nov;34(11):1699-1710. doi: 10.1002/mds.27810. Epub 2019 Aug 26.
PMID: 31449702

Vector-mediated l-3,4-dihydroxyphenylalanine delivery reverses motor impairments in a primate model of Parkinson's disease.
Rosenblad C, Li Q, Pioli EY, Dovero S, Antunes AS, Agúndez L, Bardelli M, Linden RM, Henckaerts E, Björklund A, Bezard E, Björklund T.
Brain. 2019 Aug 1;142(8):2402-2416. doi: 10.1093/brain/awz176.
PMID: 31243443

A novel adeno-associated virus capsid with enhanced neurotropism corrects a lysosomal transmembrane enzyme deficiency.
Tordo J, O'Leary C, Antunes ASLM, Palomar N, Aldrin-Kirk P, Basche M, Bennett A, D'Souza Z, Gleitz H, Godwin A, Holley RJ, Parker H, Liao AY, Rouse P, Youshani AS, Dridi L, Martins C, Levade T, Stacey KB, Davis DM, Dyer A, Clément N, Björklund T, Ali RR, Agbandje-McKenna M, Rahim AA, Pshezhetsky A, Waddington SN, Linden RM, Bigger BW, Henckaerts E.
Brain. 2018 Jul 1;141(7):2014-2031. doi: 10.1093/brain/awy126.
PMID: 29788236

Molecular barcoding of viral vectors enables mapping and optimization of mRNA trans-splicing.
Davidsson M, Díaz-Fernández P, Torroba M, Schwich OD, Aldrin-Kirk P, Quintino L, Heuer A, Wang G, Lundberg C, Björklund T.
RNA. 2018 May;24(5):673-687. doi: 10.1261/rna.063925.117. Epub 2018 Jan 31.
PMID: 29386333

Chemogenetic modulation of cholinergic interneurons reveals their regulating role on the direct and indirect output pathways from the striatum.
Aldrin-Kirk P, Heuer A, Rylander Ottosson D, Davidsson M, Mattsson B, Björklund T.
Neurobiol Dis. 2018 Jan;109(Pt A):148-162. doi: 10.1016/j.nbd.2017.10.010. Epub 2017 Oct 14.
PMID: 29037828

Pircs K, Petri R, Madsen S, Brattås PL, Vuono R, Ottosson DR, St-Amour I, Hersbach BA, Matusiak-Brückner M, Hult Lundh S, Petersén Å, Déglon N, Hébert SS, Parmar M, Barker RA, Jakobsson J.
Huntingtin Aggregation Impairs Autophagy, Leading to Argonaute-2 Accumulation and Global MicroRNA Dysregulation
Cell Reports 24, 1397–1406, August 7, 2018

Michael Jewett, Elna Dickson, Kajsa Brolin, Matilde Negrini, Itzia Jimenez-Ferrer and Maria Swanberg
Gsta4 Prevents Dopamine Neurodegeneration in a Rat Alpha-Synuclein Model of Parkinson's disease
Front Neurol. 2018 Apr 6; 9:222

Fieblinger T, Zanetti L, Sebastianutto I, Breger LS, Quintino L, Lockowandt M, Lundberg C, Cenci MA. Striatonigral neurons divide into two distinct morphological-physiological phenotypes after chronic L-DOPA treatment in parkinsonian rats.
Sci Rep. 2018;8(1):10068.

Klawonn AM, Fritz M, Nilsson A, Bonaventura J, Shionoya K, Mirrasekhian E, KarlssonU, Jaarola M, Granseth B, Blomqvist A, MichaelidesM, Engblom D. Motivational valence is determined by striatal melanocortin 4 receptors. J Clin Invest. 2018, 128: 3160-3170

Faustini G, Longhena F, Varanita T, Bubacco L, Pizzi M, Missale C, Benfenati F, Björklund A, Spano P, Bellucci A (2018) Synapsin III deficiency hampers α-synuclein aggregation, striatal synaptic damage and nigral cell loss in an AAV-based mouse model of Parkinson's disease. Acta Neuropathol. 2018 Jul 25