

MESO QuickPlex

MSD MESO QuickPlex SQ120

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1. Short description of the infrastructure.

The MESO QuickPlex SQ 120 is a multiplexing plate reader using high-performance, electrochemiluminescence (ECL) immunoassays for detecting biomarkers. The instrument allows for precise quantitation of single or multiple, low to elevated abundance analytes, in a single sample. The MULTI-ARRAY technology has increased dynamic range, improved sensitivity, reduced sample volume and reagent requirements, compared to conventional ELISA. A wide menu of immunoassay kits, and a full line of components and reagents for developing your own assay are available for the MESO QuickPlex, covering various applications including immunology, inflammation, oncology, neurobiology, and toxicology. The instrument is easy to learn and simple to use.

The MESO QuickPlex allows:

- ECL detection for high sensitivity and broad dynamic range
- Single and multiplex assays
- Single-well read mode for ultimate performance
- Wide menu of available kits
- Full line of components for user-developed assays

Examples of multiplexing immunoassays:

- Neuroinflammation panels, alpha-synuclein kit and Ab38/40/42 panel
- Cytokine & Chemokine profiling
- Intracellular signaling

To learn more, [visit the official Meso Scale Discovery website](#)

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.

3. Number and names of MultiPark senior researchers using the infrastructure in the period 2018-2020¹.

Tomas Deierborg
Maria Swanberg
Oskar Hansson
Gunnar Gouras
Niklas Mattsson-Carlgrén
Sebastian Palmqvist
Alexander F Santillo
Oxana Klementieva

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.

Anna Darabi
Christine Ekdahl Clementson
Filip Ventorp

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

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

Fees

	MultiPark User	External User
Introduction	No assistance	No assistance
SEK, hour	SEK per plate	SEK per plate
500	0	200

The external user fee is used to cover for prolongation of service contract and introduction fee is used to cover for salary costs for personnel responsible of introduction.

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.

Palmqvist S, Tideman P, Cullen N, Zetterberg H, Blennow K; Alzheimer's Disease Neuroimaging Initiative, Dage JL, Stomrud E, Janelidze S, Mattsson-Carlgrén N, Hansson O. Prediction of future Alzheimer's disease dementia using plasma phospho-tau combined with other accessible measures.

Nat Med. 2021 Jun;27(6):1034-1042. doi: 10.1038/s41591-021-01348-z. Epub 2021 May 24.

Shorena Janelidze, Sebastian Palmqvist, Antoine Leuzy, Erik Stomrud, Inge M W Verberk, Henrik Zetterberg, Nicholas J Ashton, Pedro Pesini, Leticia Sarasa, José Antonio Allué, Charlotte E Teunissen, Jeffrey L Dage, Kaj Blennow, Niklas Mattsson-Carlgrén, Oskar Hansson. Detecting amyloid positivity in early Alzheimer's disease using combinations of plasma A β 42/A β 40 and p-tau. *Alzheimers Dement*. 2021 Jun 20. doi: 10.1002/alz.12395. Online ahead of print.

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.

Cicognola C, Janelidze S, Hertze J, Zetterberg H, Blennow K, Mattsson-Carlgrén N, Hansson O. Plasma glial fibrillary acidic protein detects Alzheimer pathology and predicts future conversion to Alzheimer dementia in patients with mild cognitive impairment. *Alzheimers Res Ther.* 2021 Mar 27;13(1):68. doi: 10.1186/s13195-021-00804-9.

Flores Bjurström M, Bodelsson M, Montgomery A, Harsten A, Waldén M, Janelidze S, Hall S, Hansson O, Irwin MR, Mattsson-Carlgrén N. Differential expression of cerebrospinal fluid neuroinflammatory mediators depending on osteoarthritis pain phenotype. *Pain.* 2020 Sep 1;161(9):2142-2154. doi: 10.1097/j.pain.0000000000001903.

Alexa Pichet Binette, Sebastian Palmqvist, Divya Bali, Gill Farrar, Christopher J. Buckley, David A. Wolk, Henrik Zetterberg, Kaj Blennow, Shorena Janelidze, Oskar Hansson. Plasma phospho-tau and brief cognitive tests can predict conversion to Alzheimer dementia. *Annals neurology*, under review.

Colin Groot, Claudia Cicognola, Divya Bali, Gallen Triana-Baltzer, Jeffrey L. Dage, Hartmuth Kolb, Rik Ossenkoppele, Shorena Janelidze, Oskar Hansson. Clinical performance of the Janssen plasma p-tau₂₁₇ assay and comparison to the Lilly assay. Manuscript in preparation.

Alexa Pichet Binette, Shorena Janelidze, Nicholas Cullen, Jeffrey L. Dage, Henrik Zetterberg, Kaj Blennow, Erik Stomrud, Niklas Mattsson-Carlgrén, Oskar Hansson. Clinical utility of adjusting plasma Alzheimer markers for creatinine and body mass index. *Alzheimers Res Ther.*, under review.

Palmqvist S, Janelidze S, Stomrud E, Zetterberg H, Karl J, Zink K, Bittner T, Mattsson N, Eichenlaub U, Blennow K, Hansson O. Performance of Fully Automated Plasma Assays as Screening Tests for Alzheimer Disease-Related β -Amyloid Status. *JAMA Neurol.* 2019 Jun 24;76(9):1060-1069. doi: 10.1001/jamaneurol.2019.1632.

Hansson O, Santillo AF, Meeter LH, Nilsson K, Landqvist Waldö M, Nilsson C, Blennow K, van Swieten JC, Janelidze S. CSF placental growth factor - a novel candidate biomarker of frontotemporal dementia. *Ann Clin Transl Neurol.* 2019 Mar 29;6(5):863-872. doi: 10.1002/acn3.763. eCollection 2019 May.

Janelidze S, Stomrud E, Brix B, Hansson O. Towards a unified protocol for handling of CSF before β -amyloid measurements. <https://alzres.biomedcentral.com/articles/10.1186/s13195-019-0517-9> *Alzheimers Res Ther.* 2019 Jul 19;11(1):63. doi: 10.1186/s13195-019-0517-9.

Matilda Ahl, Una Avdic, Maria Compagno Strandberg, Deepti Chugh, Emelie Andersson, Ulf Hållmarker, Stefan James, Tomas Deierborg & Christine T. Ekdahl. Physical Activity Reduces Epilepsy Incidence: a Retrospective Cohort Study in Swedish Cross-Country Skiers and an Experimental Study in Seizure-Prone Synapsin II Knockout Mice. <https://sportsmedicine-open.springeropen.com/articles/10.1186/s40798-019-0226-8> *Sports Medicine - Open*

Una Avdic, Matilda Ahl, Maria Öberg , Christine T Ekdahl. Immune Profile in Blood Following Non-convulsive Epileptic Seizures in Rats.

<https://www.frontiersin.org/articles/10.3389/fneur.2019.00701/full>

Front Neurol. 2019 Jul 2;10:701. doi: 10.3389/fneur.2019.00701.

Shelby Shrigley, Karolina Piracs , Roger A Barker, Malin Parmar, Janelle Drouin-Ouellet. Simple Generation of a High Yield Culture of Induced Neurons from Human Adult Skin Fibroblasts.

J. Vis. Exp., 2018 Feb 6; (132), e56904.

Antonio Boza-Serrano, Yiyi Yang, Agnes Paulus, Tomas Deierborg. Innate immune alterations are elicited in microglial cells before plaque deposition in the Alzheimer's disease mouse model 5xFAD.

Sci Rep. 2018 Jan 24;8(1):1550.

Yiyi Yang , Antonio Boza-Serrano , Christopher J R Dunning , Bettina Hjelm Clausen, Kate Lykke Lambertsen , Tomas Deierborg. Inflammation leads to distinct populations of extracellular vesicles from microglia.

J Neuroinflammation. 2018 May 28;15(1):168.

Hall S, Janelidze S, Surova Y, Widner H, Zetterberg H, Hansson O. Cerebrospinal fluid concentrations of inflammatory markers in Parkinson's disease and atypical parkinsonian disorders.

Sci Rep. 2018 Sep 5;8(1):13276.

Shorena Janelidze, Niklas Mattsson , Erik Stomrud , Olof Lindberg , Sebastian Palmqvist , Henrik Zetterberg , Kaj Blennow , Oskar Hansson. CSF biomarkers of neuroinflammation and cerebrovascular dysfunction in early Alzheimer disease.

Neurology. 2018 Aug 28;91(9):e867-e877.