Niels Henning Skotte, Ph.D.

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Mission statement
To make a meaningful difference for patients and family members suffering from the devasting consequences of brain disorders through mechanistic insight into the molecular pathology and the discovery of novel therapeutic targets and biomarkers tracking disease.

Academic degrees
B.Sc. Biochemistry (July 1st, 2002), M.Sc. Human Biology (May 16th, 2006), and Ph.D. Neuroscience (November 21st, 2011) at University of Copenhagen and University of British Columbia.

Appointments
2022 April 1: Assistant Professor (5 years), Principal Investigator, Skotte Lab, ILF, Denmark
2019-2022: Assistant Professor, Matthias Mann Lab, NNF CPR, Denmark
2016-2019: Post-doctoral fellow, Matthias Mann Lab (288.016 citations), NNF CPR, Denmark
2015-2016: Post-doctoral fellow, Michael Nielsen Lab (14.419 citations), NNF CPR, Denmark
2011-2015: Post-doctoral fellow, Michael Hayden lab (96.065 citations), CMMT. UBC, BC, Canada

Scientific area and expertise
- Clinical Mass Spectrometry-based proteomics and integrative study designs
- Biomarker discovery, personalized medicine, and bioinformatics in neurodegeneration
- CNS drug discovery, gene therapy, and medicinal chemistry
- Animal HD models, surgeries, behavioural assays, and primary cell culturing

Publications
30 of peer-reviewed publications, citations 1801; h-index 20; i10-index 22 (Google scholar)

Awards, grants, and donations (principal applicant)
2020-2022: Cure for Huntington's disease Initiative (CDHI) – USD 455.000
2020-2025: Stadslæge Svend Ahrend Larsen og Grosser Jon Johanneson – USD 600.000
2013-2016: Postdoc fellowship (3 years). CIHR, Canada. Top 10 percentile - CAD 135.000
2012-2014: Postdoc fellowship (2 years). Ripples of Hope Pfizer Award - CAD 80.000
2008-2011: PhD fellowship, UCPH USD 250.000
2008-2015 Various foundations and biotech contracts – USD 1.000.000 (co-applicant with Dr. Hayden)

Research management and professional development
- University pedagogic (250 hrs, UCPH)
- Instructional Skills Workshops for Faculty (37hrs, UBC)
- Project Management module 1-3 (45 hrs, UCPH) and (32 PDUs, PMI)

Professional service
2021- Chair of Scientific Advisory Board for Roxiant (www.roxiant.com)
2021 Award-winning lecturer at the University of Copenhagen
2019 Consultant for Mosaic Research Management, New York, USA
2019 Consultant for F. Hoffmann-La Roche, Basel, Switzerland
2018- Consultant and board member of Enroll-HD Scientific Review Committee
2018- Occupational Health and Safety management representative at UCPH
2017- Facilitator of EHDN Biomarker Working group

Teaching at the University of Copenhagen
2021- Cellular and Molecular Biology, ILF.
2021- Biochemistry and Cellular Biology, ILF.
2020- Nervous system Neurological disease. Human biology, BMI.
2019- Protein Research and Critical Thinking, NNF CPR.
2015- Gene therapy, ICCM.

Communication and dissemination

- Chair for the 'Biomarkers and clinical tools' session at the CHDI's 17th Annual HD Therapeutics Conference 2022
- Cerebrospinal Fluid and Plasma Biomarker Discovery for Huntington's Disease Utilizing Mass Spectrometry-based Proteomics. CHDI Conference. April 28th 2021.
- Integrative characterization of the R6/2 mouse model of Huntington's disease. Agency for Science, Technology and Research (A*STAR). Singapore 12 March 2018.

Certification

- Chemical safety, biological safety, and radiation safety. Animal ethics. GDPR.

Selected publications [Links to PubMed, Google Scholar]

(1) Andersen JV**, Skotte NH**, et al. Hippocampal disruptions of synaptic and astrocyte metabolism are primary events of early amyloid pathology in the 5xFAD mouse model of Alzheimer's disease. **Cell Death Dis. 2021.**

(2) Utami KH, **Skotte NH**, et al. Integrative analysis identifies key molecular signatures underlying neurodevelopmental deficits in Fragile X Syndrome. **Biol Psychiatry. 2020.**

(3) **Skotte NH**, et al. Compromised IGF signaling causes caspase-6 activation in Huntington's disease. **Exp Neurol. 2020**.

(4) Ehrnhoefer DE, **Skotte NH**, et al. Activation of Caspase-6 Is Promoted by a Mutant Huntingtin Fragment and Blocked by an Allosteric Inhibitor Compound. **Cell Chem Biol. 2019.**

(5) Andersen JV, **Skotte NH**, et al. Enhanced cerebral branched-chain amino acid metabolism in R6/2 mouse model of Huntington's disease. **Cell Mol Life Sci. 2019.**

(6) Petersen MH, …, **Skotte NH**, Nørremølle A. Functional Differences between Synaptic Mitochondria from the Striatum and the Cerebral Cortex. **Neuroscience. 2019.**

(7) Southwell AL, Kordasiewicz HB, Langbehn D, **Skotte NH**, et al. Huntingtin suppression restores cognitive function in a mouse model of Huntington's disease. **Sci Transl Med. 2018**

(8) Hendriks IA, Lyon D, Su D, **Skotte NH**, et al.. Site-specific characterization of endogenous SUMOylation across species and organs. **Nat Commun. 2018**.

(9) **Skotte NH**, et al. Integrative Characterization of the R6/2 Mouse Model of Huntington's Disease Reveals Dysfunctional Astrocyte Metabolism. **Cell Rep. 2018**.

(10) Southwell AL, **Skotte NH**, et al. A novel humanized mouse model of Huntington disease for preclinical development of therapeutics targeting mutant huntingtin alleles. **Hum Mol Genet. 2017.**

(11) **Skotte NH**, et al.. Palmitoylation of caspase-6 by HIP14 regulates its activation. **Cell Death Differ. 2017**

(12) Kay C, Collins JA**, Skotte NH**, et al.. Huntingtin Haplotypes Provide Prioritized Target Panels for Allele-specific Silencing in Huntington Disease Patients of European Ancestry. **Mol Ther 2015.**

(13) Southwell AL, **Skotte NH**, et al. In vivo evaluation of candidate allele-specific mutant huntingtin gene silencing antisense oligonucleotide drugs. **Molecular Therapy 2014.**

(14) **Skotte NH**, et al**.** A therapeutic option for all HD patients by targeting both allelic variants of a single SNP with two anti-sense oligonucleotides. **PLOS One 2014.**

(15) Ehrnhoefer DE*, **Skotte NH***, et al. p53 increases caspase-6 expression and activation in muscle tissue expreessing mutant huntingtin. **Hum Mol Gen 2013.** ** Joint first authorship.*

SELECTED PUBLICATIONS FOR PUBLICATION IN SUMMER 2022

(1) Erika B. Villanueva, Jon Lundstrøm, **Niels H. Skotte**, ... , Shohreh Issazadeh-Navikas. Distinct impact of IFNAR1 in neurons and astrocytes regulates outcome of PD dementia model. **Submitted to Brain.**

(2) Meeli Mullari, Nicolas Fossat, **Niels H. Skotte**, …, Michael L. Nielsen. Mapping RNA-binding protein regions in brain identifies a role for RBM5 in Huntington disease**. Submitted to Nature Neuroscience.**

(3) **Niels H. Skotte,** …, Matthias Mann. The plasma and CSF proteome in Huntington's disease defines new therapeutic targets and biomarkers tracking disease pathogenesis. **In preparation for Mol Syst Biol.**

(4) **Filippa Qvist,** …, Matthias Mann, **Niels H. Skotte**. CSF Proteome Profiling to detect and avoid sample-related biases in biomarker studies. **In preparation for EMBO Mol Med.**

(5) **Filippa Qvist,** …, Matthias Mann, **Niels H. Skotte**. The plasma proteome in Huntington's disease identifies accessible biomarker candidates. **In preparation for Scientific reports.**