

Kristine Freude
Professor
Pathobiological Sciences
Postal address:
Grønnegårdsvej 7, 1870 Frederiksberg C
Email: kkf@sund.ku.dk
Mobile: +4525572261
Phone: +4535330937
Web address: <https://ivh.ku.dk/>



Short presentation

My research interests are centered on neurodegenerative and neurodevelopmental diseases. In my group we are implementing induced pluripotent cells (iPSC) from humans and animals to understand disease mechanisms leading to neurodegenerative and neurodevelopmental diseases.

The research on human iPSC models for neurodegenerative diseases encompasses Alzheimer's disease (AD), Frontotemporal dementia (FTD) and Glaucoma. Furthermore, we are working with canine iPSC to understand commonalities and divergences between human AD and canine cognitive dysfunction (CCD) also known as dog dementia. Our research on neurodevelopmental disorders is focused on implementing human iPSC models for epilepsy and schizophrenia.

Additionally, besides the canine iPSC, we are working with porcine and monkey iPSC. The establishment of these in vitro iPSC models is aimed in combination with organoid models at replacing and refining the need for in vivo animal models. Current funding sources:

Danish Research Council (FNU); Novo Nordisk Foundation; Lundbeck Foundation, Velux Foundation, Hørslev Foundation

Employment

Professor

Pathobiological Sciences

Frederiksberg C

20 May 2016 → nu

Assistant Project Scientist

University of California at Irvine

Irvine, United States

1 Jan 2009 → 31 Dec 2011

Postdoctoral Fellow

University of California at Irvine

Irvine, United States

15 Feb 2006 → 31 Dec 2008

Visiting Guest Researcher

Lunds University

Sweden

26 Dec 1011 → 24 May 1012

Research outputs

Generation of two patient specific GABRD variants and their isogenic controls for modeling epilepsy

Kamand, M., Taleb, R., Wathikhinnakon, Methi, Mohamed, Fadumo Abdullahi, Ghanzanfari, S. P., Konstantinov, D., Hald, Jonas Laugård, Holst, B., Andersen, C. B., Møller, R. S., Lemke, J. R., Krey, I., Freude, Kristine & Chandrasekaran, Abinaya, 1 Apr 2024, In: Stem Cell Research. 76

APOE4 IS INSTRUMENTAL IN AUGMENTING RHOA KINASE PHOSPHORYLATION AND CONTRIBUTES THEREBY TO CLASSICAL ALZHEIMER'S DISEASE NEURON PHENOTYPES

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Astrocytes: The Stars in Neurodegeneration?

Dittlau, Katarina Stoklund & Freude, Kristine, 28 Feb 2024, In: Biomolecules.

Implications of SNP-triggered miRNA dysregulation in Schizophrenia development

Mohamed, Fadumo Abdullahi & Freude, Kristine, 26 Jan 2024, In: Frontiers in Genetics.

USP30 inhibition induces mitophagy and reduces oxidative stress in parkin-deficient human neurons

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Increased glucose metabolism and impaired glutamate transport in human astrocytes are potential early triggers of abnormal extracellular glutamate accumulation in hiPSC-derived models of Alzheimer's disease

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The Nav1.5 variant G213D found in patients with MEPPC is associated with increased window current and gating pore current

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Challenges in Establishing Animal Induced Pluripotent Stem Cells

Enevoldsen, Sara, Magnusson, H. B. D., Lind, J. U., Freude, Kristine & Callø, Kirstine, 15 Sep 2023.

Complexity of Sex Differences and Their Impact on Alzheimer's Disease

Kadlecová, Marion, Freude, Kristine & Haukedal, H., 24 Apr 2023, In: Biomedicines. 11, 5, 29 p., 1261.

3D-organization and spatial localization of chromatin and epigenetic marks in relation to nucleolar activity in porcine oocytes

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Alteration of microglial metabolism and inflammatory profile contributes to neurotoxicity in a hiPSC-derived microglia model of frontotemporal dementia 3

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Generation of eight hiPSCs lines from two pathogenic variants in CACNA1A using the CRISPR-Cas9 gene editing technology

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Role of S1P-receptor and Rho-kinase in myogenic tone in mesenteric and cerebral arteries of young vs. middle-aged mice

Skovsted, Gry Freja, Aupetit, A., Björling, K., Haanes, K. A., Syberg, S., Jørgensen, N. R., Freude, Kristine, Pearson, J. T. & Jensen, Lars Jørn, 2023, In: Acta Physiologica. 239, S728, e14042.

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APOE4 affects basal and NMDAR mediated protein synthesis in neurons by perturbing calcium homeostasis

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Canine induced pluripotent stem cells: an in vitro approach to validate the dog as a large animal model for Alzheimer's disease

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Mutations in FTD3 CHMP2B causes impaired autophagy and distorted energy metabolism cumulating in reactive astrocyte phenotypes

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Patient iPSC-Derived Neurons for Disease Modeling of Familial Alzheimer's Disease with Mutations in Presenilin 1

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Mutations in the FTSJ1 gene coding for a novel S-adenosylmethionine-binding protein cause nonsyndromic X-linked mental retardation

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Activities

Microglia specific sex differences and their impact in Alzheimer's disease

Freude, Kristine (Other)
8 May 2024

Application of CRISPR/Cas9 in modelling neurodegenerative diseases

Freude, Kristine (Other)
2 May 2024

Deciphering the sex specific neuroinflammatory component in Alzheimer's disease

Freude, Kristine (Other)
30 Apr 2024

SUND Neuroscience Event

Freude, Kristine (Participant)
30 Apr 2024

Deciphering the sex specific neuroinflammatory component in Alzheimer's disease

Freude, Kristine (Other)
4 Apr 2024

Trønderbrain Research Seminar 2024

Freude, Kristine (Participant)
4 Apr 2024 → 5 Apr 2024

DEVELOPNOID Annual meeting 19th to 20th of March 2024

Freude, Kristine (Participant) & Mohamed, Fadumo Abdullahi (Participant)
19 Mar 2024 → 20 Mar 2024

Gene editing

Freude, Kristine (Other)
19 Mar 2024

(AD/PD 2024) INTERNATIONAL CONFERENCE ON ALZHEIMER'S AND PARKINSON'S DISEASES AND RELATED NEUROLOGICAL DISORDERS

Freude, Kristine (Participant) & Tao, Ruixin (Participant)
5 Mar 2024 → 9 Mar 2024

Neuroimmunology Research Society Denmark (NIRS-DK) Conference 2024

Freude, Kristine (Participant)
4 Mar 2024

iPSC Models to Decipher Glia Mediated Inflammatory Responses in Neurodegenerative Diseases

Freude, Kristine (Other)

4 Mar 2024

Biology of Aging and lifestyle

Jensen, Lars Jørn (Participant) & Freude, Kristine (Participant)

31 Mar 2022

Induced pluripotent stem cell models for neurodegenerative diseases

Freude, Kristine (Other)

31 Mar 2022

Prizes

Alzheimer Forskningsfonden Forskerpris

Freude, Kristine (Recipient), 2020

Press/Media

Kort Sagt: "The hope and the hype of stem cells" - by Kristine Freude

Kristine Freude

10/03/2016

1 Media contribution

Medicin mod demens: Ingen ved, om kvinder får gavn af det

Kristine Freude

01/06/2023

1 Media contribution

Minihjerner af stamceller skal løse Alzheimergåden

Kristine Freude & Henriette Haukedal

23/10/2020

1 Media contribution

Musene med to fædre

Kristine Freude

09/03/2023

1 Media contribution