

Jan-Wilhelm Kornfeld  
Professor  
Functional Genomics and Metabolism Research Unit  
Institut for Biokemi og Molekylær Biologi  
E-mail: janwilhelmkornfeld@bmb.sdu.dk  
Telefon: 93507481  
Hjemmeside: <http://www.kornfeldlab.com>  
Twitter: kornfeld\_janw



## Ansættelse

**Institut for Biokemi og Molekylær Biologi**

SDU

Odense M

1. jul. 2023 → present

### Professor

Funktionelle Genomiske Studier og Metabolisme

SDU

1. jul. 2023 → present

## Research interests

The impact of non-protein coding RNAs like microRNAs and, more recently, long noncoding RNAs on eukaryotic gene regulation just started to be understood. The Kornfeld lab would like to take part in this 'Noncoding revolution' by identifying disease-associated noncoding RNAs and investigating their role in signaling circuits regulating cellular and organismal energy homeostasis in health and metabolic disease. We apply state-of-the-art techniques, for instance next-generation sequencing, transgenic mouse models and in vivo RNA inhibition approaches to understand the intricate biology of disease-associated noncoding RNAs. Our ultimate goal is to define novel RNA targets for correction of metabolic diseases.

## Education and professional experience

2018 - DDA Professor for Molecular Biology of Metabolism Diseases (SDU, Denmark)  
2014 - 2018 Group Leader at Max Planck Institute for Metabolism Research (Germany)  
2013 - 2018 Adjunct Group Leader at Cologne Cluster of Excellence (CECAD, Germany)  
2008 PhD in Cell Biology, University of Kiel (Germany)  
2003 Diploma in Biochemistry, Medical University of Hanover (Germany)

## Awards and Honours

2010 - 2012 Long Term Fellowship of the European Molecular Biology Organisation (EMBO)  
2010 - 2012 Senior Postdoctoral Career Grant (CECAD Cluster of Excellence)

## Projekter

**DFF - FSS - The role of proto-adipokine AOC3 during adipose tissue dysfunction in metabolic diseases**

Kornfeld, J.-W. (Projektdeltager)

01/01/2022 → 30/06/2024

**EU - Horizon 2020 - Excellent Science - ERC - Transgenerational regulation of glucose metabolism by noncoding RNAs - TransGen RNA' ('action')**

Kornfeld, J.-W. (Overordnet koordinator)

01/01/2018 → 30/04/2021

**TransGen RNA: EU - Horizon202 - Excellence Science - ERC - Starting Grant: Transgenerational regulation of glucose metabolism by noncoding RNAs**

Kornfeld, J.-W. (Overordnet koordinator)

01/05/2016 → 30/04/2021

**Gm15441: Investigating the function of obesity-associated lncRNA Gm15441 in liver metabolism**

Oliveira, B. M. S. (Projektdeltager) & Kornfeld, J.-W. (PI)

12/11/2018 → 30/04/2021

**Novo Nordisk Challenge Programme - ADIPOSIGN - Center for Adipocyte Signaling**

Mandrup, S. (Overordnet koordinator), Kornfeld, J.-W. (PI), Quesada-Lopez, T. P. (Projektdeltager), Mikkelsen, V. A. (Ph.d.-studerende), Josephrajan, A. (Projektdeltager), Malmros, R. V. (Ph.d.-studerende), Gerhart-Hines, Z. (PI), Babu, M. M. (PI), Elmelund-Præstekær, L. C. B. (Koordinator), Wishoff, M. (Projektdeltager), Nielsen, R. (Projektdeltager) & Marcher, A.-B. (Projektdeltager)

01/01/2019 → 31/12/2024

**Novo Nordisk Fonden - Biovidenskab og Basal Biomedicin - Dissecting the in vivo contribution of cold-inducible Adenylyl cyclase 3 protein truncations to brown adipose tissue homeostasis and glucose metabolism**

Kornfeld, J.-W. (Overordnet koordinator)

01/04/2018 → 31/03/2020

**Novo Nordisk Fonden - Challenge Programme 2018 - ADIPOSIGN - Center for Adipocyte Signaling JK**

Kornfeld, J.-W. (Overordnet koordinator)

01/05/2019 → 31/12/2024

**Novo Nordisk Fonden - Nutrient-chromatin crosstalk in adipose tissue health and metabolic disease (HISTONE HEALTH)**

Kornfeld, J.-W. (Projektdeltager)

01/01/2022 → 31/12/2024

**Sygeforsikringen "Danmark" - Novel approaches to intergenerational epigenetic inheritance of Metabolic**

Kornfeld, J.-W. (Projektdeltager)

01/05/2021 → 30/04/2025

**Uddannelses- og Forskningsministeriet - FSS - BACE1 cell surface proteostasis as endocrine nexus connecting metabolic disease**

Kornfeld, J.-W. (Overordnet koordinator)

01/12/2018 → 31/01/2021

**Undervisning og vejledning****BMB508 - Advanced Molecular Biology**

Kornfeld, J.-W.

01/01/2018 → ...

**BMB822 - Modern Developments and Technologies in Molecular Cell Biology**

Kornfeld, J.-W. & Meola, N.

01/01/2018 → ...

**NAT501 - First year project - Responsible supervisor**

Kornfeld, J.-W. & Kiefer, C. A.

01/01/2018 → ...

**Supervision**

2018 - 2 ISA Students

2014 - 5 BSc and MSc Students

2014 - 6 PhD Students

## Publikationer

### **Mouse vascularized adipose spheroids: an organotypic model for thermogenic adipocytes**

Daidsen, L. I., Hagberg, C. E., Goitea, V., Lundby, S. M., Larsen, S., Ebbesen, M. F., Stanic, N., Topel Batarlar, H. & Kornfeld, J.-W., 25. jun. 2024, I: *Frontiers in Endocrinology*. 15, 18 s., 1396965.

### **Cold-induced expression of a truncated adenylyl cyclase 3 acts as rheostat to brown fat function**

Khani, S., Topel, H., Kardinal, R., Tavanez, A. R., Josephrajan, A., Larsen, B. D. M., Gaudry, M. J., Leyendecker, P., Egedal, N. M., Güller, A. S., Stanic, N., Ruppert, P. M. M., Gaziano, I., Hansmeier, N. R., Schmidt, E., Klemm, P., Vagliano, L. M., Stahl, R., Duthie, F. & Krause, J. H. & 14 flere, Bici, A., Engelhard, C. A., Gohlke, S., Frommolt, P., Gnad, T., Rada-Iglesias, A., Pradas-Juni, M., Schulz, T. J., Wunderlich, F. T., Pfeifer, A., Bartelt, A., Jastroch, M., Wachten, D. & Kornfeld, J. W., jun. 2024, I: *Nature Metabolism*. 6, 6, s. 1053-1075

### **Nanopore sequencing unveils the complexity of the cold-activated murine brown adipose tissue transcriptome**

Engelhard, C. A., Khani, S., Derdak, S., Bilban, M. & Kornfeld, J. W., 18. aug. 2023, I: *iScience*. 26, 8, 24 s., 107190.

### **Studying The Vascular Adipose Niche Using Organotypic Spheroids**

Daidsen, L. I., Hagberg, C. E., Ebbesen, M. F. & Kornfeld, J.-W., 23. mar. 2023.

### **Studying The Vascular Adipose Niche Using Organotypic Spheroids**

Daidsen, L. I., Hagberg, C. E., Ebbesen, M. F. & Kornfeld, J.-W., 14. mar. 2023.

### **Comprehensive transcriptional profiling and mouse phenotyping reveals dispensable role for adipose tissue selective long noncoding RNA Gm15551**

Engelhard, C. A., Huang, C., Khani, S., Kasperek, P., Prochazka, J., Rozman, J., Reguera, D. P., Sedlacek, R. & Kornfeld, J. W., jun. 2022, I: *Non-coding RNA*. 8, 3, 32.

### **The function of proto-adipokine AOC3 during adipose tissue dysfunction in metabolic diseases**

Topel Batarlar, H., Daidsen, L. I. (Medlem af forfattergruppering), Egedal, N. M. (Medlem af forfattergruppering), Park, J. H. (Medlem af forfattergruppering), Larsen, B. D. M. (Medlem af forfattergruppering) & Kornfeld, J.-W. (Medlem af forfattergruppering), 30. maj 2022.

### **ExomiRs at the crossroads—divergent role of exosomal miRNAs in early and chronic obesity**

Park, J. H. & Kornfeld, J. W., sep. 2021, I: *Nature Metabolism*. 3, 9, s. 1137–1138

### **Dynamic changes in DICER levels in adipose tissue control metabolic adaptations to exercise**

Brandão, B. B., Madsen, S., Rabiee, A., Oliverio, M., Ruiz, G. P., Ferrucci, D. L., Branquinho, J. L., Razolli, D., Pinto, S., Nielsen, T. S., Festuccia, W. T., Martins, A. S., Guerra, B. A., Knittel, T. L., Søgaard, D., Larsen, S., Helge, J. W., Brandauer, J., Velloso, L. A. & Emanuelli, B. & 6 flere, Kornfeld, J. W., Kahn, C. R., Vienberg, S. G., Zierath, J. R., Treebak, J. T. & Mori, M. A., 22. sep. 2020, I: *PNAS*. 117, 38, s. 23932-23941

### **Obesity-associated long noncoding RNA LincIRS2 governs transcriptional plasticity of hepatic fasting responses**

Daidsen, L. I., Pradas-Juni, M. (Medlem af forfattergruppering), Hansmeier, N. R. (Medlem af forfattergruppering), Meola, N. (Medlem af forfattergruppering) & Kornfeld, J.-W. (Medlem af forfattergruppering), 24. aug. 2020.

### **Senescence-Associated Metabolomic Phenotype in Primary and iPSC-Derived Mesenchymal Stromal Cells**

Fernandez-Rebollo, E., Franzen, J., Goetzke, R., Hollmann, J., Ostrowska, A., Oliverio, M., Sieben, T., Rath, B., Kornfeld, J.-W. & Wagner, W., 11. feb. 2020, I: *Stem Cell Reports*. 14, 2, s. 201-209

### **A MAFG-lncRNA axis links systemic nutrient abundance to hepatic glucose metabolism**

Pradas-Juni, M., Hansmeier, N. R., Link, J. C., Schmidt, E., Larsen, B. D., Klemm, P., Meola, N., Topel, H., Loureiro, R., Dhaouadi, I., Kiefer, C. A., Schwarzer, R., Khani, S., Oliverio, M., Awazawa, M., Frommolt, P., Heeren, J., Scheja, L., Heine, M. & Dieterich, C. & 15 flere, Büning, H., Yang, L., Cao, H., Jesus, D. F. D., Kulkarni, R. N., Zevnik, B., Tröder, S. E., Knippschild, U., Edwards, P. A., Lee, R. G., Yamamoto, M., Ulitsky, I., Fernandez-Rebollo, E., Vallim, T. Q. D. A. & Kornfeld, J.-W., 2020, I: *Nature Communications*. 11, 1, 644.

**s -nr: a visual analytics framework for contextual analyses of private and public RNA-seq data**

Klemm, P., Frommolt, P. & Kornfeld, J. W., 24. jan. 2019, I: BMC Genomics. 20, 12 s., 85.

**Rapid Generation of Long Noncoding RNA Knockout Mice Using CRISPR/Cas9 Technology**

Hansmeier, N. R., Widdershooven, P. J. M., Khani, S. & Kornfeld, J.-W., 23. jan. 2019, I: Non-Coding RNA. 5, 1, s. 1-12

**LincRNA H19 protects from dietary obesity by constraining expression of monoallelic genes in brown fat**

Schmidt, E., Dhaouadi, I., Gaziano, I., Oliverio, M., Klemm, P., Awazawa, M., Mitterer, G., Fernandez-Rebollo, E., Pradas-Juni, M., Wagner, W., Hammerschmidt, P., Loureiro, R., Kiefer, C., Hansmeier, N. R., Khani, S., Bergami, M., Heine, M., Ntini, E., Frommolt, P. & Zentis, P. & 5 flere, Ørom, U. A., Heeren, J., Blüher, M., Bilban, M. & Kornfeld, J. W., 6. sep. 2018, I: Nature Communications. 9, 1, 16 s., 3622.

**A microRNA screen reveals that elevated hepatic ectodysplasin A expression contributes to obesity-induced insulin resistance in skeletal muscle**

Awazawa, M., Gabel, P., Tsaousidou, E., Nolte, H., Krüger, M., Schmitz, J., Ackermann, P. J., Brandt, C., Altmüller, J., Motameny, S., Wunderlich, F. T., Kornfeld, J.-W., Blüher, M. & Brüning, J. C., dec. 2017, I: Nature Medicine. 23, 12, s. 1466-1473

**Lsd1 ablation triggers metabolic reprogramming of brown adipose tissue**

Duteil, D., Tosic, M., Lausecker, F., Nenseth, H. Z., Müller, J. M., Urban, S., Willmann, D., Petroll, K., Messaddeq, N., Arrigoni, L., Manke, T., Kornfeld, J.-W., Brüning, J. C., Zagoriy, V., Meret, M., Dengjel, J., Kanouni, T. & Schüle, R., 18. okt. 2016, I: Cell Reports. 17, 4, s. 1008-1021

**Decoding Lamarck-transgenerational control of metabolism by noncoding RNAs**

Schmidt, E. & Kornfeld, J.-W., jun. 2016, I: Pflügers Archiv - European Journal of Physiology. 468, 6, s. 959-969

**Dicer1-miR-328-Bace1 signalling controls brown adipose tissue differentiation and function**

Oliverio, M., Schmidt, E., Mauer, J., Baitzel, C., Hansmeier, N., Khani, S., Konieczka, S., Pradas-Juni, M., Brodesser, S., Van, T.-M., Bartsch, D., Brönneke, H. S., Heine, M., Hilpert, H., Tarcitano, E., Garinis, G. A., Frommolt, P., Heeren, J., Mori, M. A. & Brüning, J. C. & 1 flere, Kornfeld, J.-W., mar. 2016, I: Nature Cell Biology. 18, 3, s. 328-336

**Obesity-induced CerS6-dependent C16:0 ceramide production promotes weight gain and glucose intolerance**

Turpin, S. M., Nicholls, H. T., Willmes, D. M., Mourier, A., Brodesser, S., Wunderlich, C. M., Mauer, J., Xu, E., Hammerschmidt, P., Brönneke, H. S., Trifunovic, A., LoSasso, G., Wunderlich, F. T., Kornfeld, J.-W., Blüher, M., Krönke, M. & Brüning, J. C., 7. okt. 2014, I: Cell Metabolism. 20, 4, s. 678-686

**Regulation of metabolism by long, non-coding RNAs**

Kornfeld, J.-W. & Brüning, J. C., 2014, I: Frontiers in Genetics. 5, 57.

**Obesity-induced overexpression of miR-802 impairs glucose metabolism through silencing of *Hnf1b***

Kornfeld, J. W., Baitzel, C., Könnner, A. C., Nicholls, H. T., Vogt, M. C., Herrmanns, K., Scheja, L., Haumaitre, C., Wolf, A. M., Knippschild, U., Seibler, J., Cereghini, S., Heeren, J., Stoffel, M. & Brüning, J. C., 7. feb. 2013, I: Nature. 494, 7435, s. 111-115

**MyomiRs-133a/b turn off the heat**

Kornfeld, J.-W. & Brüning, J. C., dec. 2012, I: Nature Cell Biology. 14, 12, s. 1248-9 2 s.

**Hepatic growth hormone and glucocorticoid receptor signaling in body growth, steatosis and metabolic liver cancer development**

Mueller, K. M., Themanns, M., Friedbichler, K., Kornfeld, J.-W., Esterbauer, H., Tuckermann, J. P. & Moriggl, R., 25. sep. 2012, I: Molecular and Cellular Endocrinology. 361, 1-2, s. 1-11

Growth-hormone-induced signal transducer and activator of transcription 5 signaling causes gigantism, inflammation, and premature death but protects mice from aggressive liver cancer  
Friedbichler, K., Themanns, M., Mueller, K. M., Schleder, M., Kornfeld, J. W., Terracciano, L. M., Kozlov, A. V., Haindl, S., Kenner, L., Kolbe, T., Mueller, M., Snibson, K. J., Heim, M. H. & Moriggl, R., mar. 2012, I: *Hepatology* (Baltimore, Md.). 55, 3, s. 941-952

Impairment of hepatic growth hormone and glucocorticoid receptor signaling causes steatosis and hepatocellular carcinoma in mice

Mueller, K. M., Kornfeld, J.-W., Friedbichler, K., Blaas, L., Egger, G., Esterbauer, H., Hasselblatt, P., Schleder, M., Haindl, S., Wagner, K.-U., Engblom, D., Haemmerle, G., Kratky, D., Sexl, V., Kenner, L., Kozlov, A. V., Terracciano, L., Zechner, R., Schuetz, G. & Casanova, E. & 3 flere, Pospisilik, J. A., Heim, M. H. & Moriggl, R., okt. 2011, I: *Hepatology* (Baltimore, Md.). 54, 4, s. 1398-409

Variants in STAT5B associate with serum TC and LDL-C levels

Kornfeld, J.-W., Isaacs, A., Vitart, V., Pospisilik, J. A., Meitinger, T., Gyllensten, U., Wilson, J. F., Rudan, I., Campbell, H., Penninger, J. M., Sexl, V., Moriggl, R., van Duijn, C., Pramstaller, P. P. & Hicks, A. A., sep. 2011, I: *The Journal of Clinical Endocrinology & Metabolism*. 96, 9, s. E1496-E1501

Overexpression of TACE and TIMP3 mRNA in head and neck cancer: association with tumour development and progression

Kornfeld, J.-W., Meder, S., Wohlberg, M., Friedrich, R. E., Rau, T., Riethdorf, L., Löning, T., Pantel, K. & Riethdorf, S., 4. jan. 2011, I: *British Journal of Cancer*. 104, 1, s. 138-45

Signal transducer and activator of transcription 3 protects from liver injury and fibrosis in a mouse model of sclerosing cholangitis

Mair, M., Zollner, G., Schneller, D., Musteanu, M., Fickert, P., Gumhold, J., Schuster, C., Fuchsbichler, A., Bilban, M., Tauber, S., Esterbauer, H., Kenner, L., Poli, V., Blaas, L., Kornfeld, J. W., Casanova, E., Mikulits, W., Trauner, M. & Eferl, R., jun. 2010, I: *Gastroenterology*. 138, 7, s. 2499-508

Disruption of the growth hormone--signal transducer and activator of transcription 5--insulinlike growth factor 1 axis severely aggravates liver fibrosis in a mouse model of cholestasis

Blaas, L., Kornfeld, J.-W., Schramek, D., Musteanu, M., Zollner, G., Gumhold, J., van Zijl, F., Schneller, D., Esterbauer, H., Egger, G., Mair, M., Kenner, L., Mikulits, W., Eferl, R., Moriggl, R., Penninger, J., Trauner, M. & Casanova, E., apr. 2010, I: *Hepatology* (Baltimore, Md.). 51, 4, s. 1319-1326

Expression of activated STAT5 in neoplastic mast cells in systemic mastocytosis: subcellular distribution and role of the transforming oncoprotein KIT D816V

Baumgartner, C., Cerny-Reiterer, S., Sonneck, K., Mayerhofer, M., Gleixner, K. V., Fritz, R., Kerényi, M., Boudot, C., Gouilleux, F., Kornfeld, J.-W., Sillaber, C., Moriggl, R. & Valent, P., dec. 2009, I: *The American Journal of Pathology*. 175, 6, s. 2416-2429

The different functions of Stat5 and chromatin alteration through Stat5 proteins

Kornfeld, J.-W., Grebien, F., Kerényi, M. A., Friedbichler, K., Kovacic, B., Zankl, B., Hoelbl, A., Nivarti, H., Beug, H., Sexl, V., Muller, M., Kenner, L., Mullner, E. W., Gouilleux, F. & Moriggl, R., 1. maj 2008, I: *Frontiers in Bioscience-Landmark*. 13, 16, s. 6237-6254

Direct glucocorticoid receptor-Stat5 interaction in hepatocytes controls body size and maturation-related gene expression

Engblom, D., Kornfeld, J.-W., Schwake, L., Tronche, F., Reimann, A., Beug, H., Hennighausen, L., Moriggl, R. & Schütz, G., 15. maj 2007, I: *Genes & Development*. 21, 10, s. 1157-1162

**High incidence of EMMPRIN expression in human tumors**

Riethdorf, S., Reimers, N., Assmann, V., Kornfeld, J.-W., Terracciano, L., Sauter, G. & Pantel, K., 15. okt. 2006, I: *International Journal of Cancer*. 119, 8, s. 1800-1810

## Commissions of trust

Research institutions and scientific foundations:

Reviewer for German Research Foundation (DFG), German Leibniz Society, Austrian Science Fund (FWF), French National Center for Scientific Research (CNRS), French National Institute of Health and Medical Research (INSERM), Medical Research Council (UK), European Research Council, French National Research Agency.

**Scientific journals:**

Ad-hoc reviewer for NatCommun, Nat Cell Biol, Front Genet, J Clin Invest, Mol Metab, FEBS, Sci Rep, Nucl Acids Res, Cell Cycle.

**Editorial boards:**

Molecular biology section editorial board member Sci Rep.