

ICB 2017 - 2019

## Publications

### 2017

**Binsch C, Jelenik T, Pfitzer A, Dille M, Müller-Lühlhoff S, Hartwig S, Karpinski S, Lehr S, Kabra DG, Chadt AS, Roden M, Al-Hasani H, Castañeda T.** 2017. Absence of the kinase S6k1 mimics the effect of chronic endurance exercise on glucose tolerance and muscle oxidative stress. **Mol Metab.** 6:1443-1453.

**Blumensatt M, Fahlbusch P, Hilgers R, Bekaert M, Herzfeld de Wiza D, Akhyari P, Ruige JB, Ouwens MD.** 2017. Secretory products from epicardial adipose tissue from patients with type 2 diabetes impair mitochondrial  $\beta$ -oxidation in cardiomyocytes via activation of the cardiac renin-angiotensin system and induction of miR-208a. **Basic Res Cardiol.** 112:2.

**Görgens SW, Benninghoff T, Eckardt K, Springer CA, Chadt AS, Melior A, Wefers J, Cramer A, Jensen J, Birkeland KI, Drevon CA, Al-Hasani H, Eckel J.** 2017. Hypoxia in Combination With Muscle Contraction Improves Insulin Action and Glucose Metabolism in Human Skeletal Muscle via the HIF-1 $\alpha$  Pathway. **Diabetes.** 66:2800-2807.

**Jelenik T, Kaul K, Séquaris G, Flögel U, Phielix E, Kotzka J, Knebel B, Fahlbusch P, Hörbelt T, Lehr S, Reinbeck AL, Müller-Wieland D, Esposito I, Shulman GI, Szendrödi J, Roden M.** 2017. Mechanisms of insulin resistance in primary and secondary nonalcoholic fatty liver. **Diabetes.** 66:2241-2253.

Keipert S, Kutschke M, Ost M, Schwarzmayr T, van Schothorst EM, Lamp D, Brachthäuser L, Hamp I, Mazibuko SE, **Hartwig S, Lehr S, Graf E, Plettenburg O, Neff F, Tschöp MH, Jastroch M.** 2017. Long-Term Cold Adaptation Does Not Require FGF21 or UCP1. **Cell Metab.** 26:437-446.e5.

**Knebel B, Göddeke S, Poschmann G, Markgraf D, Jacob S, Nitzgen U, Passlack W, Preuß C, Dicken H-D, Stühler K, Hartwig S, Lehr S, Kotzka J.** 2017. Novel Insights into the Adipokinome of Obese and Obese/Diabetic Mouse Models. **Int J Mol Sci.** 18:9.

**Knebel B, Lehr S, Janssen OE, Hahn S, Jacob S, Nitzgen U, Müller-Wieland D, Kotzka J.** 2017. Association between copy-number variation on metabolic phenotypes and HDL-C levels in patients with polycystic ovary syndrome. **Mol Biol Rep.** 44:51-61.

Maciaczyk D, Picard D, Zhao L, Koch K, Herrera-Rios D, Li G, Marquardt V, Pauck D, **Hoerbelt T, Zhang W, Ouwens DM, Remke M, Jiang T, Steiger HJ, Maciaczyk J, Kahlert UD.** 2017. CBF1 is clinically prognostic and serves as a target to block cellular invasion and chemoresistance of EMT-like glioblastoma cells. **Br J Cancer.** 117:102-112.

**Overhagen S, Blumensatt M, Fahlbusch P, Herzfeld de Wiza D, Müller H, Maxhera B, Akhyari P, Ouwens MD.** 2017. Soluble CD14 inhibits contractile function and insulin action in primary adult rat cardiomyocytes. **BBA Molecular Basis of Disease.** 1863:365-374.

**Röhling M, Strom A, Bönhof G, Püttgen S, Bódis K, Müssig K, Szendrödi J, Markgraf D, Lehr S, Roden M, Ziegler D, GDS Group.** 2017. Differential Patterns of Impaired Cardiorespiratory Fitness and Cardiac Autonomic Dysfunction in Recently Diagnosed Type 1 and Type 2 Diabetes. **Diabetes Care.** 40:246-252.

Schriever SC, Zimprich A, Pfuhlmann K, Baumann P, Giesert F, Klaus V, **Kabra DG, Hafen U, Romanov A, Tschöp MH, Wurst W, Conrad M, Hölter SM, Vogt Weisenhorn D, Pfluger PT.** 2017. Alterations in neuronal control of body weight and anxiety behavior by glutathione peroxidase 4 deficiency. **Neuroscience.** 357:241-254.

**Zhou Z**, Menzel F, **Benninghoff T**, **Chadt AS**, **Du C**, Holman GD, **Al-Hasani H**. 2017. Rab28 is a TBC1D1/TBC1D4 substrate involved in GLUT4 trafficking. **FEBS Letters**. 591:88-96.

**Ziegler D**, Schleicher E, **Strom A**, **Knebel B**, Fleming T, Nawroth P, Häring H-U, **Papanas N**, **Szendrödi J**, **Müssig K**, **Al-Hasani H**, **Roden M**, GDS Group. 2017. Association of transketolase polymorphisms with measures of polyneuropathy in patients with recently diagnosed diabetes. **Diabetes-Metab Res Rev**. 33:e2811.

## 2018

Akhyari P, Oberle F, Huelsmann J, Heid H, **Lehr S**, Barbian A, Nakanishi S, Aubin H, Jenke A, Lichtenberg A. 2018. Characterization of the epicardial adipose tissue in decellularized human-scaled whole-hearts - implications for the whole-heart tissue engineering. **Tissue engineering. Part A**. 24:682-693.

**Bódis K**, **Kahl S**, **Simon M-C**, **Zhou Z**, **Sell H**, **Knebel B**, Tura A, **Strassburger K**, **Burkart V**, **Müssig K**, **Markgraf D**, **Al-Hasani H**, **Szendroedi J**, **Roden M**, GDS Group. 2018. Reduced expression of stearoyl-CoA desaturase-1, but not free fatty acid receptor 2 or 4 in subcutaneous adipose tissue of patients with newly diagnosed type 2 diabetes mellitus. **Nutr Diabetes**. 8:49.

De Strijcker D, Lapauw B, **Ouwens DM**, Van de Velde D, Hansen D, Petrovic M, Cuvelier C, Tonoli C, Calders P. 2018. High intensity interval training is associated with greater impact on physical fitness, insulin sensitivity and muscle mitochondrial content in males with overweight/obesity, as opposed to continuous endurance training: a randomized controlled trial. **J Musculoskelet Neuronal Interact**. 18:215-226.

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Franko A, Merkel D, Kovarova M, Hoene M, Jaghutriz BA, Heni M, Königsrainer A, Papan C, **Lehr S**, Häring H-U, Peter A. 2018. Dissociation of Fatty Liver and Insulin Resistance in I148M PNPLA3 Carriers: Differences in Diacylglycerol (DAG) FA18:1 Lipid Species as a Possible Explanation. **Nutrients**. 10:1314.

**Goeddeke S**, **Knebel B**, **Fahlbusch P**, **Hörbelt T**, Poschmann G, Van de Velde F, **Benninghoff T**, **Al-Hasani H**, **Jacob S**, Van Nieuwenhove Y, Lapauw B, **Lehr S**, **Ouwens DM**, **Kotzka J**. 2018. CDH13 abundance interferes with adipocyte differentiation and is a novel biomarker for adipose tissue health. **Int J Obes**. 42:1039-1050.

Homann S, Grandoch M, Kiene LS, Podsvyadek Y, Feldmann K, Rabausch B, Nagy N, **Lehr S**, Kretschmer I, Oberhuber A, Bollyky P, Fischer JW. 2018. Hyaluronan synthase 3 promotes plaque inflammation and atheroprogession. **Matrix Biol**. 66:67-80.

**Hörbelt T**, Tacke C, Markova M, **Herzfeld de Wiza D**, Van de Velde F, Bekaert M, Van Nieuwenhove Y, Hornemann S, Rödiger M, Seebeck N, Friedl E, Jonas W, Thoresen GH, **Kuss O**, Rosenthal A, Lange V, Pfeiffer AFH, Schürmann A, Lapauw B, Rudovich N, Pivovarova O, **Ouwens M**. 2018. The novel adipokine WISP1 associates with insulin resistance and impairs insulin action in human myotubes and mouse hepatocytes. **Diabetologia**. 61:2054-2065.

**Jelenik T**, **Dille M**, **Müller-Lühlhoff S**, **Kabra DG**, **Zhou Z**, **Binsch C**, **Hartwig S**, **Lehr S**, **Chadt A**, Peters EMJ, Kruse J, **Roden M**, **Al-Hasani H**, **Castaneda T**. 2018. FGF21 regulates insulin sensitivity following long-term chronic stress. **Mol Metab**. 16:126-138.

**Jelenik T**, Flögel U, **Álvarez-Hernández E**, **Scheiber D**, **Zweck E**, Ding Z, **Rothe M**, **Mastrototaro L**, Kohlhaas V, **Kotzka J**, **Knebel B**, Müller-Wieland D, Moellendorf S, Gödecke

A, Kelm M, Westenfeld R, **Roden M, Szendroedi J**. 2018. Insulin Resistance and Vulnerability to Cardiac Ischemia. **Diabetes**. 67:2695-2702.

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**Knebel B, Göddeke S, Hartwig S, Hörbelt T, Fahlbusch P, Al-Hasani H, Jacob S, Köllmer C, Kettel U, Schiller M, Lehr S, Kotzka J**. 2018. Alteration of Liver Peroxisomal and Mitochondrial Functionality in the NZO Mouse Model of Metabolic Syndrome. **Proteomics Clin Appl**. 12:1.

**Knebel B, Hartwig S, Jacob S, Kettel U, Schiller M, Passlack W, Koellmer C, Lehr S, Müller-Wieland D, Kotzka J**. 2018. Inactivation of SREBP-1a phosphorylation prevents fatty liver disease in mice: identification of related signaling pathways by gene expression profiles in liver and proteomes of peroxisomes. **Int J Mol Sci**. 19:980.

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**Mafakeri S, Flörke RR, Kanngießler S, Hartwig S, Espelage L, De Wendt C, Schönberger T, Hamker N, Lehr S, Chadt A, Al-Hasani H**. 2018. AKT and AMPK regulate TBC1D1 through phosphorylation and its interaction with the cytosolic tail of insulin-regulated aminopeptidase IRAP. **J Biol Chem**. 293:17853-17862.

Müller-Wieland D, Altenburg C, Becher H, Burchard J, Frisch A, Gebhard J, Haas J, Harth V, Heeren J, Hengelbrock J, von Karais M, **Knebel B, Kotzka J**, Löwe B, Marx N, Pinnschmidt H, Preisser A, Rose M, Sawitzky-Rose B, Scheja L, Terschüren C, Töller M, Vettorazzi E, Wegscheider K. 2018. Development of the Metabolic Syndrome: Study Design and Baseline Data of the Lufthansa Prevention Study (LUPS), A Prospective Observational Cohort Survey. **Exp Clin Endocrinol Diabetes**. ePub.

Pfuhmann K, Schriever SC, Baumann P, **Kabra DG**, Harrison L, Mazibuko-Mbeje SE, Contreras RE, Kyriakou E, Simonds SE, Tiganis T, Cowley MA, Woods SC, Jastroch M, Clemmensen C, De Angelis M, Schramm K-W, Sattler M, Messias AC, Tschöp MH, Pfluger PT. 2018. Celastrol Induced Weight Loss is Driven by Hypophagia and Independent From UCP1. **Diabetes**. 67:2456-2465.

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**Röhling M, Pesta D, Markgraf DF, Strassburger K, Knebel B, Burkart V, Szendroedi J, Müssig K, Roden M**, GDS Group. 2018. Metabolic Determinants of Impaired Pulmonary Function in Patients with Newly Diagnosed Type 2 Diabetes Mellitus. **Exp Clin Endocrinol Diabetes**. 126:584-589.

**Schallschmidt T, Lebek S, Altenhofen D, Damen M, Schulte Y, Knebel B**, Herwig R, Rasche A, **Stermann T**, Kamitz A, Hallahan N, Jähnert M, Vogel H, Schürmann A, **Chadt A, Al-Hasani H**. 2018. Two Novel Candidate Genes for Insulin Secretion Identified by Comparative Genomics of Multiple Backcross Mouse Populations. **Genetics**. 210:1527-1542.

**Stermann T**, Menzel F, **Weidlich C, Jeruschke K, Weiß J, Altenhofen D, Benninghoff T**, Pujol A, Bosch F, Rustenbeck I, **Ouwens M**, Thoresen GH, **de Wendt C, Lebek S, Schallschmidt T, Kragl M, Lammert E, Chadt AS, Al-Hasani H**. 2018. Deletion of the RabGAP

TBC1D1 leads to enhanced insulin secretion and fatty acid oxidation in islets from male mice. **Endocrinology**. 159:1748-1761.

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Tacke C, Aleksandrova K, Rehfeldt M, Murahovschi V, Markova M, Kemper M, Hornemann S, Kaiser U, Honig C, Gerbracht C, Kabisch S, **Hörbelt T, Ouwens M**, Weickert MO, Boeing H, Pfeiffer AFH, Pivovarov O, Rudovich N. 2018. Assessment of circulating Wnt1 inducible signalling pathway protein 1 (WISP-1)/CCN4 as a novel biomarker of obesity. **J Cell Commun Signal**. 12:539-548.

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## 2019

**Carstensen-Kirberg M, Röhrig K, Niersmann C, Ouwens DM, Belgardt BF, Roden M, Herder C**. 2019. Sfrp5 increases glucose-stimulated insulin secretion in the rat pancreatic beta cell line INS-1E. **PLoS ONE**. 14:e0213650.

Feldmann K, Grandoch M, Kohlmorgen C, Valentin B, Gerfer S, Nagy N, **Hartwig S, Lehr S**, Fender AC, Fischer JW. 2019. Decreased M1 macrophage polarization in dabigatran-treated Ldlr-deficient mice: Implications for atherosclerosis and adipose tissue inflammation. **ATHEROSCLEROSIS**. 287:81-88.

Franko A, **Hartwig S, Kotzka J**, Ruoß M, Nüssler AK, Königsrainer A, Häring H-U, **Lehr S**, Peter A. 2019. Identification of the Secreted Proteins Originated from Primary Human Hepatocytes and HepG2 Cells. **Nutrients**. 11:1795.

Grandoch M, Flögel U, Virtue S, Maier JK, **Jelenik T**, Kohlmorgen C, Feldmann K, Ostendorf Y, **Castañeda TR, Zhou Z**, Yamaguchi Y, Nascimento EBM, Sunkari VG, Goy C, Kinzig M, Sörgel F, Bollyky PL, Schrauwen P, **Al-Hasani H, Roden M**, Keipert S, Vidal-Puig A, Jastroch M, Haendeler J, Fischer JW. 2019. 4-Methylumbelliferone improves the thermogenic capacity of brown adipose tissue. **Nat Metab**. 1:546-559.

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**Kjøbsted R, Chadt A, Jørgensen NO, Kido K, Larsen JK, de Wendt C, Al-Hasani H, Wojtaszewski JFP.** 2019. TBC1D4 is Necessary for Enhancing Muscle Insulin Sensitivity in Response to AICAR and Contraction. **Diabetes.** 68:1756-1766.

**Kjøbsted R, Roll JLW, Jørgensen NO, Birk JB, Foretz M, Viollet B, Chadt A, Al-Hasani H, Wojtaszewski JFP.** 2019. AMPK and TBC1D1 Regulate Muscle Glucose Uptake After - But Not During - Exercise and Contraction. **Diabetes.** 68:1427-1440.

**Knebel B, Fahlbusch P, Dille M, Wahlers N, Hartwig S, Jacob S, Kettel U, Schiller M, Herebian D, Koellmer C, Lehr S, Müller-Wieland D, Kotzka J.** 2019. Fatty Liver Due to Increased de novo Lipogenesis: Alterations in the Hepatic Peroxisomal Proteome. **Front Cell Dev Biol.** 7:248.

**Knebel B, Fahlbusch P, Poschmann G, Dille M, Wahlers N, Stühler K, Hartwig S, Lehr S, Schiller M, Jacob S, Kettel U, Müller-Wieland D, Kotzka J.** 2019. Adipokinome Signatures in Obese Mouse Models Reflect Adipose Tissue Health and Are Associated with Serum Lipid Composition. **Int J Mol Sci.** 20.

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**Rathmann W, Strassburger K, Bongaerts B, Kuss O, Müssig K, Burkart V, Szendroedi J, Kotzka J, Knebel B, Al-Hasani H, Roden M, GDS Group.** 2019. A variant of the glucose transporter gene SLC2A2 modifies the glycaemic response to metformin therapy in recently diagnosed type 2 diabetes. **Diabetologia.** 62:286-291.

**Rathmann W, Strassburger K, Bongaerts B, Kuss O, Müssig K, Burkart V, Szendroedi J, Kotzka J, Knebel B, Al-Hasani H, Roden M, GDS Group.** 2019. Erbgut beeinflusst Blutglukosereaktion. **Diabetes aktuell.** 17:102-103.

**Romacho T, Sell H, Indrakusuma I, Roehrborn D, Castañeda TR, Jelenik T, Markgraf D, Hartwig S, Weiß J, Al-Hasani H, Roden M, Eckel J.** 2019. DPP4 deletion in adipose tissue improves hepatic insulin sensitivity in diet-induced obesity. **AJP Endocrinol Metab.** in press.

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**Simon M-C**, **Möller-Horigome A**, **Strassburger K**, **Nowotny B**, **Knebel B**, **Müssig K**, **Herder C**, **Szendroedi J**, **Roden M**, GDS Group. 2019. Correlates of Insulin-Stimulated glucose Disposal in Recent Onset Type 1 and Type 2 Diabetes. **J Clin Endocrinol Metab.** 104:2295-2304.

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## Reviews

### 2017

Müller-Wieland D, Schütt K, **Knebel B**, **Kotzka J**, Lehrke M, Marx N. 2017. Metabolische Syndrom: Pathogenese und klinische Charakteristiken. **Der Gastroenterologe**, 12:286-293.

### 2018

**Mafakeri S**, **Chadt A**, **Al-Hasani H**. 2018. Regulation of RabGAPs involved in insulin action. **Biochem Soc Trans.** 46:683-690.

### 2019

**Espelage L**, **Al-Hasani H**, **Chadt A**. 2019. RabGAPs TBC1D1 and TBC1D4 in skeletal muscle function and exercise. **J Mol Endocrinol** ePub.