



Research output 2019 – «One Health» Metabolic diseases

Abay, Asena; Simionato, Greta; Chachanidze, Revaz; Bogdanova, Anna; Hertz, Laura; Bianchi, Paola; van den Akker, Emile; von Lindern, Marieke; Leonetti, Marc; Minetti, Giampaolo; Wagner, Christian; Kaestner, Lars (2019). Glutaraldehyde - A subtle tool in the investigation of healthy and pathologic red blood cells. *Frontiers in Physiology*, 10:514.

Baumann, Julia; Huang, Sheng-Fu; Gassmann, Max; Tsao, Chih-Chieh; Ogunshola, Omolara O (2019). Furin inhibition prevents hypoxic and TGF β -mediated blood-brain barrier disruption. *Experimental Cell Research*, 383(2):111503.

Felicitas S. Boretti, Bo Burla, Jeremy Deuel, Liang Gao, Markus R. Wenk, Annette Liesegang, Nadja S. Sieber-Ruckstuhl, Serum lipidome analysis of healthy beagle dogs receiving different diets. *Metabolomics*. 2019 Dec 3;16(1):1. doi: 10.1007/s11306-019-1621-3.

Cruz-Aguliar RM, Wantia N, Clavel T, Vehreschild MJGT, Buch T, Bajbouj M, Haller D, Busch D, Schmid RM, Stein-Thoeringer CK, An Open-Labeled Study on Fecal Microbiota Transfer in Irritable Bowel Syndrome Patients Reveals Improvement in Abdominal Pain Associated with the Relative Abundance of Akkermansia Muciniphila. *Digestion*. 2019;100(2):127-138. doi: 10.1159/000494252. PubMed. PMID: 30423561.

Daryadel A., Natale L., Seebeck P., Bettoni C., Schnitzbauer U., Gassmann M., Wagner C.A. (2019). Elevated FGF23 and Disordered Renal Mineral Handling With Reduced Bone Mineralization in Chronically Erythropoietin Over-Expressing Transgenic Mice. *Sci Rep*, 9 (1), 14989.

Flueck, Joelle Leonie; Gallo, Alessandro; Moelijker, Nynke; Bogdanov, Nikolay; Bogdanova, Anna; Perret, Claudio (2019). Influence of equimolar doses of beetroot juice and sodium nitrate on time trial performance in handcycling. *Nutrients*, 11(7):E1642.

Gangnat, Isabelle; Wichert, Brigitta; Nuss, Karl; Liesegang, Annette (2019). Spontane Beinbrüche bei Ziegen: Folge eines Kupfermangels? In: Kreuzer, Michael; Lanzini, T; Liesegang, Annette; Bruckmaier, R; Hess, H D; Ulbrich, S E. Mengen- und Spurenelemente: essentiell für Leistung und Tiergesundheit: Tagungsbericht 14. Mai 2019, ETH-Zürich, Institut für Agrarwissenschaften. Zürich: Eidgenössische Technische Hochschule Zürich (ETH), 101-103.

Gassmann, Max; Mairbäurl, Heimo; Livshits, Leonid; Seide, Svenja; Hackbusch, Matthes; Malczyk, Monika; Kraut, Simone; Gassmann, Norina N; Weissmann, Norbert; Muckenthaler, Martina U (2019).



The increase in hemoglobin concentration with altitude varies among human populations. *Annals of the New York Academy of Sciences*, 1450(1):204-220.

Gut, Winnie Nicole. Efficacy and mechanism of action of long-term treatment with antibody NI-203.26C11 targeting aggregated IAPP in type 2 diabetes. 2019, University of Zurich, Vetsuisse-Fakultät.

Huisjes, Rick; Makhro, Asya; Llaudet-Planas, Esther; Hertz, Laura; Petkova-Kirova, Polina; Verhagen, Liesbeth P; Pignatelli, Silvia; Rab, Minke Ae; Schiffelers, Raymond M; Seiler, Elena; van Solinge, Wouter W; Vives Corrons, Joan-LLuis; Mañú-Pereira, Maria; Kaestner, Lars; Bogdanova, Anna; van Wijk, Richard (2019). Density, heterogeneity and deformability of red cells as markers of clinical severity in hereditary spherocytosis. *Haematologica*. 2019 May 30. pii: haematol.2018.188151. doi: 10.3324/haematol.2018.188151.

Hopp AK, Grüter P, Hottiger MO, Regulation of Glucose Metabolism by NAD⁺ and ADP-Ribosylation. *Cells*. 2019 Aug 13;8(8). pii: E890. doi: 10.3390/cells8080890.

Kämpf, Sandra; Seiler, Elena; Bujok, Jolanta; Hofmann-Lehmann, Regina; Riond, Barbara; Makhro, Asya; Bogdanova, Anna (2019). Aging markers in equine red blood cells. *Frontiers in Physiology*, 10:893.

Stefanie Kather, Niels Grützner, Peter H Kook, Franziska Dengler, Romy M Heilmann, Review of Cobalamin Status and Disorders of Cobalamin Metabolism in Dogs. *J Vet Intern Med*. 2019 Nov 23. PMID: 31758868 DOI: 10.1111/jvim.15638.

Kieler, Ida Nordang; Osto, Melania; Hugentobler, Leoni; Puetz, Lara; Gilbert, M Thomas P; Hansen, Torben; Pedersen, Oluf; Reusch, Claudia E; Zini, Eric; Lutz, Thomas A; Bjørnvad, Charlotte Reinhard (2019). Diabetic cats have decreased gut microbial diversity and a lack of butyrate producing bacteria. *Scientific Reports*, 9(1):4822.

Khosravi MA, Abbasalipour M, Concordet JP, Berg JV, Zeinali S, Arashkia A, Azadmanesh K, Buch T, Karimipour M. Targeted deletion of BCL11A gene by CRISPR-Cas9 system for fetal hemoglobin reactivation: A promising approach for gene therapy of beta thalassemia disease. *Eur J Pharmacol*. 2019 Jul. 5;854:398-405. doi: 10.1016/j.ejphar.2019.04.042. PubMed PMID: 31039344.

Peter H Kook, Martin Hersberger, Daily Oral Cyanocobalamin Supplementation in Beagles With Hereditary Cobalamin Malabsorption (Imerslund-Gräsbeck Syndrome) Maintains Normal Clinical and



Cellular Cobalamin Status. *J Vet Intern Med.* 2019 Mar;33(2):751-757. PMID: 30554416 PMCID: PMC6430909 DOI: 10.1111/jvim.15380.

Le Foll, Christelle (2019). Hypothalamic fatty acids and ketone bodies sensing and role of FAT/CD36 in the regulation of food intake. *Frontiers in Physiology*, 10:1036.

Linder, Kerstin. Human-derived antibodies targeting IAPP aggregates for the treatment of Type 2 diabetes. 2019, University of Zurich, Vetsuisse-Fakultät.

Lutz, Thomas A, Le Foll, Christelle (2019). Endogenous amylin contributes to birth of microglial cells in arcuate nucleus of hypothalamus and area postrema during fetal development. *American Journal of Physiology. Regulatory, Integrative and Comparative Physiology*, 316(6):R791-R801.

Lutz T.A., Bueter M., Geary N. (2019). Introduction to the Special Issue "Bariatric Surgery and Appetite". *Appetite*, 146, 104515 Nov 13.

Montero, David; Haider, Thomas; Flammer, Andreas J (2019). Erythropoietin response to anaemia in heart failure. *European Journal of Preventive Cardiology*, 26(1):7-17.

Morgantini C., Jager J., Li X., Levi L., Azzimato V., Sulen A., Barreby E., Xu C., Tencerova M., Näslund E., Kumar C., Verdeguer F., Straniero S., Hultenby K., Björkström N.K., Ellis E., Rydén M., Kutter C., Hurrell T., Lauschke V.M., Boucher J., Tomčala A., Krejčová G., Bajgar A., Aouadi M. Liver macrophages regulate systemic metabolism through non-inflammatory factors. *Nature Metabolism* 1:445-459(2019).

Mumphrey, Michael B Hao, Zheng; Leigh Townsend, R; Qualls-Creekmore, Emily; Yu, Sangho; Lutz, Thomas A; Münzberg, Heike; Morrison, Christopher D; Berthoud, Hans-Rudolf (2019). Gastric bypass surgery in lean adolescent mice prevents diet-induced obesity later in life. *Scientific Reports*, 9(1):7881.

Nasias, Dimitris; Evangelakos, Ioannis; Nidris, Vasilis; Vassou, Despoina; Tarasco, Erika; Lutz, Thomas A; Kardassis, Dimitris (2019). Significant changes in hepatic transcriptome and circulating miRNAs are associated with diet-induced metabolic syndrome in apoE3L.CETP mice. *Journal of Cellular Physiology*, 234(11):20485-20500.

Neves, Joana; Haider, Thomas; Gassmann, Max; Muckenthaler, Martina U (2019). Iron homeostasis in the lungs-A balance between health and disease. *Pharmaceuticals*, 12(1):E5.



Ida Nordang Kieler, Melania Osto, Leoni Hugentobler, Lara Puetz, M Thomas P Gilbert, Torben Hansen, Oluf Pedersen, Claudia E Reusch, Eric Zini, Thomas A Lutz, Charlotte Reinhard Bjørnvad, Diabetic Cats Have Decreased Gut Microbial Diversity and a Lack of Butyrate Producing Bacteria Sci Rep. 2019 Mar 18;9(1):4822. PMID: 30886210 PMCID: PMC6423039 DOI: 10.1038/s41598-019-41195-0.

Petkova-Kirova, Polina; Hertz, Laura; Danielczok, Jens; Huisjes, Rick; Makhro, Asya; Bogdanova, Anna; Mañú-Pereira, Maria Del Mar; Vives Corrons, Joan-Lluis; van Wijk, Richard; Kestner, Lars (2019). Red blood cell membrane conductance in hereditary haemolytic anaemias. *Frontiers in Physiology*, 10:386.

Piattini, Federica; Le Foll, Christelle; Kisielow, Jan; Rosenwald, Esther; Nielsen, Peter; Lutz, Thomas; Schneider, Christoph; Kopf, Manfred (2019). A spontaneous leptin receptor point mutation causes obesity and differentially affects leptin signaling in hypothalamic nuclei resulting in metabolic dysfunctions distinct from db/db mice. *Molecular Metabolism*, 25:131-141.

Przybyło M, Clauss M, Ortmann S, Kowalski ZM, Górka P (2019) The effect of fructose supplementation on feed intake, nutrient digestibility and digesta retention time in Reeves's muntjac (*Muntiacus reevesi*). *Journal of Animal Physiology and Animal Nutrition* 103: 1684-1693.

Schneider E.L., Reid R., Parkes D.G., Lutz T.A., Ashley G.W. Santi D.V. (2019). A once-monthly GLP-1 receptor agonist for treatment of diabetic cats. *Domest Anim Endocrinol*, 70, 106373, 2019 Jul 8.

Schneider Gasser, Edith M; Elliot-Portal, Elizabeth; Arias-Reyes, Christian; Losantos-Ramos, Karen; Khalid, Kasifa; Ogunshola, Omolara; Soliz, Jorge (2019). Developmental expression patterns of erythropoietin and its receptor in mouse brainstem respiratory regions. *Respiratory Physiology & Neurobiology*, 267:12-19.

Senn, Seraina S; Le Foll, Christelle; Whiting, Lynda; Tarasco, Erika; Duffy, Sonya; Lutz, Thomas A; Boyle, Christina Neuner (2019). Unsilencing of native leptin receptors (LepR) in hypothalamic SF1 neurons does not rescue obese phenotype in LepR-deficient mice. *American Journal of Physiology. Regulatory, Integrative and Comparative Physiology*, 317(3):R451-R460.

Nadia S Sieber-Ruckstuhl, Claudia E Reusch, Nathalie Hofer-Inteeworn, Claudia Kuemmerle-Fraune, Claudia Müller, Regina Hofmann-Lehmann, Felicitas S Boretti, Evaluation of a Low-Dose Desoxycorticosterone Pivalate Treatment Protocol for Long-Term Management of Dogs With Primary



Hypoadrenocorticism. *J Vet Intern Med.* 2019 May;33(3):1266-1271. PMID: 30865322 PMCID: PMC6524388 DOI: 10.1111/jvim.15475.

Nadja S Sieber-Ruckstuhl, Bo Burla, Susanne Spoerel, Florence Schmid, Claudio Venzin, Amaury Cazenave-Gassiot, Anne K Bendt, Federico Torta, Markus R Wenk, Felicitas S Boretti, Changes in the Canine Plasma Lipidome After Short- And Long-Term Excess Glucocorticoid Exposure *Sci Rep.* 2019 Apr 12;9(1):6015. PMID: 30979907 PMCID: PMC6461633 DOI: 10.1038/s41598-019-42190-1.

Skaria T., Mitchell K., Vogel O., Wälchli T., Gassmann M., Vogel J. (2019). Blood Pressure Normalization-Independent Cardioprotective Effects of Endogenous, Physical Activity-Induced Alpha Calcitonin Gene-Related Peptide (α CGRP) in Chronically Hypertensive Mice. *Circ Res* 2019 Oct 31.

Tarasco, Erika; Boyle, Christina N; Pellegrini, Giovanni; Arnold, Myrtha; Steiner, Regula; Hornemann, Thorsten; Nasias, Dimitris; Kardassis, Dimitris; Whiting, Lynda; Lutz, Thomas A (2019). Body weight-dependent and independent improvement in lipid metabolism after Roux-en-Y gastric bypass in ApoE*3Leiden.CETP mice. *Int J Obes (Lond).* 2019 Dec;43(12):2394-2406. doi: 10.1038/s41366-019-0408-y.

Tata Nageswara Rao, Nils Hansen, Julian Hilfiker, Shivam Rai, Julia-Magdalena Majewska, Danijela Leković, Deniz Gezer, Nicola Andina, Serena Galli, Teresa Cassel, Florian Geier, Julien Delezie, Ronny Nienhold, Hui Hao-Shen, Christian Beisel, Serena Di Palma, Sarah Dimeloe, Jonel Trebicka, Dominik Wolf, Max Gassmann, Teresa W-M Fan, Andrew N Lane, Christoph Handschin, Stefan Dirnhofer, Nicolaus Kröger, Christoph Hess, Thomas Radimerski, Steffen Koschmieder, Vladan P Čokić, Radek C Skoda (2019). JAK2-mutant Hematopoietic Cells Display Metabolic Alterations That Can Be Targeted to Treat Myeloproliferative Neoplasms. *Blood*, 134 (21), 1832-1846.

Vogel, Johannes; Thiel, Cora Sandra; Tauber, Svantje; Stockmann, Christian; Gassmann, Max; Ullrich, Oliver (2019). Expression of Hypoxia-Inducible Factor 1 α (HIF-1 α) and genes of related pathways in altered gravity. *International Journal of Molecular Sciences*, 20(2):E436.