

Professor Karsten Buschard, MD, DMSc, DVSc

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Born 28. September 1946, Copenhagen, Denmark. Married, 6 children

Professional preparation

Medical Education (MD)	University of Copenhagen	1974
Dr. med. (DMSc)	University of Copenhagen	1984
Dr. med. vet. (DVSc)	University of Copenhagen	2011

Appointments

Intern and resident at clinical departments in Copenhagen Hospitals	1974-1976 and 1980-1982
Research Candidate, Pathological Department, Copenhagen University Hospital	1977-1979
Associate Professor, Bartholin Institute, Copenhagen University Hospital	1983-2001
Adj. Professor, Copenhagen University, Faculty of Life Sciences	2001-
Chief Physician, Bartholin Institute, Rigshospitalet	2003-

Commission of Trust

Member of the program committee for EASD	1998-1999
Co-Editor for Diabetologia	2003-2007
Reviewer for 19 international scientific journals	
Recorded in the Danish Who-is-Who (Kraks Blå Bog)	

Networks

Several local and international collaborators, including groups in Oslo, Göteborg, Malmö, Leiden.

Supervision of DMSc-, PhD- and Master thesis

More than 25 since 1994

Honors and awards

Bernhard Rasmussen og hustru Meta Rasmussen's award	1996
Dandy award	2000
Bagger-Sørensen Prisen	2020
Barndiabetes/Johnny Ludvigsson Prisen	2021
Receiver of numerous research grants from public and private funds	

Previous research achievements

Published 269 scientific papers. Major findings are:

1. Studies on type 1 diabetes as an autoimmune disease

Being the first to describe adoptive transfer in diabetes animal models. First studies on the dependency of the thymus immune system for EMC-M virus induced diabetes (Ref. 4,31)
Original studies on reduced regulator T cell function in newly T1D patients (21). Insulin

injections do not dispose to T1D (74). Opposite correlation between T1D and allergic diseases shown experimentally for dermatitis (194). Regarding new studies on stimulation of interferon alpha which again activates 2'-5' synthetase that though several steps induce RNaseL: This can attack virus RNA but also at the very end the cells own RNA. This system is 6 times more active in beta than in alpha cells (ref 106) which might explain why beta cells are hurt by a diabetogenic virus and not the alpha ones. First to describe new findings of gene polymorphism in this system related to T1D, and corresponding changes in the RNA amount of the related genes (ref 259). This could explain that virus might be involved in the T1D pathogenesis, in spite presence of virus is difficult to demonstrate.

2. Studies on the functional state of the beta cells in the pathogenesis of type 1 diabetes

Initiated the idea that the activity of the beta cells is important for development of T1D (40). First studies on increased antigen expression on beta cells in high activity (63), and amplified incidence of true T1D in the last trimester of pregnancy with augmented insulin demand (45,53). Original studies on prophylactic insulin treatment in order to prevent T1D (40). The idea of foetal and neonatal development of the beta cells as being pathogenetic important (59). Corresponding studies in autoimmune thyroid disease (166). The size of pancreas is genetically determined (169), and high demand of insulin increases the volume of the islets but not their number (155).

3. Studies on sphingolipids, especially sulfatide

Original studies on sulfatide, which is present in the beta-cell granules together with insulin (82,142). Sulfatide activates the potassium channels and induces by this mechanism rest of the individual beta cell (147,178). Sulfatide acts anti-inflammatory by reducing cytokine production (111), and by raise of regulator T cells and NKT cells after presentation using CD1d molecules (209). Glycolipid loading to CD1d is facilitated by alcohol (200). Sulfatide increases the production of adiponectin (181) and increases insulin sensitivity (171). Sphingolipid metabolism is changed in type 1 diabetes patients (244). Fenofibrate increases sulfatide and in a T1D case it gives freedom for insulin treatment (253).

4. Studies on prevention of type 1 diabetes induced by gluten-free diet

Original studies on the preventive effect of gluten-free diet in animal models of T1D (131). First studies on intestinal regulator T cells and gluten. Original studies on the T1D protective effect of antibiotic treatment (77), and of presence of *Akkermansia muciniphila* in the intestine (208). First study on the beneficial effect of gluten-free diet to a human T1D patient (210). Original studies on gluten-free diet during pregnancy to prevent T1D in the outcome (Mice: 218. Humans: 245), and on nasal application of gliadin for reduction of T1D (217). Studies on the mechanism of action of gluten-free diet (212,214).

Innovations on prevention of Type 1 Diabetes

1. Prophylactic insulin treatment

40. Gotfredsen C, Buschard K, Frandsen E: Reduction of diabetes incidence of BB Wistar rats by early prophylactic insulin treatment of diabetes-prone animals. *Diabetologia* 28: 933-935, 1985.

2. *Neonatal stimulation of beta cells*
59. Buschard K, Jørgensen M, Aaen K, Bock T, Josefsen K: Prevention of diabetes mellitus in BB rats by neonatal stimulation of beta cells. *Lancet* 335: 134-135, 1990.
3. *Fusidic acid*
77. Buschard K, Pedersen C, Hansen SV, Hageman I, Aaen K, Bendtzen K: Anti-diabetogenic effect of fusidic acid in diabetes prone BB rats. *Autoimmunity* 14: 101-104, 1992.
4. *Hydrolyzed diet*
80. Hoorfar J, Buschard K, Dagnaes-Hansen F: Prophylactic nutritional modification of the incidence of diabetes in autoimmune non-obese diabetic (NOD) mice. *Brit J Nutrition* 69: 597-607, 1993.
5. *Intermitting fasting*
130. Pedersen CR, Hageman I, Bock T, Buschard K: Intermittent feeding and fasting reduces diabetes incidence in BB rats. *Autoimmunity* 30: 243-250, 1999.
6. *Gluten-free diet*
131. Funda DP, Kaas A, Bock T, Tlaskalová-Hogenová H, Buschard K: Gluten-free diet prevents diabetes in NOD mice. *Diabetes Metab Res Rev* 15: 323-327, 1999.
7. *Sulfatide*
144. Buschard K, Fredman P, Hanspers K, Reich E-P: Treatment with sulfatide or its precursor, galactosylceramide, prevent diabetes in NOD mice. *Autoimmunity* 34: 9-17, 2001.
8. *Induction of subclinically dermatitis*
194. Engkilde K, Buschard K, Hansen AK, Menné T, Johansen JD: Prevention of diabetes in NOD mice by repeated exposures to a contact allergen inducing a sub-clinical dermatitis. *Plos One* 5(5):e10591, 2010.
9. *Alcohol*
200. Buschard K, Hansen AK, Jensen K, Lindenbergh-Kortleve DJ, de Ruiter LF, Krohn TC, Hufeldt MR, Vogensen FK, Aasted B, Osterbye T, Roep BO, de Haar C, Nieuwenhuis EE: Alcohol facilitates CD1d loading, subsequent activation of NKT cells, and reduces the incidence of diabetes in NOD mice. *PLoS One* 6(4):e17931, 2011.
10. *Akkermansia muciniphila*
208. Hansen CHF, Krych L, Nielsen DS, Vogensen FK, Hansen LH, Sørensen SJ, Buschard K, Hansen AK: Early life treatment with vancomycin propagates *Akkermansia muciniphila* and reduces diabetes incidence in non-obese diabetic (NOD) mice. *Diabetologia* 55: 2285-2294, 2012.

11. *C24-sulfatide*

209. Subramanian L, Blumenfeld H, Tohn R, Ly D, Aguilera C, Maricic I, Mansson J-E, Buschard K, Kumar V, Delovitch TL: NKT cells stimulated by long fatty acyl chain sulfatides significantly reduce the incidence of Type 1 Diabetes in Nonobese Diabetic Mice. Plos One 2012;7(5):e37771.

12. *Intranasal gliadin*

217. Funda DP, Fundova P, Hansen AK, Buschard K: Prevention or early cure of type 1 diabetes by intranasal administration of gliadin in NOD mice. Plos One 2014; 9(4): e94530. doi:10.1371/journal.pone.0094530.

13. *Gluten-free diet only during pregnancy*

233. Antvorskov JC, Josefsen K, Haupt-Jorgensen M, Fundova P, Funda DP, Buschard K: Gluten-free diet only during pregnancy efficiently prevents diabetes in NOD mouse offspring. J Diabetes Research, J Diabetes Res ID 3047574, doi:10.1155/2016/3047574, 2016.

14. *L-serine supplementation*

241. Holm LJ, Haupt-Jørgensen M, Larsen J, Giacobini JD, Bilgin M, Buschard K: L-serine supplementation prevents diabetes in NOD mice. Plos One PLoS One. 2018 Apr 10:e3010. doi: 10.1002/dmrr.3010.

15. *Fenofibrate treatment*

244. Holm LJ, Krogvold L, Hasselby JP, Kaur S, Claessens LA, Russel MA, Mathews CE, Hanssen KF, Morgan NG, Koeleman BPC, Roep BO, Gerling IC, Pociot F, Dahl-Jørgensen K, Buschard K: Abnormal islet sphingolipid metabolism in type 1 diabetes. Diabetologia 61, 1650-1661, 2018. Referred in Nature Reviews Endocrinology| <https://doi.org/10.1038/s41574-018-0027-z>.

253. Buschard K, Holm LJ, Feldt-Rasmussen U: Insulin independence in newly diagnosed type 1 diabetes patient following fenofibrate treatment. Case Rep Med. 2020 May 14;2020:6865190. doi: 10.1155/2020/6865190.eCollection .PMID: 32508930

Other selected scientific publications

4. Buschard K, Rygaard J, Lund E: The inability of a diabetogenic virus to induce diabetes mellitus in athymic (nude) mice. Acta Path Microbiol Scand, Sect C, 84: 299-303, 1976.
21. Buschard K, Madsbad S, Rygaard J: Depressed suppressor cell activity in patients with newly diagnosed insulin-dependent diabetes mellitus. Clin Exp Immunol 41: 25-32, 1980.

31. Buschard K, Hastrup N, Rygaard J: Virus-induced diabetes mellitus in mice and the thymus-dependent immune system. *Diabetologia* 24: 42-46, 1983.
45. Buschard K, Buch I, Mølsted-Pedersen L, Hougaard P, Kühl C: Increased incidence of true type 1 diabetes during pregnancy. *Brit Med J* 294: 275-279, 1987
53. Buschard K, Kühl C, Mølsted-Pedersen L, Lund E, Palmer J, Bottazzo GF: Investigation in children who were in utero at onset of insulin-dependent diabetes in their mothers. *Lancet* I: 811-814, 1989.
63. Aaen K, Rygaard J, Josefsen K, Petersen H, Brogren C-H, Horn T, Buschard K: Dependence of antigen expression on functional state of beta-cells. *Diabetes* 39: 697-701, 1990
74. Bock T, Pedersen CR, Josefsen K, Bottazzo GF, Palmer JP, Buschard K: No risk of diabetes after insulin-shock treatment. *Lancet* 339: 1504-1506, 1992.
82. Buschard K, Josefsen K, Horn T, Fredman P: Sulphatide and sulphatide antibodies in insulin-dependent diabetes mellitus. *Lancet* 342: 840, 1993
111. Buschard K, Diamant M, Bovin LF, Fredman P, Bendtzen K: Sulphatide and its precursor, galactosylceramide, influence the production of cytokines in human mononuclear cells. *APMIS* 104: 938-944, 1996.
142. Osterbye T, Jørgensen KH, Fredman P, Tranum-Jensen J, Kaas A, Brange J, Whittingham J, Buschard K: Sulfatide promotes the folding of proinsulin, preserves insulin crystals, and mediates its monomerization. *Glycobiology* 11: 473-479, 2001.
147. Buschard K, Høy M, Bokvist K, Olsen HL, Madsbad S, Fredman P, Gromada J: Sulfatide controls insulin secretion by modulation of ATP-sensitive K⁺-channel activity and Ca²⁺-dependent exocytosis in rat pancreatic beta-cells. *Diabetes* 51: 2514-2521, 2002.
155. Bock T, Pakkenberg B, Buschard K: Increased islet volume but unchanged islet number ob/ob mice. *Diabetes* 52: 1716-1722, 2003.
166. Hartoft-Nielsen M-L, Rasmussen AK, Kaas A, Feldt-Rasmussen U, Buschard K: Neonatal stimulation of the thyroid gland with iodine or suppression during adolescence with triiodothyronine changes the prevalence of autoimmune thyroiditis in BB rats. *Eur J Endocrinol* 151: 375-382, 2004.
169. Bock T, Pakkenberg B, Buschard K: The genetic background determines size and structure of the endocrine pancreas. *Diabetes* 54: 133-137, 2005.
171. Buschard K, Lindblad U, Bøg-Hansen E, Blomqvist M, Bengtsson K, Hedner J, Råstam L, Fredman P: Low serum concentration of sulfatide and presence of sulf-lac-cer are associated with type 2 diabetes. *Diabetic Med* 22: 1190-1198, 2005.

178. Buschard K, Blomqvist M, Månsson J-E, Fredman P, Juhl J, Gromada J: C16:0 Sulfatide inhibits insulin secretion in rat beta-cells by reducing KATP-channel sensitivity to ATP Inhibition. *Diabetes* 55: 2826-2834, 2006.
181. Bruun JM, Roeske-Nielsen A, Richelsen B, Fredman P, Buschard K: Sulfatide Increases adiponectin and decreases TNF-alpha, IL-6, and IL-8 in human adipose tissue In vitro. *Mol Cell Endocrinol*, 263: 142-148, 2007.
210. Sildorf SM, Fredheim S, Svensson J, Buschard K: Remission without insulin therapy on gluten-free diet in a six-year old boy with type 1 diabetes. *BMJ Case Rep.* 2012 pii: bcr0220125878. doi: 10.1136/bcr.02.2012.5878.
212. Antvorskov JC, Fundova P, Buschard K, Funda DP: Dietary gluten alters the balance of proinflammatory and anti-inflammatory cytokines in T cells of BALB/c mice. *Immunology* 138: 23-33, 2013.
214. Dall M, Calloe K, Haupt-Jorgensen M, Larsen J, Schmitt N, Josefsen K, Buschard K: Gliadin fragments and a specific gliadin 33-mer peptide close KATP channels and induce insulin secretion in INS-1E cells and rat islets of Langerhans. *Plos One* 2013; 8(6):e66474.
218. Hansen CHF, Krych L, Buschard K, Metzдорff SB, Nellesmann C, Hansen LH, Nielsen DS, Frøkiær H, Skov S, Hansen AK: A maternal gluten-free diet reduces inflammation and diabetes incidence in the offspring of NOD mice. *Diabetes* 63: 2821-2832, 2014.
230. Buschard K, Bracey AW, McElroy DL, Magisb AT, Osterbye T, Atkinson MA, Bailey KM, Posgai AL, Ostrov DA: Sulfatide preserves insulin crystals not by being integrated in the lattice but by stabilizing their surface. *J Diabetes Res* 6179635, 2016.
232. Svensson J, Sildorf SM, Pipper CB, Kyvsgaard JN, Bøjstrup J, Mortensen HB, Buschard K: Potential beneficial Effects of a Gluten-free Diet in Newly Diagnosed Children with Type 1 Diabetes. *SpringerPlus* 10.1186/s40064-016-2641-3. 5: 994, 2016.
234. Bruun SW, Josefsen K, Tanassi JT, Marek A, PedersenMH, Sidenius U, Haupt-Jorgensen M, Antvorskov JC, Heegaard NH, Buschard K: Gliadin fragments in mouse blood and pancreas after oral administration. *J Diabetes Res* 2016, Article ID 2424306.
237. Haupt-Jorgensen M, Nielsen E, Engkilde K, Lerche M, Larsen J, Buschard K: Occupation with grain crops is associated with lower type 1 diabetes incidence: Registry-based case-control study. *PLoS One.* 2017 Jul 11;12(7):e0181143.
244. Holm LJ, Krogvold L, Hasselby JP, Kaur S, Claessens LA, Russel MA, Mathews CE, Hanssen KF, Morgan NG, Koeleman BPC, Roep BO, Gerling IC, Pociot F, Dahl-Jørgensen K, Buschard K: Abnormal islet sphingolipid metabolism in type 1 diabetes. *Diabetologia* 61, 1650-1661, 2018. Referred in *Nature Reviews Endocrinology* | <https://doi.org/10.1038/s41574-018-0027-z>.
245. Antvorskov JC, Halldorsson TI, Josefsen K, Svensson J, Granström C, Roep BO, Olesen TH, Hrolfsdottir L, Buschard K, Olsen S: Association between maternal gluten intake and

type 1 diabetes in offspring: national prospective cohort study in Denmark. *British Medical Journal* 2018 Sep 19;362:k3547. doi: 10.1136/bmj.k3547. PMID: 30232082.

251. Holm LJ, Haupt-Jorgensen M, Giacobini JD, Hasselby JP, Bilgin M, Buschard K: Fenofibrate increases very long-chain sphingolipids and prevents loss of islet sympathetic nerves in NOD mice. *Diabetologia*. 12: 2262-2272, 2019.
259. Pedersen K, Haupt-Jorgensen M, Krogvold L, Kaur S, Gerling IC, Pociot F, Dahl-Jørgensen K, Buschard K: Genetic predisposition in the 2'-5'A pathway in the development of type 1 diabetes: potential contribution to dysregulation of innate antiviral immunity. *Diabetologia*. doi: 10.1007/s00125-021-05469-5. PMID: 33973017, 2021
265. Tekin H, Josefsen K, Krogvold L, Dahl-Jørgensen K, Gerling I, Pociot F, Buschard K: PDE12 in type 1 diabetes. *Scientific Reports* (2022) 12:18149-18153.
266. Josefsen K, Krogvold L, Gerling I, Pociot F, Dahl-Jørgensen K, Buschard K: Development of Type 1 Diabetes may occur through a Type 2 Diabetes mechanism, *Front. Endocrinol*. 13:1032822.doi: 10.3389/fendo.2022.1032822.

All scientific publications

1. Buschard K, Kjældgaard A: Investigation and analysis of the position, fixation, length and embryology of the vermiform appendix. *Acta Chir Scand* 139: 293-298, 1973.
2. Buschard K: Cultivation of Islets of Langerhans in Millipore Chamber in Vivo. *Horm Metabol Res* 7: 441-442, 1975.
3. Buschard K, Rygaard J: Restitution of streptozotocin induced diabetes mellitus in nude mice with pancreatic grafts from the rat. *Acta Path Microbiol Scand, Sect C*, 84: 221-226, 1976.
4. Buschard K, Rygaard J, Lund E: The inability of a diabetogenic virus to induce diabetes mellitus in athymic (nude) mice. *Acta Path Microbiol Scand, Sect C*, 84: 299-303, 1976.
5. Buschard K, Rygaard J, Lund E: The nude mouse in diabetes research. *Proceedings of the second International Workshop on nude mice*. Gustav Fischer Verlag, Stuttgart, New York, 103-112, 1977.
6. Ortvad Andersen O, Christy M, Arnung K, Buschard K, Christau B, Kromann H, Nerup J, Platz P, Ryder LP, Svejgaard A, Thomsen M: Virus and diabetes. *Proceedings of the IX Congress of the International Diabetes Federation, Excerpta Med Amsterdam, Oxford*, 294-298, 1977.
7. Buschard K, Rygaard J: Functional studies of pancreas heterografts in nude mice. *Lancet* I: 855, 1977.
8. Lundgren G, Andersson A, Borg H, Buschard K, Groth CG, Gunnarsson R, Hellerström C, Pettersson B, Östman G: Structural and functional integrity of isolated human islets of Langerhans maintained in tissue culture for 1-3 weeks. *Transpl Proc* 9: 237-240, 1977.
9. Platz P, Ryder LP, Thomsen M, Bech K, Buschard K, Nerup J, Ortvad Andersen O, Svejgaard A: HLA and organspecific autoimmune disease. *The Menarini Series on Immunopathology* I: 258-277, 1977.
10. Christau B, Kromann H, Ortvad Andersen O, Christy M, Buschard K, Arnung K, Højland Kristensen I, Peitersen B, Steinrud J, Nerup J: Incidence, seasonal and geographical patterns of juvenile-onset insulin-dependent diabetes mellitus in Denmark. *Diabetologia* 13: 281-284, 1977.

11. Andersson A, Buschard K: Reversal of streptozotocin-induced diabetes by freshly isolated or cultured pancreatic islets: A comparative study. Proceedings of the 23rd Congress of American Society for Artificial Internal Organs, Montreal, 1977.
12. MacLennan R, Buschard K et al.: Dietary fibre, transit-time, faecal bacteria, steroids, and colon cancer in two scandinavian populations. *Lancet* II: 207-211, 1977.
13. Buschard K, Rygaard J: Passive transfer of streptozotocin induced diabetes mellitus with spleen cells. *Acta Path Microbiol Scand, Sect C*, 85: 469-472, 1977.
14. Andersson A, Buschard K: Culture of isolated pancreatic islets: Its applications for transplantation purposes. *Trans Am Soc Intern Organs* 23: 342-345, 1977.
15. Buschard K, Rygaard J: Is the diabetogenic effect of streptozotocin in part thymus-dependent? *Acta Path Microbiol Scand, Sect C*, 86: 23-27, 1978.
16. Buschard K: Passive transfer of virus induced diabetes mellitus with spleen cells. *Acta Path Microbiol Scand, Sect C*, 86: 29-32, 1978.
17. Buschard K, Madsbad S, Rygaard J: Passive transfer of diabetes mellitus from man to mouse. *Lancet* I: 908-910, 1978.
18. Buschard K, Rygaard J: T-lymphocytes transfer streptozotocin induced diabetes mellitus in mice. *Acta Path Microbiol Scand, Sect C*, 86: 277-282, 1978.
19. Buschard K, Rygaard J, Madsbad S: Etiology of insulin-dependent diabetes. *New Engl J Med* 300: 924-925, 1979.
20. Buschard K, Madsbad S, Rygaard J: Passive transfer in diabetes mellitus. *Lancet* II: 303, 1979.
21. Buschard K, Madsbad S, Rygaard J: Depressed suppressor cell activity in patients with newly diagnosed insulin-dependent diabetes mellitus. *Clin Exp Immunol* 41: 25-32, 1980.
22. Buschard K, Madsbad S, Rygaard J: Transmission of diabetes from man to mouse. In: Irvine WJ (ed.): *Immunological aspects of diabetes mellitus*. Tevio Scientific Publications, 177-184, 1980.
23. Buschard K, Dabelsteen E, Bretlau P: A model for the study of autoimmune disease applied to pemphigus: Transplants of human oral mucosa to athymic nude mice bind pemphigus antibodies in vivo. *J Invest Derm* 76: 171-173, 1981.
24. Buschard K, Rygaard J: The nude mouse in diabetes research. In: Fogh & Giovanella (eds.): *The nude mouse in clinical and experimental research*. Vol II, Academic Press, New York, 291-300, 1982.
25. Buschard K, Madsbad S, Krarup T, Rygaard J: Glycaemic control and suppressor cell activity in patients with insulin-dependent diabetes mellitus. *Clin Exp Immunol* 48: 189-195, 1982.
26. Buschard K, Madsbad S, Rygaard J: Suppressor cell activity and beta-cell function in insulin-dependent diabetics. *Acta Path Microbiol Scand, Sect C*, 90: 53-57, 1982.
27. Buschard K, Madsbad S, Rygaard J: Suppressor cell activity in patients with newly diagnosed diabetes mellitus: A prospective study. *J Clin Lab Immunol* 8: 19-23, 1982.
28. Buschard K, Madsbad S, Dabelsteen E, Rygaard J: The nude mouse in autoimmune disease. In: Reed ND (ed.): *Proceedings of the third International Workshop on nude mice*. Gustav Fischer, New York, 255-262, 1982.
29. Dabelsteen E, Buschard K, Pindborg JJ (eds.): *Almen Odontologi*. Odontologisk Boghandels Forlag, København, 1-184, 1982.

30. Buschard K, Röpke C, Madsbad S, Mehlsen J, Sørensen T, Rygaard J: Alterations of peripheral T-lymphocyte subpopulations in patients with insulin-dependent (type 1) diabetes mellitus. *J Clin Lab Immunol* 10: 127-131, 1983.
31. Buschard K, Hastrup N, Rygaard J: Virus-induced diabetes mellitus in mice and the thymus-dependent immune system. *Diabetologia* 24: 42-46, 1983.
32. Buschard K, Madsbad S, Rygaard J: Plasma from insulin-dependent diabetics inhibits theophylline sensitive T-lymphocytes demonstrated in E-rosette assay. *J Clin Lab Immunol* 11: 123-128, 1983.
33. Buschard K, Röpke C, Madsbad S, Mehlsen J, Rygaard J: T-lymphocyte subsets in patients with newly diagnosed type 1 (insulin-dependent) diabetes: A prospective study. *Diabetologia* 25: 247-251, 1983.
34. Buschard K, Madsbad S: A longitudinal study of virus antibodies in patients with newly diagnosed type 1 (insulin-dependent) diabetes mellitus. *J Clin Lab Immunol* 13: 65-70, 1984.
35. Dabelsteen E, Buschard K, Hakomori S-I, Young WW: Pattern of distribution of blood group antigens on human epidermal cells during maturation. *J Invest Derm* 82: 13-17, 1984.
36. Buschard K: Det thymusafhængige immunapparat i patogenesen til type 1 (insulin-krævende) diabetes mellitus. Dyreksperimentelle og humane studier. Disputatoversigt. Lægeforeningens Forlag 1-40, 1984.
37. Buschard K: Det thymusafhængige immunapparat i patogenesen til type 1 (insulin-krævende) diabetes mellitus. Dyreksperimentelle og humane studier. Autoreferat af disputatoversigt. *Ugeskr Læger* 146: 3757, 1984.
38. Reibel J, Dabelsteen E, Kenrad B, Buschard K: Pattern of distribution of T-lymphocytes, Langerhans cells and HLA-DR bearing cells in normal human oral mucosa. *Scand J Dent Res* 93: 513-521, 1985.
39. Buschard K: The thymus-dependent immune system in the pathogenesis of type 1 (insulin-dependent) diabetes mellitus. Animal model and human studies. *Dan Med Bull* 32: 139-151, 1985.
40. Gotfredsen C, Buschard K, Frandsen E: Reduction of diabetes incidence of BB Wistar rats by early prophylactic insulin treatment of diabetes-prone animals. *Diabetologia* 28: 933-935, 1985.
41. Clausen H, Moe D, Buschard K, Dabelsteen E: Keratin proteins in human oral mucosa. *J Oral Path* 15: 36-42, 1986.
42. Madsbad S, Buschard K, Siemssen O, Röpke C: Changes in lymphocyte subsets during elective abdominal surgery. *Acta Chir* 152: 81-84, 1986.
43. Hau J, Buschard K: Effect of the diabetogenic EMC-virus on murine fetal and placental growth monitored by quantification of maternal plasma levels of pregnancy-associated murine protein-2 and alfa-feto-protein. *Acta Path Microbiol Scand, Sect B*, 94: 339-342, 1986.
44. Svejgaard A, Jakobsen BK, Platz P, Ryder LP, Nerup J, Christy M, Borch-Johnsen K, Parving H-H, Deckert T, Mølsted-Pedersen L, Kühl C, Buschard K, Green A: HLA-associations in insulin-dependent diabetes: search for heterogeneity in different groups of patients from a homogeneous population. *Tissue Antigens* 28: 237-244, 1986.
45. Buschard K, Buch I, Mølsted-Pedersen L, Hougaard P, Kühl C: Increased incidence of true type 1 diabetes during pregnancy. *Brit Med J* 294: 275-279, 1987.
46. Brogren C-H, Buschard K, Röpke C, Rygaard J: Genetics of the autoimmune BB-rat in the study of diabetes mellitus heredity. In: Rygaard J, Brünner N, Græm N, Spang-Thomsen M (eds.): *Immune-deficient animals in biomedical research*. Karger S, Basel, 117-121, 1987.

47. Buschard K, Rygaard J, Lund E, Röpke C: Prodromal immune manifestations in EMC-M virus-induced diabetes: Islet bound and circulating antibodies, and changes in lymphocyte subsets. *Diabetes Research* 5: 67-72, 1987.
48. Mølsted-Pedersen L, Kühl C, Møller-Jensen B, Buschard K: Diabetes diagnosticeret i svangerskabet. *Per Aspera ad Astra*, Odense Universitet, 308-316, 1987.
49. Møller-Jensen B, Buschard K, Buch I, Mølsted-Pedersen L, Kühl C, Jakobsen BK, Svejgaard A: HLA-associations in insulin-dependent diabetes mellitus diagnosed during pregnancy. *Acta Endocrinol* 116: 387-389, 1987.
50. Buschard K, Brogren C-H, Röpke C, Rygaard J: Antigen expression of the pancreatic beta-cells is dependent on their functional state, as shown by a specific, BB rat monoclonal autoantibody IC2. *APMIS* 96: 342-346, 1988.
51. Bendtzen K, Krogh Rasmussen Å, Bech K, Feldt-Rasmussen U, Buschard K: Pathogenic role of interleukin 1 and tumor necrosis factor in autoimmune endocrine diseases. *Clin Immunol Newsletter* 9: 72-74, 1988.
52. Buschard K, Birch K, Madsbad S, Röpke C: Metabolic state does not influence lymphocyte subsets in type 1 diabetics. *Diabetes Research* 9: 15-18, 1988.
53. Buschard K, Kühl C, Mølsted-Pedersen L, Lund E, Palmer J, Bottazzo GF: Investigation in children who were in utero at onset of insulin-dependent diabetes in their mothers. *Lancet* I: 811-814, 1989.
54. Mølsted-Pedersen L, Damm P, Buschard K: Diabetes diagnosed during pregnancy: Follow up studies. In: Sutherland HW, Stowers JM, Pearson DWM (eds.): *Carbohydrate Metabolism in Pregnancy and the Newborn*, Springer-Verlag, 277-286, 1989.
55. Bendtzen K, Buschard K, Diamant M, Horn T, Svenson M, The Thyroid Cell Group: Possible role of IL-1, TNF α and IL-6 in insulin-dependent diabetes mellitus and autoimmune thyroid disease. *Lymphokine Research* 8: 335-340, 1989.
56. Buschard K, Aaen K, Jørgensen M, Kjær T, Josefsen K: Animal models in the study of the pathogenesis of Type 1 (insulin-dependent) diabetes. *Scand J Lab Animal Science* 16, suppl. 1: 11-15, 1989.
57. Josefsen K, Hansen WA, Petersen H, Bock T, Buschard K: In situ Hybridization. *Scand J Lab Animal Science* 16, suppl. 1: 23-26, 1989.
58. Buschard K, Dejgaard A, Madsbad S, Röpke C: Different percentage of CD8+ lymphocytes in long-term type 1 diabetics with and without residual beta cell function. *Diabetes Research* 12: 105-108, 1989.
59. Buschard K, Jørgensen M, Aaen K, Bock T, Josefsen K: Prevention of diabetes mellitus in BB rats by neonatal stimulation of beta cells. *Lancet* 335: 134-135, 1990.
60. Buschard K, Hougaard P, Mølsted-Pedersen L, Kühl C: Type 1 (insulin-dependent) diabetes mellitus diagnosed during pregnancy: a clinical and prognostic study. *Diabetologia* 33: 31-35, 1990.
61. Buschard K, Damsbo P, Röpke C: Activated CD4+ and CD8+ T-lymphocytes in newly diagnosed type 1 diabetics: a prospective study. *Diabetic Medicine* 7: 132-136, 1990.
62. Buschard K, Aaen K, Horn T, van Damme J, Bendtzen K: Interleukin 6 is a functional and structural modulator of beta-cells from islets of Langerhans. *Autoimmunity* 5: 185-194, 1990.
63. Aaen K, Rygaard J, Josefsen K, Petersen H, Brogren C-H, Horn T, Buschard K: Dependence of antigen expression on functional state of beta-cells. *Diabetes* 39: 697-701, 1990.
64. Buschard K, Kühl C, Mølsted-Pedersen L, Röpke C: T-lymphocyte subpopulations in pregnant women with newly diagnosed Type 1 diabetes. *Diabetes Research* 14: 187-190, 1990.

65. Kjaer TW, Kornerup Hansen A, Josefsen K, Pedersen C, Buschard K: Changed sex ratio in BB rat offspring. *Scand J Lab Animal Science* 18: 23-27, 1991.
66. Buschard K: The functional state of the beta cells in the pathogenesis of insulin-dependent diabetes mellitus. *Autoimmunity* 10: 65-70, 1991.
67. Bock T, Kjaer TW, Jørgensen M, Josefsen K, Rygaard J, Buschard K: Reduction of diabetes incidence in NOD mice by neonatal glucose treatment. *APMIS* 99: 989-992, 1991.
68. Andersen LLI, Buschard K, Hau J: Effect of exogenous insulin treatment on fetal growth and maternal alpha-fetoprotein levels in pregnant mice. *Biomedica Biochimica Acta* 50: 901-906, 1991.
69. Buschard K, Josefsen K, Rygaard J, Spitalnik SL: Pancreatic islet cell epitope recognized by an anti-sulphatide monoclonal antibody. *APMIS* 99: 1151-1156, 1991.
70. Buschard K: Stimulation of beta cell function to prevent diabetes. *Diabetes, Prevention & Therapy* 5: 26, 1991.
71. Buschard K: Prophylactic insulin treatment. *Diabetes, Prevention & Therapy* 5: 28-29, 1991.
72. Hoorfar J, Buschard K, Brogren C-H: Impact of dietary protein and fat source on the development of insulin-dependent diabetes in the BB rat. *Diabetes Research* 20: 33-41, 1992.
73. Bendtzen K, Diamant M, Horn T, Pedersen C, Buschard K: Effect of fusidic acid on interleukin-1 (IL-1)- and IL-6-induced pancreatic β -cell functions in rats. *J Endocrinology* 132: 345-352, 1992.
74. Bock T, Pedersen CR, Josefsen K, Bottazzo GF, Palmer JP, Buschard K: No risk of diabetes after insulin-shock treatment. *Lancet* 339: 1504-1506, 1992.
75. Kjaer TW, Rygaard J, Bendtzen K, Josefsen K, Bock T, Buschard K: Interleukins increase surface ganglioside expression of pancreatic islet cells in vitro. *APMIS* 100: 509-514, 1992.
76. Pedersen CR, Josefsen K, Bock T, Hansen SV, Buschard K: Beta-cell expression of 65-kDa heat-shock protein mRNA is function- and age-dependent. *APMIS* 100: 765-771, 1992.
77. Buschard K, Pedersen C, Hansen SV, Hageman I, Aaen K, Bendtzen K: Anti-diabetogenic effect of fusidic acid in diabetes prone BB rats. *Autoimmunity* 14: 101-104, 1992.
78. Josefsen K, Wøllike M, Buschard K: An alternative approach to ^{32}P radiation protection: source shielding. *Nucleic Acids Research* 21: 485-487, 1993.
79. Petersen JS, Russel S, Marshall MO, Kofod H, Buschard K, Cambon N, Karlsten AE, Boel E, Hagopian WA, Hejnæs KR, Moody A, Dyrberg T, Lemmark Å, Madsen OD, Michelsen BK: Differential expression of glutamic acid decarboxylase in rat and human islets. *Diabetes* 42: 484-495, 1993.
80. Hoorfar J, Buschard K, Dagnaes-Hansen F: Prophylactic nutritional modification of the incidence of diabetes in autoimmune non-obese diabetic (NOD) mice. *Brit J Nutrition* 69: 597-607, 1993.
81. Hansen AK, Josefsen K, Pedersen C, Buschard K: Neonatal stimulation of beta-cells reduces the incidence and delays the onset of diabetes in a barrier-protected breeding colony of BB rats. *Exp Clin Endocrinol* 101: 189-193, 1993.
82. Buschard K, Josefsen K, Horn T, Fredman P: Sulphatide and sulphatide antibodies in insulin-dependent diabetes mellitus. *Lancet* 342: 840, 1993.
83. Josefsen K, Wøllike M, Buschard K: Rapid quantitation of cDNA clones on agar plates. *Focus* 15: 120, 1993.
84. Buschard K, Bock T, Pedersen C, Hageman I, Josefsen K: Prophylactic insulin: Is it safe. *Drug Safety* 9: 321-324, 1993.

85. Buschard K: Oral insulin therapy: try with care. *Diabetes, Prevention & Therapy* 7: 3-4, 1993.
86. Buschard K, Josefsen K, Horn T, Larsen S, Fredman P: Sulphatide antigen in islets of Langerhans and in diabetic glomeruli, and anti-sulphatide antibodies in Type 1 diabetes mellitus. *APMIS* 101: 963-970, 1993.
87. Hageman I, Buschard K: Diabetic animal models. In: Svendsen P, Hau J (eds.): *Handbook of laboratory animal science*. CRC Press, 103-123, 1994.
88. Damm P, Kühl C, Buschard K, Jakobsen BK, Svejgaard A, Sodoyez-Goffaux F, Shattock M, Bottazzo GF, Mølsted-Pedersen L: Prevalence and predictive value of islet cell antibodies and insulin autoantibodies in women with gestational diabetes. *Diabetic Medicine* 11: 558-563, 1994.
89. Pedersen CR, Bock T, Hansen SV, Hansen MW, Buschard K: High juvenile body weight and low insulin levels as markers preceding early diabetes in the BB rat. *Autoimmunity* 17: 261-269, 1994.
90. Sandler S, Buschard K, Bendtzen K: Effects of 1,25-dihydroxyvitamin D₃ and the analogues MC903 and KH1060 on interleukin-1 β -induced inhibition of rat pancreatic islet β -cell function in vitro. *Immunology Letters* 41: 73-77, 1994.
91. Buschard K, Josefsen K, Hansen SV, Horn T, Marshall MO, Persson H, Månsson J-E, Fredman P: Sulphatide in islets of Langerhans and in organs affected in diabetic late complications: a study in human and animal tissue. *Diabetologia* 37: 1000-1006, 1994.
92. Bock T, Pedersen C, Vølund A, Pallesen C, Buschard K: Perinatal determinants among children who later develop insulin-dependent diabetes mellitus. *Diabetes Care* 17: 1154-1157, 1994.
93. Horn T, Bendtzen K, Hageman I, Buschard K: Morphological effects of sodium fusidate (fusidin) on pancreatic islet cells: An electron microscopic study. *Pharmacology & Toxicology* 75: 228-230, 1994.
94. Josefsen K, Nielsen H, Lorentzen S, Damsbo P, Buschard K: Circulating monocytes are activated in newly diagnosed type 1 diabetes mellitus patients. *Clin Exp Immunol* 98: 489-493, 1994.
95. Dagnæs-Hansen F, Schjødtz Hansen P, Buschard K: The effect of prophylactic FCA treatment on diabetes incidence in a NOD mouse colony. In: Bunyan J (ed.): *Proceedings of the Fifth Symposium of the Federation of European Laboratory Animal Science Associations*. Royal Society of Medicine Press, London, 417-418, 1994.
96. Josefsen K, Nielsen H, Hansen WA, Kristensen JK, Bilde T, Bendtzen K, Buschard K: Tissue culture supernatants from human islets of Langerhans activate the oxidative burst response of human monocytes in vitro. *Life Sciences* 56: 1333-1342, 1995.
97. Funda D, Stenvang JP, Buschard K: Age-related changes in T $\gamma\delta$ cells of NOD mice. *Immunology Letters* 45: 179-184, 1995.
98. Buschard K, Hageman I, Kornerup Hansen A, Fredman P: Neonatal treatment of BB rats with sulphatide delays development of diabetes but does not change incidence. *APMIS* 103: 193-196, 1995.
99. Eklund A, Schou M, Buschard K: Cytotoxicity towards neonatal versus adult BB rat pancreatic islet cells. *Autoimmunity* 20: 93-95, 1995.
100. Petersen JS, Buschard K, Kühl C, Mølsted-Pedersen L, Dyrberg T: Significance of GAD65 autoantibodies in IDDM. *Proceedings of the 15th International Diabetes Federation Congress*. Diabetes 1994, Elsevier, Amsterdam, 1051-1056, 1995.
101. Buschard K: Superantigens still lacking evidence for an involvement in IDDM. *Diabetes, Prevention & Therapy* 9: 38, 1995.

102. Vardi P, Buschard K: Impact of early pancreatic islet stimulation on the natural history of insulin-dependent diabetes. In: Lessons from animal diabetes V (Shafrir E, ed.) pp. 35-40, 1995.
103. Strandell E, Buschard K, Saldeen J, Welsh N: Interleukin-1 β induces the expression of HSP70, heme oxygenase and Mn-SOD in FACS-purified rat islet β -cells, but not in α -cells. *Immunology Letters* 48: 145-148, 1995.
104. Josefsen K, Stenvang JP, Kindmark H, Berggren P-O, Horn T, Kjær T, Buschard K: Fluorescence-activated cell sorted rat islet cells and studies of the insulin secretory process. *J Endocrinology* 149: 145-154, 1996.
105. Buschard K, Horn T, Aaen K, Josefsen K, Persson H, Fredman P: Presence of sulphatide (3'-sulphogalactosylceramide) in pericytes in the choroid layer of the eye: sharing of this glycolipid autoantigen with islets of Langerhans. *Diabetologia* 39: 658-666, 1996.
106. Bonnevie-Nielsen V, Buschard K, Dyrberg T: Differential responsiveness to Interferon- α in β -cells and non- β -cells. *Diabetes* 45: 818-821, 1996.
107. Saldeen J, Curiel DT, Eizirik DL, Andersson A, Strandell E, Buschard K, Welsh N: Efficient gene transfer to dispersed human pancreatic islet cells in vitro using adenovirus-polylysine/DNA complexes or polycationic liposomes. *Diabetes* 45: 1197-1203, 1996.
108. Buschard K, Fredman P: Sulphatide as an antigen in diabetes mellitus. *Diabetes, Nutrition & Metabolism* 4: 221-228, 1996.
109. Petersen JS, Dyrberg T, Damm P, Kühl C, Mølsted-Pedersen L, Buschard K: GAD65 autoantibodies in women with gestational or insulin dependent diabetes mellitus diagnosed during pregnancy. *Diabetologia* 39: 1329-1333, 1996.
110. Buschard K: Diabetic animal models. *APMIS* 104: 609-614, 1996.
111. Buschard K, Diamant M, Bovin LF, Fredman P, Bendtzen K: Sulphatide and its precursor, galactosylceramide, influence the production of cytokines in human mononuclear cells. *APMIS* 104: 938-944, 1996.
112. Ekblond A, Schou M, Buschard K: Mononuclear cytotoxicity and proliferation towards glucose stimulated rodent pancreatic islet cells. *Autoimmunity* 25: 97-108, 1997.
113. Ding W-G, Renström E, Rorsman P, Buschard K, Gromada J: Glucagon-like peptide I and glucose-dependent insulinotropic polypeptide stimulate Ca $^{2+}$ -induced secretion in rat alpha-cells by a protein kinase A-mediated mechanism. *Diabetes* 46: 792-800, 1997.
114. Bache I, Jørgensen KH, Buschard K: Failure of high-dose insulin treatment to increase beta-cell insulin content in diabetic non obese diabetic (NOD) mice. *Diabetes Research and Clinical Practice* 37: 9-14, 1997.
115. Gromada J, Bokvist K, Ding W-G, Barg S, Buschard K, Renström E, Rorsman P: Adrenaline stimulates glucagon secretion in pancreatic A-cells by increasing the Ca $^{2+}$ -current and the number of granules close to the L-type Ca $^{2+}$ -channels. *J Gen Physiol* 110: 217-228, 1997.
116. Weber UJ, Bock T, Buschard K, Pakkenberg B: Total number and size distribution of motor neurons in the spinal cord of normal and EMC-virus infected mice - a stereological study. *J Anat* 191: 347-353, 1997.
117. Buschard K: A pragmatic answer to the use of animal models for type 1 diabetes. *Diabetes Metab Rev* 14: 192-193, 1998.
118. Josefsen K, Buschard K, Sørensen LR, Wøllike M, Ekman R, Birkenbach M: Glucose stimulation of pancreatic beta-cell lines induces expression and secretion of dynorphin. *Endocrinology* 139: 4329-4336, 1998.
119. Funda DP, Hartoft-Nielsen M-L, Kaas A, Buschard K: Effect of intrathymic administration of mycobacterial heat shock protein 65 and peptide p277 on the development of diabetes in NOD mice: caution required in vaccination studies. *APMIS* 106: 1009-1016, 1998.

120. Koefoed P, Hasholt L, Fenger K, Nielsen JE, Eiberg H, Buschard K, Sørensen SA: Mitotic and meiotic instability of the CAG trinucleotide repeat in spinocerebellar ataxia type 1. *Hum Genet* 103: 564-569, 1998.
121. Josefsen K, Sørensen LR, Buschard K, Birkenbach M: Glucose induces early growth response gene (Egr-1) expression in pancreatic beta cells. *Diabetologia* 42: 195-203, 1999.
122. Rasmussen ÅK, Feldt-Rasmussen U, Brandt M, Hartoft-Nielsen M-L, Carayon P, Buschard K: Thyrotropin stimulates specifically the expression of the autoantibody binding domains of the thyroperoxidase molecule. *Autoimmunity* 29: 323-331, 1999.
123. Strandell E, Kaas A, Hartoft-Nielsen M-L, Bock T, Buschard K, Bendtzen K: Cytokine production in NOD mice on prophylactic insulin therapy. *APMIS* 107: 413-419, 1999.
124. Bache I, Bock T, Vølund A, Buschard K: Previous maternal abortion, long gestation and young maternal age decrease the risk of Type 1 diabetes among male offsprings. *Diabetes Care* 22: 1063-1065, 1999.
125. Bovin LF, Fredman P, Månsson J-E, Buschard K, Bendtzen K: In vitro production of cytokines is influenced by sulfatide and its precursor galactosylceramide. *FEBS Letters* 455: 339-343, 1999.
126. Bock T, Svenstrup K, Pakkenberg B, Buschard K: Unbiased estimation of total beta-cell number and mean beta-cell volume in rodent pancreas. *APMIS* 107: 791-799, 1999.
127. Buschard K, Schloot NC, Kaas A, Bock T, Horn T, Fredman P, Roep BO: Immunomodulation of insulin-specific autoreactive T-cells by sulfatide which is variably expressed in beta cells. *Diabetologia* 42: 1212-1218, 1999.
128. Bokvist K, Olsen HL, Høy M, Gotfredsen CF, Holmes WF, Buschard K, Rorsman P, Gromada J: Characterisation of sulfonylurea and ATP-regulated K⁺-channels in rat pancreatic A-cells. *Pflügers Archiv* 438: 428-436, 1999.
129. Brock B, Gregersen S, Kristensen K, Thomsen JL, Buschard K, Kofod H, Hermansen K: The insulinotropic effect of endothelin-1 is mediated by glucagon release from the islet alpha cells. *Diabetologia* 42: 1302-1307, 1999.
130. Pedersen CR, Hageman I, Bock T, Buschard K: Intermittent feeding and fasting reduces diabetes incidence in BB rats. *Autoimmunity* 30: 243-250, 1999.
131. Funda DP, Kaas A, Bock T, Tlaskalová-Hogenová H, Buschard K: Gluten-free diet prevents diabetes in NOD mice. *Diabetes/Metabolism Research and Reviews* 15: 323-327, 1999.
132. Bokvist K, Høy M, Buschard K, Holst JJ, Thomsen MK, Gromada J: Selectivity of prandial glucose regulators: nateglinide, but not repaglinide, accelerates exocytosis in rat pancreatic A-cells. *Eur J Pharmacol* 386: 105-111, 1999.
133. Fredman P, Månsson J-E, Rynmark B-M, Josefsen K, Ekblond A, Halldner L, Osterbye T, Horn T, Buschard K: The glycosphingolipid sulfatide in the islets of Langerhans in rat pancreas is processed through recycling: possible involvement in insulin trafficking. *Glycobiology* 10: 39-50, 2000.
134. Buschard K, Bock T, Pedersen CR, Hansen SV, Aaen K, Jørgensen M, Hansen MW, Kjaer TW, Hageman I, Josefsen K: Neonatal treatment with beta-cell stimulatory agents reduces the incidence of diabetes in BB rats. *International Journal of Experimental Diabetes Research* 1: 1-8, 2000.
135. Kyvik KO, Bache I, Green A, Beck-Nielsen H, Buschard K: No association between birth weight and Type 1 diabetes mellitus - a twin-control study. *Diabetic Medicine* 17: 158-162, 2000.

136. Høy M, Olsen HL, Bokvist K, Buschard K, Barg S, Rorsman P, Gromada J: Tolbutamide stimulates exocytosis of glucagon by inhibition of a mitochondrial-like ATP-sensitive K⁺ (KATP) conductance in rat pancreatic A-cells. *J Physiol* 527: 109-120, 2000.
137. Jørgensen KH, Hansen AK, Buschard K: Five fold increase of insulin concentration substantially delays the absorption of subcutaneously injected human insulin suspension preparations as tested in pigs. *Diabetes Res Clin Pract* 50: 161-167, 2000.
138. Rieneck K, Bovin LF, Josefsen K, Buschard K, Svenson M, Bendtzen K: Massive parallel gene expression profiling of RINm5F pancreatic islet beta-cells stimulated with interleukin-1 β . *APMIS* 108: 855-872, 2000.
139. Høy M, Bokvist K, Xia-Gang W, Hansen J, Juhl K, Berggren P-O, Buschard K, Gromada J: Phentolamine inhibits exocytosis of glucagon by Gi2 protein-dependent activation of calcineurin in rat pancreatic alpha-cells. *J Biol Chem* 276: 924-930, 2001.
140. Hartoft-Nielsen M-L, Rasmussen ÅK, Kaas A, Bock T, Buschard K, Feldt-Rasmussen U: Linomide does not prevent spontaneous autoimmune thyroiditis in NOD mice. *Autoimmunity* 33: 79-84, 2001.
141. Gromada J, Høy M, Olsen HL, Gotfredsen CF, Buschard K, Rorsman P, Bokvist K: Gi2 proteins couple somatostatin receptors to low-conductance K⁺ channels in rat pancreatic alpha cells. *Pflügers Archiv* 442: 19-26, 2001.
142. Osterbye T, Jørgensen KH, Fredman P, Trandum-Jensen J, Kaas A, Brange J, Whittingham J, Buschard K: Sulfatide promotes the folding of proinsulin, preserves insulin crystals, and mediates its monomerization. *Glycobiology* 11: 473-479, 2001.
143. Skau M, Pakkenberg B, Buschard K, Bock T: Linear correlation between the total islet mass and the volume-weighted mean islet volume. *Diabetes* 50: 1763-1770, 2001.
144. Buschard K, Fredman P, Hanspers K, Reich E-P: Treatment with sulfatide or its precursor, galactosylceramide, prevent diabetes in NOD mice. *Autoimmunity* 34: 9-17, 2001.
145. Gromada J, Høy M, Buschard K, Salehi A, Rorsman P: Somatostatin inhibits exocytosis in rat pancreatic alpha-cells by Gi2-dependent activation of calcineurin and depriving of secretory granules. *J Physiol* 535: 519-532, 2001.
146. Svenstrup K, Skau M, Pakkenberg B, Buschard K, Bock T: Postnatal development of beta-cells in rats. Proposed explanatory model. *APMIS* 110: 372-378, 2002
147. Buschard K, Høy M, Bokvist K, Olsen HL, Madsbad S, Fredman P, Gromada J: Sulfatide controls insulin secretion by modulation of ATP-sensitive K⁺-channel activity and Ca²⁺-dependent exocytosis in rat pancreatic beta-cells. *Diabetes* 51: 2514-2521, 2002.
148. Buschard K, Funda DP: Vaccination studies in type 1 diabetes. *Lancet* 360: 488, 2002.
149. Hageman I, Buschard K: Anti-diabetogenic effect of fusidic acid in diabetes prone BB rats. A sex dependent organ accumulation of the drug is seen. *Pharmacology & Toxicology* 91: 123-128, 2002.
150. Andersson K, Buschard K, Fredman P, Kaas A, Lidström A-M, Madsbad S, Mortensen M, Månsson J-E: Patients with insulin dependent diabetes but not those with non-insulin dependent diabetes have anti-sulfatide antibodies as determined with a new ELISA assay. *Autoimmunity* 35: 463-468, 2002.
151. Krogsgaard Thomsen M, Bokvist K, Høy M, Buschard K, Holst JJ, Lindström P, Gromada J: Repaglinide at a cellular level. *Diab Nutr Metab* 15 (6 suppl): 15-18, 2002.
152. Buschard K, Thon R: Diabetic animal models. In: Hau J, van Hoosier Jr GL (eds.): *Handbook of laboratory animal science*. Second edition. CRC Press, 153-182, 2003.

153. Høy M, Olsen HL, Andersen HS, Bokvist K, Buschard K, Hansen J, Jacobsen P, Petersen JS, Rorsman P, Gromada J: Imidazoline NNC77-0074 stimulates insulin secretion and inhibits glucagon release by control of Ca²⁺-dependent exocytosis in pancreatic alpha- and beta-cells. *European Journal of Pharmacology* 466: 213-221, 2003.
154. Blomqvist M, Kaas A, Månsson J-E, Formby B, Rynmark B-M, Buschard K, Fredman P: Developmental expression of the type 1 diabetes related antigen sulfatide and sulfated lactosylceramide in mammalian pancreas. *J Cell Biochem* 89: 301-310, 2003.
155. Bock T, Pakkenberg B, Buschard K: Increased islet volume but unchanged islet number ob/ob mice. *Diabetes* 52: 1716-1722, 2003.
156. Blomqvist M, Osterbye T, Månsson J-E, Horn T, Buschard K, Fredman P: Selective lack of the C16:0 fatty acid isoform of sulfatide in pancreas of type II diabetic animal models. *APMIS* 111: 867-877, 2003.
157. Bock T, Kyhnel A, Pakkenberg B, Buschard K: The postnatal growth of the beta-cell mass in pigs. *J Endocrinol* 179: 245-252, 2003.
158. Hansen AB, Kirkeby S, Aasted B, Dahl K, Hansen AK, Dieperink H, Svendsen M, Kemp E, Buschard K, D'Apice AJ: The resistance of delayed xenograft rejection to alpha (1,3)-galactosyltransferase gene inactivation and CD4 depletion in a mouse-to-rat model. *APMIS* 111: 1019-1026, 2003.
159. Bock T, Pakkenberg B, Buschard K: The endocrine pancreas in non-diabetic rats after short-term and long-term treatment with the long-acting GLP-1 derivate NN2211. *APMIS* 111: 1117-1124, 2003.
160. Di Marco R, Mangano K, Quattrocchi C, Musumeci R, Speciale AM, Papaccio G, Buschard K, Bendtzen K, Nicoletti F: Curative effects of sodium fusidate on the development of dinitrobenzenesulfonic acid-induced colitis in rats. *Clin Immunol* 109: 266-271, 2003.
161. Blomqvist M, Osterbye T, Månsson J-E, Horn T, Buschard K, Fredman P: Sulfatide is associated with insulin granules and located to microdomains of a cultured beta cell line. *Glycoconjugate Journal* 19: 403-413, 2003.
162. Roeske-Nielsen A, Fredman P, Månsson J-E, Bendtzen K, Buschard K: Beta-galactosylceramide increases and sulfatide decreases cytokine and chemokine production in whole blood cells. *Immunol Lett* 91: 205-211, 2004.
163. Wendt A, Birnir B, Buschard K, Gromada J, Salehi A, Sewing S, Rorsman P, Braun M: Glucose inhibition of glucagon secretion from rat alpha-cells is mediated by GABA released from neighboring beta-cells. *Diabetes* 53: 1038-1045, 2004.
164. Braun M, Wendt A, Buschard K, Salehi A, Sewing S, Gromada J, Rorsman P: GABAB receptor activation inhibits exocytosis in rat pancreatic beta-cells by G-protein-dependent activation of calcineurin. *J Physiol* 559: 395-407, 2004.
165. Buschard K, Bock T: Gluten og type 1 diabetes. *Ugeskr Laeger* 166: 2542-2543, 2004.
166. Hartoft-Nielsen M-L, Rasmussen AK, Kaas A, Feldt-Rasmussen U, Buschard K: Neonatal stimulation of the thyroid gland with iodine or suppression during adolescence with triiodothyronine changes the prevalence of autoimmune thyroiditis in BB rats. *Eur J Endocrinol* 151: 375-382, 2004.
167. Di Marco R, Mangano K, Quattrocchi C, Amato F, Nicoletti F, Buschard K: Exacerbation of protracted relapsing experimental allergic encephalomyelitis in DA rats by gluten-free diet. *APMIS* 112: 651-655, 2004.
168. Ma X, Zhang Y, Gromada J, Sewing S, Berggren P-O, Buschard K, Salehi A, Vikman J, Rorsman P, Eliasson L: Glucagon stimulates exocytosis in mouse and rat pancreatic alpha cells by binding to glucagon receptors. *Mol Endocrinol* 19: 198-212, 2005.
169. Bock T, Pakkenberg B, Buschard K: The genetic background determines size and structure of the endocrine pancreas. *Diabetes* 54: 133-137, 2005.

170. Blomqvist M, Carrier M, Andrews T, Pettersson K, Månsson J-E, Rynmark B-M, Fredman P, Buschard K: In vivo administration of the C16:0 fatty acid isoform of sulfatide increases pancreatic sulfatide and enhances glucose-stimulated insulin secretion in Zucker fatty (fa/fa) rats. *Diabetes Metab Res Rev* 21: 158-166, 2005.
171. Buschard K, Lindblad U, Bøg-Hansen E, Blomqvist M, Bengtsson K, Hedner J, Råstam L, Fredman P: Low serum concentration of sulfatide and presence of sulphated lactosylceramide are associated with type 2 diabetes. *Diabetic Medicine* 22: 1190-1198, 2005.
172. Hartoft-Nielsen ML, Rasmussen AK, Feldt-Rasmussen U, Buschard K, Bock T: Estimation of number of follicles, volume of colloid and inner follicular surface area in the thyroid gland of rats. *J Anat* 207: 117-124, 2005.
173. Olsen HL, Theander S, Bokvist K, Buschard K, Wollheim CB, Gromada J: Glucose Stimulates Glucagon Release in Single Rat {alpha}-Cells by Mechanisms that Mirror the Stimulus-Secretion Coupling in {beta}-Cells. *Endocrinology* 146: 4861-4870, 2005.
174. Buschard K, Blomqvist M, Osterbye T, Fredman P: Involvement of sulfatide in beta cells, and in type 1 and type 2 diabetes. *Diabetologia* 48: 1957-1962, 2005.
175. Hansen AK, Ling F, Kaas A, Funda DP, Farlov H, Buschard K: Diabetes preventive gluten-free diet decreases the number of caecal bacteria in non-obese diabetic mice. *Diabetes Metab Res Rev* 22: 220-225, 2006
176. Pontes Andersen CC, Buschard K, Flyvbjerg A, Stoltze K, Holmstrup P: Periodontitis deteriorates metabolic control in type 2 diabetic Goto-Kakizaki rats. *J Periodontol* 77: 350-356, 2006.
177. Zitzer H, Wente W, Brenner MB, Sewing S, Buschard K, Gromada J, Efanov AM: Sterol Regulatory Element-Binding Protein 1 Mediates Liver X Receptor-{beta}-Induced Increases in Insulin Secretion and Insulin Messenger Ribonucleic Acid Levels. *Endocrinology* 147: 3898-3905, 2006.
178. Buschard K, Blomqvist M, Månsson J-E, Fredman P, Juhl J, Gromada J: C16:0 Sulfatide inhibits insulin secretion in rat beta-cells by reducing KATP-channel sensitivity to ATP Inhibition. *Diabetes* 55: 2826-2834, 2006.
179. Blomqvist M, Osterbye T, Månsson J-E, Buschard K, Fredman P: Uptake of the glycosphingolipid sulfatide in the gastrointestinal tract and pancreas in vivo and in isolated islets of Langerhans. *Lipids Health Dis*, 5: 26- , 2006.
180. Dahl K, Buschard K, Gram DX, d'Apice AJ, Hansen AK: Glucose intolerance in a xenotransplantation model: studies in alpha-gal knockout mice. *APMIS* 114: 805-811, 2006.
181. Bruun JM, Roeske-Nielsen A, Richelsen B, Fredman P, Buschard K: Sulfatide Increases adiponectin and decreases TNF-alpha, IL-6, and IL-8 in human adipose tissue In vitro. *Mol Cell Endocrinol*, 263: 142-148, 2007.
182. Andersen CP, Flyvbjerg A, Buschard K, Holmstrup P: Periodontitis is associated with aggravation of pre-diabetes in Zucker fatty rats. *J Periodontol* 78: 559-565, 2007.
183. Pontes Andersen CC, Flyvbjerg A, Buschard K, Holmstrup P: Relationship between periodontitis and diabetes: lessons from rodent studies. *J Periodontol*. 78: 1264-1275, 2007.
184. Funda DP, Kaas A, Tlaskalova-Hogenova H, Buschard K: Gluten-free but also gluten-enriched (gluten+) diet prevent diabetes in NOD mice; the gluten enigma in type 1 diabetes. *Diabetes Metab Res Rev* 24: 59-63, 2008.
185. Kharagjitsingh AV, Prinsen K, Lemkes HHPJ, de Vries RRP, Roep BO, Buschard K: Reduced frequency of blood group Lewis a-b- in female type 1 diabetes patients. *Diabetic Medicine* 25: 236-238, 2008.

186. Cardwell CR, Stene LC, Joner G, Cinek O, Svensson J, Goldacre MJ, Parslow RC, Pozzilli P, Brigis G, Stoyanov D, Urbonaitė B, Sipetić S, Schober E, Ionescu-Tirgoviste C, Devoti G, de Beaufort CE, Buschard K, Patterson CC: Caesarean section is associated with an increased risk of childhood-onset type 1 diabetes mellitus: a meta-analysis of observational studies. *Diabetologia*.51: 726-735, 2008.
187. Pontes Andersen CC, Holmstrup P, Buschard K, Flyvbjerg A: Renal alterations in prediabetic rats with periodontitis. *J Periodontol* 79: 684-690, 2008.
188. Ejlsing-Duun M, Josephsen J, Aasted B, Buschard K, Hansen AK: Dietary gluten reduces the number of intestinal regulatory T cells in mice. *Scand J Immunol*. 67: 553-559, 2008.
189. Hartoft-Nielsen ML, Rasmussen AK, Bock T, Feldt-Rasmussen U, Kaas A, Buschard K: Iodine and tri-iodo-thyronine reduce the incidence of type 1 diabetes mellitus in the autoimmune prone BB rats. *Autoimmunity*. 42: 131-138, 2009.
190. Roeske-Nielsen A, Buschard K, Månson JE, Rastam L, Lindblad U. A variation in the cerebroside sulfotransferase gene is linked to exercise-modified insulin resistance and to type 2 diabetes. *Exp Diabetes Res*. 2009, 429593, 2009.
191. Cardwell CR, Stene LC, Joner G, Bulsara MK, Cinek O, Rosenbauer J, Ludvigsson J, Jané M, Svensson J, Goldacre MJ, Waldhoer T, Jarosz-Chobot P, Gimeno SG, Chuang LM, Parslow RC, Wadsworth EJ, Chetwynd A, Pozzilli P, Brigis G, Urbonaitė B, Sipetić S, Schober E, Devoti G, Ionescu-Tirgoviste C, de Beaufort CE, Stoyanov D, Buschard K, Patterson CC: Maternal age at birth and childhood type 1 diabetes: a pooled analysis of 30 observational studies. *Diabetes* 59: 486-494, 2010.
192. Cardwell CR, Stene LC, Joner G, Davis EA, Cinek O, Rosenbauer J, Ludvigsson J, Castell C, Svensson J, Goldacre MJ, Waldhoer T, Polanska J, Gimeno SG, Chuang LM, Parslow RC, Wadsworth EJ, Chetwynd A, Pozzilli P, Brigis G, Urbonaitė B, Sipetić S, Schober E, Ionescu-Tirgoviste C, de Beaufort CE, Stoyanov D, Buschard K, Patterson CC: Birthweight and the risk of childhood-onset type 1 diabetes: a meta-analysis of observational studies using individual patient data. *Diabetologia*. *Diabetologia*.53: 641-651, 2010.
193. Buschard K :Sulphated galactosylceramide. *Diabetologia*. 53: 1007-1008, 2010.
194. Engkilde K, Buschard K, Hansen AK, Menné T, Johansen JD: Prevention of diabetes in NOD mice by repeated exposures to a contact allergen inducing a sub-clinical dermatitis. *Plos One* 5(5):e10591, 2010.
195. Kaas A, Pflieger C, Hansen L, Buschard K, Schloot NC, Roep BO, Mortensen HB: Association of adiponectin, interleukin (IL)-1ra, inducible protein 10, IL-6 and number of islet autoantibodies with progression patterns of type 1 diabetes the first year after diagnosis. *Clin Exp Immunol* 161: 444-452, 2010.
196. Lauritsen LFS, Hufeldt MR, Aasted B, Hansen CHF, Midtvedt T, Buschard K, Hansen AK: The Impact of a Germ Free Perinatal Period on the Variation in Animal Models of Human Inflammatory Diseases - A Review. *Scand J Lab Animal Science* 37: 43-54, 2010.
197. Roeske-Nielsen A, Dalgaard LT, Mansson J-E, Buschard K: Sulfatide protects insulin-producing cells against a cytokine-induced apoptosis, a possible role in diabetes. *Diabetes Metab Res Rev* 26: 631-638, 2010.
198. Osterbye T, Funda DP, Fundová P, Månsson J-E, Tlaskalová-Hogenová H, Buschard K: A subset of human β -cells expresses functional CD14 receptor: a signaling pathway for β -cell-related glycolipids, sulfatide and β -galactosylceramide. *Diabetes Metab Res Rev* 26: 656-67, 2010.
199. Cardwell CR, Stene LC, Joner G, Bulsara MK, Cinek O, Rosenbauer J, Ludvigsson J, Svensson J, Goldacre MJ, Waldhoer T, Jarosz-Chobot P, Gimeno SGA, Chuang L-M, Roberts CL, Parslow RC, Wadsworth EJK, Chetwynd A, Brigis G, Urbonaitė B, Šipetić S, Schober E, Devoti G, Ionescu-Tirgoviste C, de Beaufort CE, Stoyanov D, Buschard K, Radon K, Glatthaar C, Patterson CC: Birth order and childhood type 1 diabetes risk: a pooled analysis of 31 observational studies. *Int J Epidemiol* 40:363-374, 2011.

200. Buschard K, Hansen AK, Jensen K, Lindenberg-Kortleve DJ, de Ruiter LF, Krohn TC, Hufeldt MR, Vogensen FK, Aasted B, Osterbye T, Roep BO, de Haar C, Nieuwenhuis EE: Alcohol facilitates CD1d loading, subsequent activation of NKT cells, and reduces the incidence of diabetes in NOD mice. *PLoS One* 6(4):e17931, 2011.
201. Buschard K: What causes type 1 diabetes? Lessons from animal models. *APMIS* 119; suppl 132, 1-19, 2011.
202. Weile C, Josefsen K, Buschard K: Glucose activation of islets of Langerhans upregulates Toll-like receptor 5: Possible mechanism of protection. *Clin Exp Immunol* 166: 251-257, 2011.
203. Engkilde K, Johansen JD, Hansen AK, Menné T, Buschard K: Prevention of type 1 diabetes by inducing subclinical dermatitis on a small area. *Diabetes Metab Res Rev* 27: 954-958, 2011.
204. Arigi E, Blixt O, Buschard K, Clausen H, Levery SB: Design of a covalently bonded glycosphingolipid microarray. *Glycoconjugate Journal* 29: 1-12, 2012.
205. Kaas A, Andersen MLM, Fredheim S, Hougaard P, Buschard K, Petersen JS, de Beaufort C, Robertson KJ, Hansen L, Mortensen HB, Nielsen LB: Proinsulin, GLP-1 and Glucagon are associated with partial remission in children and adolescents with newly diagnosed type 1 diabetes. *Pediatr Diabetes* 13:51-58, 2012.
206. Kaas A, Pflieger C, Kharagjitsingh AV, Schloot NC, Hansen L, Buschard K, KoelemanBPC, Roep BO, Mortensen HB, Alizadeh BZ: Association between age, IL-10, IFN γ , stimulated C-peptide and disease progression in children with newly diagnosed type 1 diabetes. *Diabetic Med* 6: 734-741, 2012.
207. Antvorskov J, Fundova P, Buschard K, Funda D: Impact of Dietary Gluten on Regulatory T Cells and Th17 Cells in BALB/c Mice. *PloS One* 7(3):e33315, 2012.
208. Hansen CHF, Krych L, Nielsen DS, Vogensen FK, Hansen LH, Sørensen SJ, Buschard K, Hansen AK: Early life treatment with vancomycin propagates *Akkermansia muciniphila* and reduces diabetes incidence in non-obese diabetic (NOD) mice. *Diabetologia* 55: 2285-2294, 2012.
209. Subramanian L, Blumenfeld H, Tohn R, Ly D, Aguilera C, Maricic I, Mansson J-E, Buschard K, Kumar V, Delovitch TL: NKT cells stimulated by long fatty acyl chain sulfatides significantly reduce the incidence of Type 1 Diabetes in Nonobese Diabetic Mice. *Plos One* 2012;7(5):e37771.
210. Sildorf SM, Fredheim S, Svensson J, Buschard, K: Remission without insulin therapy on gluten-free diet in a six-year old boy with type 1 diabetes. *BMJ Case Rep.* 2012 pii: bcr0220125878. doi: 10.1136/bcr.02.2012.5878.
211. Buschard K, Månsson J-E, Roep BO, Nikolic T: Self-glycolipids modulate dendritic cells changing the cytokine profiles of committed autoreactive T cells. *Plos One* 2012;7(12):e52639.
212. Antvorskov JC, Fundova P, Buschard K, Funda DP: Dietary gluten alters the balance of proinflammatory and anti-inflammatory cytokines in T cells of BALB/c mice. *Immunology* 138: 23-33, 2013.
213. Ladefoged M, Buschard K, Hansen AM: Increased expression of TLR4 and inflammatory cytokines, IL-6 in particular, in islets from a mouse model of obesity and type 2 diabetes. *APMIS* 121: 531-538., 2013.
214. Dall M, Calloe K, Haupt-Jorgensen M, Larsen J, Schmitt N, Josefsen K, Buschard K: Gliadin fragments and a specific gliadin 33-mer peptide close KATP channels and induce insulin secretion in INS-1E cells and rat islets of Langerhans. *Plos One* 2013;8(6):e66474.
215. Sørensen JO, Buschard K, Brogren CH: The preventive role of type 2 NKT cells in the development of type 1 diabetes. *APMIS* 122: 167-182. 2014.
216. Svalgaard JD, Særmark C, Dall M, Buschard K, Johansen JD, Engkilde K: Systemic immunogenicity of para-phenylenediamine and diphenylcyclopropenone: two potent contact allergy-inducing haptens. *Immunol Res.* 58: 40-50, 2014.

217. Funda DP, Fundova P, Hansen AK, Buschard K: Prevention or early cure of type 1 diabetes by intranasal administration of gliadin in NOD mice. *PLoS One* 2014 Apr 11;9(4):e94530.
218. Hansen CHF, Krych L, Buschard K, Metzдорff SB, Nellemann C, Hansen LH, Nielsen DS, Frøkiær H, Skov S, Hansen AK: A maternal gluten-free diet reduces inflammation and diabetes incidence in the offspring of NOD mice. *Diabetes* 63: 2821-2832, 2014.
219. Nielsen DS, Krych L, Buschard K, Hansen CH, Hansen AK: Beyond genetics. Influence of dietary factors and gut microbiota on type 1 diabetes. Review. *FEBS Lett.* *FEBS Letters* 588: 4234–4243, 2014.
220. Antvorskov JC, Josefsen K, Engkilde K, Funda DP, Buschard K: Dietary gluten and the development of type 1 diabetes. Review. *Diabetologia*. 57:1770-1780, 2014.
221. Adlercreutz EH, Weile C, Larsen J, Engkilde K, Agardh D, Buschard K, Antvorskov JC: A gluten-free diet lowers NKG2D and ligand expression in BALB/c and non-obese diabetic (NOD) mice. *Clin Exp Immunol*. 177: 391-403, 2014.
222. Hansen CH, Andersen LS, Krych L, Metzдорff SB, Hasselby JP, Skov S, Nielsen DS, Buschard K, Hansen LH, Hansen AK: Mode of delivery shapes gut colonization pattern and modulates regulatory immunity in mice. *J Immunol*. 193:1213-1222, 2014.
223. Adlercreutz EH, Hansen D, Mortensen HB, Lernmark Å, Buschard K, Agardh D, Svensson J: Risk of celiac disease autoimmunity is modified by non-HLA genetic markers during the first year of clinical type 1 diabetes. *J Diabetes Endocrinology* 2: 58-64, 2014.
224. Larsen J, Dall M, Antvorskov JC, Weile C, Engkilde K, Josefsen K, Buschard K: Dietary gluten increases natural killer cell cytotoxicity and cytokine secretion. *Eur J Immunol*. 44: 3056-3067, 2014.
225. Adlercreutz E, Svensson J, Hansen D, Buschard K, Lernmark Å, Mortensen H, Agardh D: Prevalence of celiac disease autoimmunity in children with type 1 diabetes: regional variations across the Øresund strait between Denmark and southernmost Sweden. *Pediatr Diabetes* 16: 504-509, 2015.
226. Larsen J, Weile C, Antvorskov JC, Engkilde K, Nielsen SM, Josefsen K, Buschard K: Effect of Dietary Gluten on Dendritic Cells and Innate Immune Subsets in BALB/c and NOD Mice. *PLoS One*. 2015 Mar 4;10(3):e0118618. doi: 10.1371.
227. Fjelbye J, Antvorskov JC, Buschard K, Issazadeh-Navikas S, Engkilde K: CD1d knockout mice exhibit aggravated contact hypersensitivity responses due to reduced interleukin-10 production predominantly by regulatory B cells. *Exp Dermatol* 11: 853-856, 2015.
228. Damlund DS, Metzдорff SB, Hasselby JP, Wiese M, Lundsager M, Nielsen DS, Buschard KS, Hansen AK, Frøkiær H: Postnatal Hematopoiesis and Gut Microbiota in NOD Mice Deviate from C57BL/6 Mice. *J Diabetes Res* 2016;2016:6321980.
229. Rune I, Rolin B, Larsen C, Nielsen DS, Kanter JE, Bornfeldt KE, Lykkesfeldt J, Buschard K, Kirk RK, Christoffersen B, Fels JJ, Josefsen K, Kihl P, Hansen AK: Modulating the gut microbiota improves glucose tolerance, lipoprotein profile and atherosclerotic plaque development in ApoE-deficient mice *PLoS One*. 2016 Jan 22;11(1):e0146439.
230. Buschard K, Bracey AW, McElroy DL, Magisb AT, Osterbye T, Atkinson MA, Bailey KM, Posgai AL, Ostrov DA: Sulfatide preserves insulin crystals not by being integrated in the lattice but by stabilizing their surface. *J Diabetes Res* 6179635, 2016.
231. Haupt-Jorgensen M, Buschard K, Hansen AK, Josefsen K, Antvorskov JC: Gluten-free diet increases beta-cell volume and improves glucose tolerance in an animal model of type 2 diabetes. *Diabetes Metab Res Rev.* *Diabetes Metab Res Rev*. 2016 Oct;32(7):675-684. doi: 10.1002/dmrr.2802.

232. Svensson J, Sildorf SM, Pippert CB, Kyvsgaard JN, Bøjstrup J, Mortensen HB, Buschard K: Potential beneficial Effects of a Gluten-free Diet in Newly Diagnosed Children with Type 1 Diabetes. Springerplus. 2016 Jul 7;5(1):994. doi: 10.1186/s40064-016-2641-3. eCollection 2016.
233. Antvorskov JC, Josefsen K, Haupt-Jorgensen M, Fundova P, Funda DP, Buschard K: Gluten-free diet only during pregnancy efficiently prevents diabetes in NOD mouse offspring. J Diabetes Res. 2016;2016:3047574. doi: 10.1155/2016/3047574. Epub 2016.
234. Bruun SW, Josefsen K, Tanassi JT, Marek A, Pedersen MH, Sidenius U, Haupt-Jorgensen M, Antvorskov JC, Larsen J, Heegaard NH, Buschard K: Large Gliadin Peptides Detected in the Pancreas of NOD and Healthy Mice following Oral Administration. J Diabetes Res 2016, Article ID 2424306.
235. Buschard K, Thomassen K, Lynge E, Vejborg I, Tjønneland A, von Euler-Chelpin M, Andersen ZJ: Diabetes, diabetes treatment, and mammographic density in Danish Diet, Cancer, and Health cohort. Cancer Causes Control 28:13-21, 2017.
236. Dáňová K, Grohová A, Strnadová P, Funda DP, Šumník Z, Lebl J, Cinek O, Průhová Š, Koloušková S, Obermannová B, Petruželková L, Šedivá A, Fundová P, Buschard K, Špišek R, Palová-Jelínková L: Tolerogenic Dendritic Cells from Poorly Compensated Type 1 Diabetes Patients Have Decreased Ability To Induce Stable Antigen-Specific T Cell Hyporesponsiveness and Generation of Suppressive Regulatory T Cells. J Immunol. 198:729-740, 2017.
237. Haupt-Jorgensen M, Nielsen E, Engkilde K, Lerche M, Larsen J, Buschard K: Occupation with grain crops is associated with lower type 1 diabetes incidence: Registry-based case-control study. PLoS One. 2017 Jul 11;12(7):e0181143.
238. Bendtsen KM, Hansen CHF, Krych L, Buschard K, Farlov H, Hansen AK: Effect of Early-life Gut Mucosal Compromise on Disease Progression in NOD Mice. Comparative Medicine 67: 1-12, 2017.
239. Antvorskov JC, Aunsholt L, Buschard K, Gamborg M, Kristensen K, Johannesen J, Sørensen TIA, Svensson J: Childhood body mass index in relation to subsequent risk of type 1 diabetes-A Danish cohort study. Pediatr Diabetes 2018 Mar;19(2):265-270. doi: 10.1111.
240. Haupt-Jorgensen M, Larsen J, Josefsen K, Jørgensen TZ, Antvorskov JC, Hansen AK, Buschard K: Gluten-free diet exclusively during pregnancy alleviates the signs of diabetes and celiac disease in NOD mouse offspring. Diabetes Metab Res Rev. 2018 Feb 2. doi: 10.1002/dmrr.2987. [Epub ahead of print]
241. Holm LJ, Haupt-Jørgensen M, Larsen J, Giacobini JD, Bilgin M, Buschard K: L-serine supplementation lowers diabetes incidence and improves blood glucose homeostasis in NOD mice. PLoS One. 2018 Mar 15;13(3):e0194414.
242. Rune I, Rolin B, Lykkesfeldt J, Sandris Nielsen D, Krych L, Kanter JE, Bornfeldt KE, Kihl P, Buschard K, Josefsen K, Fels JJ, Mortensen A, Christoffersen B, Kirk RK, Hansen AK: Long-term Western diet fed apolipoprotein E-deficient rats exhibit only modest early atherosclerotic characteristics. Scientific Reports Sci Rep. 2018 Apr 3;8(1):5416. doi: 10.1038/s41598-018-23835-z.8:5416, 2018.
243. Kihl P, Krych L, Buschard K, Wesley JD, Kot W, Hansen AK, Nielsen DS, Von Herrath MG: Oral Insulin Does Not Alter the Gut Microbiota Composition of NOD Mice. Diabetes Metab Res Rev. 2018 Apr 10:e3010. doi: 10.1002/dmrr.3010.
244. Holm LJ, Krogvold L, Hasselby JP, Kaur S, Claessens LA, Russel MA, Mathews CE, Hanssen KF, Morgan NG, Koeleman BPC, Roep BO, Gerling IC, Pociot F, Dahl-Jørgensen K, Buschard K: Abnormal islet sphingolipid metabolism in type 1 diabetes. Diabetologia 61, 1650-1661, 2018. Referred in Nature Reviews Endocrinology | <https://doi.org/10.1038/s41574-018-0027-z>.
245. Antvorskov JC, Halldorsson TI, Josefsen K, Svensson J, Granström C, Roep BO, Olesen TH, Hrolfsdottir L, Buschard K, Olsen S: Association between maternal gluten intake and type 1 diabetes in offspring: national

prospective cohort study in Denmark. *British Medical Journal* 2018;362:k3547. Referred in Editorial *BMJ* 2018;362:k3867.

246. Haupt-Jorgensen M, Morgen CS, Svensson J, Allin K, Buschard K, Josefsen K, Antvorskov JC: Maternal antibiotic use during pregnancy and type 1 diabetes development in children - a national prospective cohort study. *Diabetes Care* 2018 Dec;41(12):e155-e157. doi: 10.2337/dc18-1764.PMID: 30327353.
247. Hansen LBS, Roager HM, Sønderby NB, Gøbel RJ, Kristensen M, Vallès-Colomer M, Vieira-Silva S, Ibrügger S, Lind MV, Mørkedahl RB, Bahl MI, Madsen ML, Havelund J, Falony G, Tetens I, Nielsen T, Allin KH, Frandsen HL, Hartmann B, Holst JJ, Sparholt MH, Holck J, Blennow A, Moll JM, Meyer AS, Hoppe C, Poulsen JH, Carvalho V, Sagnelli D, Dalgaard MD, Christensen AF, Lydolph MC, Ross AB, Villas-Bôas S, Brix S, Sicheritz-Pontén T, Buschard K, Linneberg A, Rumessen JJ, Ekstrøm CT, Ritz C, Kristiansen K, Nielsen HB, Vestergaard H, Færgeman NJ, Raes J, Frøkiær H, Hansen T, Lauritzen L, Gupta R, Licht TR, Pedersen O A low-gluten diet induces changes in the intestinal microbiome of healthy Danish adults. *Nat Commun.* 2018 Nov 13;9(1):4630. doi: 10.1038/s41467-018-07019-x. PMID: 30425247.
248. Haupt-Jorgensen M, Holm LJ, Josefsen K, Buschard K: Possible Prevention of Diabetes with a Gluten-Free Diet. *Nutrients.* 2018 Nov 13;10(11). pii: E1746. doi: 10.3390/nu10111746. Review. PMID: 30428550.
249. Kihl P, Krych L, Deng L, Overgaard Kildemoes A, Laigaard A, Hestbjerg Hansen L, Hansen CHF, Buschard K, Sandris Nielsen D, Hansen AK: Oral LPS Dosing Induces Local Immunological Changes in the Pancreatic Lymph Nodes in Mice. *J Diabetes Res.* 2019 Mar 6;2019:1649279. doi: 10.1155/2019/1649279. PMID: 30956991.
250. Holm LJ, Buschard K: L-serine: a neglected amino acid with a potential therapeutic role in diabetes. *APMIS.* 2019 Oct;127(10):655-659. doi: 10.1111/apm.12987. Epub 2019 Sep 2. Review. PMID: 31344283
251. Holm LJ, Haupt-Jorgensen M, Giacobini JD, Hasselby JP, Bilgin M, Buschard K: Fenofibrate increases very-long-chain sphingolipids and improves blood glucose homeostasis in NOD mice. *Diabetologia.* 12: 2262-2272, 2019.
252. Holm LJ, Mønsted MØ, Haupt-Jørgensen M, Buschard K: PPARs and the development of Type 1 Diabetes. *PPAR Research*, ID 6198628, 2020, doi.org/10.1155/2020/61986282020
253. Buschard K, Holm LJ, Feldt-Rasmussen U: Insulin independence in newly diagnosed type 1 diabetes patient following fenofibrate treatment. *Case Rep Med.* 2020 May 14;2020:6865190. doi: 10.1155/2020/6865190. eCollection .PMID: 32508930
254. Buschard K: Fenofibrate increases the amount of sulfatide which seems beneficial against Covid-19..*Med Hypotheses.* 2020 Oct;143:110127. doi: 10.1016/j.mehy.2020.110127. Epub 2020 Jul 21.PMID: 32759008
255. Haupt-Jorgensen M, Buschard K. Can a gluten-free diet be partly protective for COVID-19 infection? *APMIS.* 2020 Oct;128(10):558-559. doi: 10.1111/apm.13075.PMID: 32854147
256. Antvorskov J, Morgen C, Buschard K, Jess T, Allin K, Josefsen K: Antibiotic treatment during early childhood and risk of type 1 diabetes in children: A national birth cohort study. *Pediatric Diabetes Pediatr Diabetes.* 2020 Dec;21(8):1457-1464. doi: 10.1111/pedi.13111. Epub 2020 Oct 1.PMID: 32902076
257. Ludvigsson J, von Herrath MG, Mallone R, Buschard K, Cilio C, Craig M, Ilonen J, Leslie D, McGeoch JEM, Schneider D, Skyler JS, Flodström Tullberg M, Hober D. Corona Pandemic: Assisted Isolation and Care to Protect Vulnerable Populations May Allow Us to Shorten the Universal Lock-Down and Gradually Re-open Society..*Front Public Health.* 2020 Sep 30;8:562901. doi: 10.3389/fpubh.2020.562901. eCollection 2020.PMID: 33102423
258. Haupt-Jorgensen M, Groule V, Reibel J, Buschard K, Lynge Pedersen AM: Gluten-free diet modulates inflammation in salivary glands and pancreatic islets. *Oral Dis.* 2021 Jan 11. doi: 10.1111/odi.13775.

259. Pedersen K, Haupt-Jørgensen M, Krogvold L, Kaur S, Gerling IC, Pociot F, Dahl-Jørgensen K, Buschard K: Genetic predisposition in the 2'-5'A pathway in the development of type 1 diabetes: potential contribution to dysregulation of innate antiviral immunity. *Diabetologia*. 2021 May 11. doi: 10.1007/s00125-021-05469-5. PMID: 33973017
260. Mønsted MØ, Falck ND, Pedersen K, Buschard K, Holm LJ, Haupt-Jørgensen MJ: Intestinal permeability in type 1 diabetes: An updated comprehensive overview. *J Autoimmun* 2021 Aug;122:102674. doi: 10.1016/102674. Epub 2021 Jun 25.
261. Hansen CHF, Larsen CS, Zachariassen LF, Mentzel CMJ, Laigaard A, Krych L, Nielsen DS, Gobbi A, Haupt-Jørgensen M, Buschard K, Hansen AK: Gluten-free diet reduces autoimmune diabetes mellitus in mice across multiple generations in a microbiota-independent manner. *J Autoimmun*. 2022 Feb;127:102795. doi: 10.1016/j.jaut. 2022.102795. Epub 2022 Jan 31. PMID: 35101708
262. Kihl P, Krych L, Deng L, Hansen LH, Buschard K, Skov S, Nielsen DS, Hansen AK: Effect of gluten-free diet and antibiotics on murine gut microbiota and immune response to tetanus vaccination. *PLoS One* 2022 Apr 13;17(4):e0266719. doi: 10.1371/journal.pone.0266719. eCollection 2022. PMID: 35417506.
263. Buschard K, Josefsen K, Råstram L, Lindblad U, Daka B: Sulfatide and longevity. *Letter. J Gerontol, A Biol Sci Med Sci*. 2022 Sep 1;77(9):1715-1716. doi: 10.1093/gerona/glac126. PMID: 35666628
264. Buschard K: The Etiology and Pathogenesis of Type 1 Diabetes – A Personal, Non-Systematic Review of Possible Causes, and Interventions. *Front Endocrinol* 2022 Aug 25;13:876470. doi: 10.3389/fendo.2022.876470. eCollection 2022. PMID: 36093076.
265. Tekin H, Josefsen K, Krogvold L, Dahl-Jørgensen K, Gerling I, Pociot F, Buschard K: PDE12 in type 1 diabetes. *Scientific Reports* (2022) 12:18149-18153.
266. Josefsen K, Krogvold L, Gerling I, Pociot F, Dahl-Jørgensen K, Buschard K: Development of Type 1 Diabetes may occur through a Type 2 Diabetes mechanism, *Front. Endocrinol*. 13:1032822. doi:10.3389/fendo 2022. 1032822.
267. Buschard K, Antvorskov J: The C24:0 sulfatide isoform as an important molecule in Type 1 Diabetes. *Frontiers Bioscience-Landmark*, 2022; 27(12): 331 <https://doi.org/10.31083/j.fbl2712331>.
268. Hansen CHF, Haupt-Jørgensen M, Buschard K, Pakkenberg B, Krych L, Hansen AK: Maternal antibiotic exposure increases total islet number and volume in the neonatal pancreas and reduces HbA1c and insulinitis in adult female non-obese diabetic mice. *Clinical and Translational Discovery*, 2023. <https://doi.org/10.1002/ctd2.188>
269. Roeske-Nielsen A, Månsson J-E, Tekin H, Rieneck K, Bendtzen K, Buschard K: Sulfatide inhibits fibroblast growth, activation and oxidative stress induced by ectopic insulin. *Diabetes Obes Metab*. 2023 May 29. doi: 10.1111/dom.15123. PMID: 37246802.
270. Johansen VBI, Færø D, Buschard K, Kristiansen K, Pociot F, Küllerich P, Josefsen K, Haupt-Jørgensen M, Antvorskov J: A gluten-free diet during pregnancy and early life increases short chain fatty acid producing bacteria and regulatory T cells in prediabetic NOD mice. *Cells*, in press.