

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 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	

Networks

Several local and international collaborators, including groups in 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
Receiver of numerous research grants from public and private funds	

Previous research achievements

Published 249 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).

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 glycolipids, 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).

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. *Intermittent 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*

242. 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>.

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, 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.
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.

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 organ-specific 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. Tevion 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. Dyreeksperimentelle og humane studier. Disputatsoversigt. Lægeforeningens Forlag 1-40, 1984.
37. Buschard K: Det thymusafhængige immunapparat i patogenesen til type 1 (insulin-krævende) diabetes mellitus. Dyreeksperimentelle og humane studier. Autoreferat af disputatsoversigt. *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.
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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.
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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.
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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.
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66. Buschard K: The functional state of the beta cells in the pathogenesis of insulin-dependent diabetes mellitus. *Autoimmunity* 10: 65-70, 1991.
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