

Curriculum vitae, Per T. Sangild

Name, date/place of birth: Per Torp Sangild, 30.07,1961, Åbenrå, Denmark
Current employment: Professor of Comparative Pediatrics and Nutrition, Dept. Veterinary and Animal Sciences (IVH), Faculty of Health and Medical Sciences, Univ. Copenhagen (UCPH), 68 Dyrølægevej, DK-1958 Frederiksberg. Tel. +4535282698; Mob. +4526160530. Email: pts@sund.ku.dk
Professor of Pediatrics, Dept. Neonatology, Rigshospitalet (10%)
Professor of Pediatrics, SDU/Odense University Hospital (10%)

Academic profile:

Responsible for graduate and post-graduate *teaching* of students in topics related to nutrition, reproduction, development and physiology. *Research* focus on developmental gastroenterology, endocrinology and nutrition in animals and infants during health and disease (clinical nutrition). Experimental models using cell and animals (mainly pigs). Key lab analyses include nutrition, histology, immunity, microbiology, metabolism, endocrinology, molecular biology, genetics.

Research experience and leadership:

Per Sangild has led >50 research projects (each 0.5-72 mio DKK), including wide collaboration among local, national and international partners. International longer research stays in China, UK, Australia (6-12 mths). Has led research groups (20-30 staff) at Univ. Copenhagen since 2004 and was primary supervisor of 40 PhD students. Author of 250 international, peer-review publications, 46 book chapters (first/senior authorships: 145 journal publications, 41 book chapters; May 2021). Has given 50 invited review lectures at international congresses last 10 years. Has been assessed qualified by international evaluation as full professor in Pediatrics, Human Nutrition, Animal Production, Clinical Animal Nutrition and Veterinary Physiology.

Academic degrees:

- 1986: MSc (Animal Science), Faculty of Science, Univ. Copenhagen
- 1990: PhD (Animal Physiology), La Trobe University, Australia & Univ. Copenhagen
- 1996: DSc (Veterinary Medicine, dr.med.vet.), Faculty of Science, Univ. Copenhagen.
- 2009: DSc (Human Medicine, dr.med.), Faculty of Health/Medical Science, Univ. Copenhagen

Academic employment:

- 1986: Lecturer ass., Dept. of Anatomy and Physiology, UCPH, 1/9/86-31/12/86
- 1987: PhD stipendiate, Dept. of Animal Science and Health, UCPH, 1/2/87-31/7/89
- 1990: Research Fellow, Dept. of Animal Science and Health, UCPH, 1/8/89-31/12/90
- 1991: Post Doctoral Fellow, Dept. of Physiology, Univ. of Cambridge, UK, 1/1-31/12 1991
- 1992: Research Fellow, Div. Animal Reproduction / Internal Medicine, UCPH, 1/1/92-31/1/96
- 1996: Associate Professor, Division of Animal Nutrition, UCPH, 1/2/96-31/8 2004
- 2004: Visiting Professor, Dept. Zoology, Human Nutrition, Univ. of Hong Kong, 1/9 04-1/8 2005
- 2005: Professor of Preventive Human Nutrition, Head, UCPH, 1/8 05-31/12 2006
- 2006: Professor of Experimental and Clinical Nutrition, Head, UCPH, 1/1 07-31/12 2014
- 2013: Professor (10%), Juliane Marie Center, Copenhagen University Hospital, 1/6 2013-18 -
- 2015: Professor of Comp. Pediatrics and Nutrition, IVH, Univ. Copenhagen, 1/1 2015-
- 2018: Professor (10%), Odense University Hospital / SDU, 1/7 2018 -

Academic acknowledgements/appointments:

- 2014-: Adjunct Professor of Pediatrics, Sun Yat-sen University /6th Aff. Hospital, China
- 2016-: Adjunct Professor of Animal Nutrition, Sichuan Agricultural University, China

Some key scientific achievements:

- First to show that bovine colostrum can improve gut maturation for preterm infants
- First to develop a spontaneous animal (pig) models of necrotising enterocolitis in infants (NEC)
- First to document the gut maturational effects of the gut hormone, GLP-2 in newborns
- First to show that glucocorticoid hormones can improve gut maturation in fetuses and newborns
- First to show how the fetal gastrointestinal tract responds to ingestion of milk before birth

Lectures for university students (last 20 years):

2000-2004: Veterinary Nutrition (UCPH DVM students, 40 lect./yr, course coordinator)
2000-2004: Infant Nutrition (UCPH MSc students, 3 lectures/yr)
2000-2005: Reproduction physiology (UCPH DVM students, 3 lectures/year)
2000-2002: Sheep Nutrition (UCPH MSc students, 3 lectures/year)
1998-2004: Animal Nutrition & Physiology (UCPH MSc students, 6 lectures/year)
2000-2004: Veterinary Clinical Nutrition (UCPH DVM students 10 lect./year)
2004-2006: Human Diet & Disease (Univ. Hong Kong BSc students, 3 lectures)
2006-2018: Life Cycle Nutrition (UCPH, Human Nutrition MSc students, course coordinator)
2006-2015: Theme course in Human Nutrition Science (UCPH, course coordinator)
2007-2019: Annual PhD/MSc courses in Pediatric Research, Clinical Nutrition, Pediatric Nutrition
2007-2019: Annual PhD course in Food, Medicine & Philosophy (Denmark & China, coordinator)
2017-2019: Annual lectures in Animal Nutrition, Sichuan Agricultural University, China

Supervisor of BSc or MSc students (last 20 years):

Anette R. Jensen, UCPH, Colostral immunology in the newborn pig (MSc, 2001)
Kristina Sørensen, UCPH, Gut immunity in newborn animals (BSc, 2001)
Line Dissing, UCPH, Food uptake prior to and after weaning (BSc, 2001)
Anette Skov, UCPH, Colostral effects on gut function in newborn pigs (BSc, 2001)
Klaus Frederik Engstöm, UCPH, ACTH effects on calf glucose metabolism (MSc, 2001)
Katrine Lindegaard, UCPH, Glycogen metabolism in newborn calves (MSc, 2001)
Malene Klinkov, UCPH, Dexamethasone induction of birth in cows (MSc, 2001)
Kristina Sørensen, UCPH, Microbial interactions in diseased gut (MSc 2004)
Haldor Feldeberg, UCPH, Pig preterm birth and parenteral nutrition (MSc 2003)
Henrik Søborg, UCPH, Pig preterm birth and parenteral nutrition (MSc 2003)
Jane Kristensen, UCPH, Vitamin E and diarrhœa in pigs (MSc 2004).
Maria Eskildsen, UCPH, Prebiotics and the weaning pig intestine (MSc 2005)
Trine Susan Brændmo, UCPH, Survival of IVF calves (MSc 2005)
Maaike Shregardus, UCPH, Glukoseomsætning i IVF kalve (MSc 2005)
Camilla Gudbergesen, UCPH, PREWAR effect on weanling pigs (MSc 2005)
Gry Svendsen, UCPH, IFV, TPN nutrition in neonatal UCPH (BSc 2006).
Malene Cilieborg, UCPH, IHE, Formula-feeding and Clostridium (MSc 2007)
Marianne Asp Mortensen, IHE (title:) (MSc 2007).
Søren Rasch, UCPH (IHE/IPH), Sucking reflex development (MSc exp. 2007)
Anee Berg Kehlet, UCPH. Fermentatible carbohydrate and gut health (MSc 2007)
Nikolaj Weber, UCPH. Endotoxin response before birth and gut after birth (MSc 2007)
Alexander Erichsen, Feeding preterm infants in China (MSc 2014)
Britt Andersen, Feeding preterm infants in China (MSc 2014)

PhD students (M: main supervisor or C: co-supervisor):

Helene Jakobsen, UCPH, Neonatal competence in in vitro embryo calves (C, PhD 2001)
Yvette Petersen, UCPH, GLP-2 effects on the TPN-fed gut (M, PhD, 2002)
Charlotte Bjørnvad, UCPH, luminal nutrients on GIT function (M, PhD 2004)
Thomas Thymann Nielsen, UCPH, diarrhoea in young animals (M, PhD 2006)
Richard Siggers, UCPH, Probiotics as feed additives in neonates (M, PhD 2007)
Jayda Cleave, UCPH, Immunomodulatory diets (M, PhD 2008)
Malene Cilieborg, UCPH, IHE, Probiotics in Early Life (M, PhD 2009)
Hanne Kristine Møller, UCPH/DTU, Prebiotics in Early Life (M, PhD 2009)
Ping Ping Jiang, UCPH-Univ. Hong Kong, Proteome analysis in newborn intestine (C, PhD 2008)
Chet Liangqiang, UCPH/China. Born too small or too early (C, PhD 2009)
Ann Cathrine Stoy, DTU. Colostrum in early nutrition (C, PhD 2011)
Peter Pontoppidan, UCPH/Rigshospitalet, Nutrition for Cancer Patients (M, MD-PhD 2012)
Lise Aunsholt, UCPH/SDU, Nutrition for SBS pediatrics (C, MD-PhD 2012)
Andreas Vegge, UCPH, Nutrition for gastroeintestinal surgery patients (M, PhD 2011)
Michael Ladegaard Jensen, UCPH, Colostrum for Gut Protection (M, PhD 2012)
Mette Østergaard, UCPH, Amniotic fluid as diet for newborns (C, PhD 2012)
Yanqi Li, UPCH/ARLA, Milk Bioactives for Neonates (M, PhD 2013)

Rene Liang, UCPH, Animal Model of chemotherapy (M, MD-PhD 2015)
 Anders Sørensen, UCPH, Neurological damage in preterm newborns (M, PhD 2017)
 Jing Sun, UCPH, Diet, microbiota and brain development (M, PhD 2017)
 Xiaoyu Pan, UCPH, Diet and prematurity effects on intestinal epigenetics (M, PhD 2018)
 Kristine KB Knudsen, UCPH/RH, Preterm birth and surgical gut interventions (C, MD-PhD 2019)
 Waller Ren, UCPH, Diet and inflammation in early life (C, PhD 2019)
 Mu Di, UCPH, Metabolomics in relation to perinatal inflammation (M, PhD 2019)
 Agnethe Ahnfeldt, UCPH, Fortification of Human Milk for preterm Infants (M, MD-PhD 2020)
 Yan Xu-Dong, UCPH, Early life nutrition and perfusion for preterm infants (M, MD-PhD 2023)
 Susanne Søndergaard Kappel, UCPH/RH, Feeding intolerance for preterm infants (M, PhD 2021)
 Ole Bæk, UCPH, Growth restriction and immunity in preterm infants and pigs (M, PhD 2021)
 Yang Lin, UCPH, Antibiotics and gut microbiota in newborn pigs and infants (M, PhD 2023)
 Zhiyang Wu, UCPH, Antibiotics and blood immunity in newborn pigs and infants (C, PhD 2023)
 Martin Rasmussen, UCPH, IGF-1 in newborn pigs and infants (M, MD-PhD 2024)
 Mads Niemann, UCPH, Neonatal survival and resuscitation of pigs and infants (M, MD-PhD 2024)
 Line Rasmussen, UCPH, IGF-1 in newborn pigs and infants (C, PhD 2024)

Official referee for PhD theses / academic positions:

Bolette Hartmann, Univ. Copenhagen, Structure & function of GLP-2 (PhD, 2001)
 Klaus Rådberg, Univ. Lund, Development of gut function in rats (PhD, 2001)
 Sigve Nordrum, Univ. Oslo, Nutrient effects on fish gut function (PhD 2002)
 NN, Associate Professor in Clinical Nutrition, IHE, UCPH (2003)
 NN, Senior Researcher in immunology/microbiology, Danish Food and Vet. Inst. (2004)
 Mei Jie, Intestinal TGF beta receptors and early nutrition (PhD 2004)
 Academic evaluation, Ass. Prof. in Human Clinical Nutrition, 2005, UCPH
 Christian Fink Hansen, Microbial gut ecology of pigs with different diets (PhD 2005)
 Academic evaluation, adjunct in Human Nutrition, 2005, UCPH
 Acad. evaluation, Ass. Prof. in Microbiology, Danish Food & Veterinary Inst., 2005
 Acad. description of position, Professor of Biomedicine/Nutrigenomics, UCPH, 2005
 Academic evaluation, adjunct in Human Nutrition, 2006, UCPH
 Ann Linderth, Univ. Lund, Lectins and precocious gut development (PhD, 2006)
 Wang Ling, University of Hong Kong, Perinatal nutrition and brain function, (PhD 2006)
 NN, Associate Professor in Nutritional immunology, Technical University, DK (2006)
 NN, Professor of Biomedicine/Nutrigenomics, IHE, UCPH (2006) (head of committee)
 NN, Professor of Nutrition, Univ. Hong Kong (2006)
 Acad. evaluation, Ass. Prof. in Immunology, Danish Technical University, 2006
 PhD opponent and review committee, Stine Kjelle, Panum Inst., 2007
 Gitte Ravn Haren, IHE, Oxidative defence and cancer (PhD 2007)
 NN, Professor of Veterinary Obstetrics and Reproduction, UCPH (2009)
 NN, Professor of Clinical & Experimental Nutrition, UCPH 2009 (head of committee)
 NN Professor of Microbiology, Technical University of Denmark, 2009
 Gudrun Weiss, Chair, PhD review committee, UCPH, 2010
 Patricia Puiman, member, PhD review committee, University of Rotterdam, 2010
 Gregers Mærsk Christensen, PhD review committee (chairman), UCPH, 2011
 NN, Professor of International Nutrition, review committee, chairman, UCPH (2011)
 Patricia Puiman, Neonatal nutrition /gut development, Rotterdam (PhD committee, 2012)
 Malene Wibe Poulsen, Nutrigenomics/ACE development (head of PhD committee 2013)
 Monika Bak, Gut Peptides in Nutrition (head of PhD committee, 2014)
 Julie Lynegaard, Risk factors for antibiotic treatment in nursery pigs (head PhD committee, 2021)

Posters (P), orals (O), invited reviews (R) presented at international science congresses:

- 1989: (2O) Comparative Aspects Physiology & Digestion, Copenhagen, DK, 6-8 July
- 1990: (1O) 41st Meeting of the Eur. Ass. Anim. Prod., Toulouse, France, 9-12 July
- 1990: (1P) 10th Meeting of the Eur. Intest. Transport Group, Askov, DK, 16-20 September
- 1991: (2O) Congress on Digestive Physiology in Pigs, Wageningen, Holland, 24-26 April
 (1P) Congress on Neonatal Survival and Growth, Leeds, UK, 15-17 July
 (1O) Meeting of the Physiological Society, Cambridge, United Kingdom, 18-20 July
- 1992: (1P, 1O) Nordic Congr. on Physiol. Pharm., Copenhagen, Denmark, 16-19 August

- (1P) Vth Int. Congress on Animal Reproduction, Hague, Holland, 23-27 August
- (2P) IX Int. Symp. Gastrointestinal Hormones, Leuven, Belgium, 1-5 September
- 1993: (1O) Symp. Growth factors embryon. & fetal devel., Uppsala, Sweden, 13-14 May
- (1O) Symposium on Early Life Nutrition & Adult Disease, Grasmere, UK, 26.-29. juli
- 1994: (2P) Ann. Meeting of Australian Society for Medical Research, Adelaide, 17 June
- (2P) Thorburn Symp. on Fetal Physiology, Hamilton Island, Australia, 5-9 August
- (2O, 1P) Int. Symp. Digestive Physiology in Pigs, Rostock, Germany, 4-6 October
- 1995: (2P) American Gastroenterology Association, San Diego, USA, 14-17 May
- (1P, 1O) International Society for Veterinary Perinatology, Cambridge, UK, 7-9 July
- (1P) Swine in Biomedical Research, Maryland, USA, 22-25 October
- 1996: (3P) 11th Symposium on Regulatory Peptides, Copenhagen, DK, 3-7 September
- 1997: (2O, 1P) 7th Symp. on Digestive Physiology in Pigs, Saint Malo, France, 26-28 May
- (2P) Fetal and Neonatal Physiology, Cambridge, UK, 25-29 June
- (2P) Australasian Pig Science Association, Canberra, Australia, 7-12 December
- 1998: (2P) European Embryo Transfer Society, Venice, Italy, June
- 1999: (3P) International Embryo Transfer Society, Quebec City, Canada, 10-13 January
- (2P) European Association of Animal Production, Zürich, Switzerland, 22-25 August
- (1R) Symp. on Pancreas in Growing Animals, Zürich, Switzerland, 26-27 August
- 2000: (1R) The German Nutrition Society, Göttingen, Germany, 7-9 March
- (6P, 1O) Experimental Biology, San Diego, USA, 27-29 March
- (10P) American Gastroenterology Association, San Diego, USA, 5-8 May
- (1R, 2O, 3P) Symp. on Digestive Physiology in Pigs, Uppsala, Sweden, 23-26 June
- (1R, 3P) Congress on Animal Reproduction, Uppsala, Sweden, 3-7 July
- 2001: (6P) Society for Gynecological Investigations, Toronto, Canada, 25-27 March
- (2P) Experimental Biology, Orlando, USA, 1-3 April
- (1R, 1O, 2P) Int. Congr. of Production Diseases, Copenhagen, DK 12-16 August
- (1R, 2O) Nordic Congr. for Pediatric Gastroenterology & Nutrition, DK, 1-2 October
- 2002: (5P) American Gastroenterology Association, San Francisco, USA, 19-22 May
- (1R) Swedish Dairy Association ("Colostrum immunity"), Karlstad, Sweden, 20-22 Aug
- (1R, 2 O) Danish Congr. for Pediatric Gastroenterology & Nutrition, DK, 10-11 Nov
- 2003: (1R) Symp. on Physiology of Fetal Growth Retardation, Prague, CZ, 20-23 April
- (2P) American Gastroenterology Association, Orlando, USA, 14-17 May
- (6P) Congress on Digestive Physiology in Pigs, Calgary, Canada, 11-13 May
- 2004: (3P, 1O) American Gastroenterology Association, New Orleans, USA, 15-19 May
- (1O, 3P) World Hepatology, Gastroent. & Nutrition Congress, Paris, France, 2-7 July
- 2006: (4P,1R) Nutriogenomics Congress, LMC, Copenhagen, DK, 15-16 March
- (1 R) Symposium on Early Nutrition and immunity, Innsbruck, Austria, 15-17 February
- (4P, 1O) 10th Int. Symposium on Digestive Physiology in Pigs, Vejle, DK, 25-27 May
- (2P, 1O) Experimental Biology, San Francisco, USA, 1-5 April
- (1P) Human Proteome Annual World Congress, Calif. 28-30 /10
- (1R) Enteral feeding on gut maturation, Int. Society of Milk & Lactation, Toronto, 28/9
- (1R, 1O) Necrotising enterocolitis, Danish Soc. of Ped. Gastroent. Nutr., Middelfart 8/11
- 2007: (1O) Pre- and probiotic research Congress, Øresund Food Network, Copenhagen, 14/3
- (3P) Symposium on Nutriogenomics in Denmark, Slagelse, 27/3
- (1P) International Inflammation Congress, Copenhagen, 17-20/6
- (1R) Eur. Society Pediatric Gastroenterology, Hepatology, Nutrition, Barcelona 25-27/5
- (1P) Danish Congr. for Pediatric Gastroenterology & Nutrition, Middelfart, 10-11/11
- (1O) Federation of European Nutritional Societies, Paris, 5-7/7
- (1P) Society for Pediatric Research - Research Congress, Houston, 20-22/10
- 2008: (7P, 3O) Society for Pediatric Research, Honolulu, 2-6/5
- (10P, 2R). Int. Society Pediatric Gastroenterology, Hepatology, Nutrition, Brazil 15-17/8
- (10 P) American Gastroenterology Association, San Diego, 20-23/8
- (1O) Danish Society for Clinical Nutrition, Copenhagen, 16/5
- (1R) Dansk Society for Reproduction and Fetal Development, Rigshospitalet, 26/10
- (3O) European Society for Clinical Nutrition, Florence, 13-16/9
- 2009: (2P) European Society for Parenteral and Enteral Nutrition, 25-27/8
- (1P) FOOD congress on innovation and entrepreneurship, 15-16/6
- (1R) Symposium on NEC news – from animal models to clinic, Copenhagen, DK, 18/6

- (1P) International Congress on Mucosal Immunology, Boston, US, 15/7
- (1O) Danish Society for Pediatric Gastroenterology and Nutrition, Middelfart, 27-28/9
- (1O) Center for Reproduction and Fetal Development, Ebeltoft, 27-28/8
- (1R, 1O, 8P) European Society for Pediatric Research, Hamburg, 9-12/10
- (1R) French Society for Neonatology, Paris, 24/11
- 2010: (1R) British Neonatal Society, 25/3
- (1R) Swedish Society for Neonatology, 16/9
- (1R) Society for Nutrition and Care of the Preterm Infant, Rome 9-10/9
- (3P) European Society for Mucosal Immunology, Holland, 15/9
- (3P) European Society for Clinical Nutrition, Nice, France 2/9
- (1R) Swedish Neonatal Society, Stockholm, 15/9
- (1R) World Congress on Integrative Medicine, Jerusalem, Israel, 16-18/10
- (1R) Symposium on Nutrition in Preterm Infants, Amsterdam, Holland, 20/12
- 2011: (3O) European Society for Pediatric Gastroenterology and Nutrition, Italy, 25/5
- (1R) Symposium on Human Milk for Preterm Infants, Amsterdam, 23/11
- (1R) The Perinatal Society, Medical Sciences of New Zealand, Perinatology, 20/8
- 2012: (1R) Pediatric Academic Societies, Istanbul
- (2R, 3P, 3O) International Society for Human Milk and Lactation, Trieste,
- (1R, 3O) Internal Symposium on Digestive Physiology in Pigs, Denver, Colorado, 29/5
- 2013: (1R) Nestle Research Centre, Switzerland. Enteral versus parenteral Nutrition, 29/1
- (1R) German Society for Neonatology, Nutrition in Preterm Neonates, 5/6
- (1R) European Soc. Parenteral & Enteral Nutrition, Paediatric Intensive Care, Leipzig, 2/9
- (1R) Danish Society for Pediatric Gastroenterology & Nutrition, Neonatal Nutrition, 25/11
- (1R, 10P, 5O) Eur. Soc. Pediatric Gastroenterology and Nutrition, London, 5-7/5
- 2014: (8P, 2O) Eur. Acad. Pediatric Societies, Barcelona, 21/10
- (6P) Eur. Soc. Pediatric Gastroenterology and Nutrition, Jerusalem, 9-12/6
- (1R) Guangzhou Neonatal and Pediatric Gastroenterology, 12/12
- (1O) Neonatal update, London 1-6/12
- (1O, 2P) Milk Genomics, Århus, 15/10
- (1R) British Neonatal Society, London, 5/12
- 2015: (1R) British Society for Pediatric Gastroenterology and Nutrition, 28/1
- (1R, 1P) Shanghai Neonatal Forum, 12/4
- (1R) Guangdong Medical Association, Zhongshan, 29/6
- (1O) Milk Bioactives for Newborns, Montana, US, 15-22/7
- (1R, 3O, 10P) Eur. Soc. Pediatric Gastroenterology and Nutrition, Amsterdam, 5-9/5
- (1R, 6O, 6P) Joint European Pediatric Societies, Budapest, 5-8/9
- (1R) Guangdong Perinatal Society / NEOMUNE society, 21/11
- 2016: (1R) Berlin Medela Symposium on Human Milk and Lactation, 15/4
- (1R) Guangdong Neonatal Society, China, 14/5
- (1R) Australian Animal Model Symposium, Perth, 9-13/5
- (1R) South China Neonatal Society, Shenzhen, 15/5
- (1R) European Soc. Enteral and Parenteral Nutrition, Copenhagen, 17/9
- (10P) European Association Pediatric Societies, Geneva, 25-27/10
- (1R) European Association Pediatric Societies, Geneva, NEOMUNE, 25-27/10
- (1R) Danish Society for Neonatology, 1/10
- (1R) Taiwan Society for Neonatology, 20/10
- (1R) Shenzhen Baoan Neonatal Forum, 22/10
- (1R) ARLA Foods International Milk ingredients meeting, Beijing, 20/11
- 2017: (1R) Nutrition and Growth conference, Amsterdam, 4-6/3
- (1R) SIGNEC meeting about neonatal animal models of NEC, London, 9-10 Oct
- (1R) Nutrition of Preterm Infants, Guangzhou, 5/11
- (1R) Danish Society for Neonatology, Ringsted, 10/9
- 2018: (13P) European Society for Pediatric Gastroenterology and Nutrition, 5-8 May
- (1R) NEOMUNE International meeting, 2 March
- (2O) PSANZ Perinatal Society, New Zealand, 26-28 March
- (1R) Whole Genome Sequencing in Newborns, Copenhagen, 20 August
- (1R) Improved care for preterm infants, Shenzhen Neonatal Society, 3-4 Nov
- (1R) Omics analyses for newborns, Shenzhen, 5 Nov

- (1R) Milk and microbiota and brain development in newborn infants, Shenzhen 6 Nov
- (1R) Danish Society for Pediatric Gastroenterology: Milk from where, Vejle, 26 Sept
- 2019: (2O, 9P) Joint European Neonatal Societies, Maastricht, 17-21 Sep
- (1R) NEOMICS Congress, Shenzhen, China 8-10 Nov
- (1R) International Colostrum Meeting, Spain, 23-25 Nov
- 2020: (3P), ERS European Neonatal Lung Society, 2020

Invited scientific lectures for (inter)national research groups, industry, hospitals:

- 1988: La Trobe University, Melbourne Australia, 5/4
- 1990: Congress for pig producers ("Digestive system in pigs", 5pp.), Herning, 30/10
- 1990: Agricultural consultants ("Nutrition in the pig", 35pp.), Tune, 21/11
- 1991: Agromek (Shell/NOVO Nordic) ("Exogenous feed enzymes", 15pp.), 24/1
Agricultural consultants ("Diarrhoea in pigs", 13pp.), Tune, 14/5
Internordic PhD course ("Weight gain/loss in pigs", 17pp.), Tune, 20/8
Dept. of Clinical Biochemistry, State University Hospital, Copenhagen, 3/4
- 1992: Biochemical Society, Copenhagen ("Gastric proteases in the pig"), 27/5
Course in Laboratory Animal Care ("Research in perinatal pigs"), SH, DK, 21/09
Physiological Laboratory, University of Cambridge, United Kingdom
Danish Biochemical Society, Carlsberg Research Center, Copenhagen
- 1993: Congress for pork producers ("Digestive system in pig", 5pp.), Herning, 26/10
Internal Medicine, UCPH, Copenhagen, 6/6
Course, veterinarians ("Digestion, growth, development", 38 pp.), Århus, 21/11
- 1994: Animal Physiology, University of Lund, Sweden, 5/5
- 1995: Course, veterinarians ("Birth process and survival", 5 pp.), Ringsted, 10/2
3 courses, veterinarians ("Fetal organs and birth", 70 pp), 26/10, 20-21/11
Anatomy and Physiology, UCPH, Copenhagen, 6/5
- 1996: 3 courses, veterinarians ("Fetal and neonatal foals", 55 pp), 2/10, 9-10/10
Human Neonatal Clinic, State University Hospital, Rigshospitalet, Copenhagen, 3/4
Human Nutrition, UCPH, Copenhagen, 5/6
Parasitology Centre, UCPH, Copenhagen, 10/9
Human Neonatal Unit, McMaster University, Hamilton, Canada, 15/8
Childrens Nutrition Research Centre, Houston, Texas, USA, 14/8
Biological Sciences, University of Mississippi, Mississippi, USA, 12/8
- 1997: 3 courses, veterinarians ("Fetal and neonatal calves", 45 pp), 12/11, 19-20/11
- 1999: Congress for pork producers ("Digestion and probiotics", 5pp.), Herning, 11/5
Department of Pediatrics, McMaster University, Hamilton, Canada, 15/1
Department of Physiology, University of Toronto, Canada, 16/1
Department of Physiology, University of Montreal, Canada, 14/1
Endocrine Division, Toronto General Hospital, Ontario, Canada, 17/1
- 2000: Society for Pediatric Gastroenterology & Nutrition, Middelfart, Denmark,
- 2001: Danish Bacon Congress ("Neonatal & weaning mortality", 5pp.), Herning, 23/10
Bristol-Myers Int. Seminar ("Nutrition in premature infants"), Kastrup, Denmark, 10/11
Danish Parasitology Centre, Copenhagen, Denmark, 3/4
Dept. of Nutrition, INRA, Rennes, France, 12/3
Dept. of Endocrinology, Toronto General Hospital, Ontario, Canada, 13/4
Dept. of Gastroenterology, McMaster University, Hamilton, Canada, 14/4
Dept. of Human Nutrition, University of Illinois, USA, 20/4
- 2002: Schering-Plough seminar for veterinarians ("Pig passive immunity"), Silkeborg, 29/1
Vitfoss/DLG seminar for feed experts ("Diets for weanling pigs"), Viborg, 5/2
Infant Neonatology Clinic, Hilleroed Hospital, DK ("Premature pigs and babies"), 9/10
Swedish Dairy Association ("Colostrum immunity"), Karlstad, Sweden, 20/8
Danish Veterinary Association ("Neonatal diseases in pigs"), Nyborg, 10/9
- 2003: Pig Breeders Association ("Weaning pig morbidity"), Brædstrup, 27/02
Wyeth Nutritionals ("Nutrition of the premature newborn"), Philadelphia, USA, 13/05
Chr. Hansen Biosystems A/S ("The perinatal pig and probiotics"), Hørsholm, DK, 13/9
State University Hospital ("Rigshospitalet") ("Nutrition in premature newborns"), 26/11

- 2004: DanVet veterinarians ("Neonatal and weaning pig morbidity"), Brædstrup, 27/02
Chr. Hansen Biosystems A/S ("Vaginal birth and probiotics"), Hørsholm, DK, 18/2
Texas Gulf Digestive Disease Center ("Infant colitis"), Houston, USA, 20/5
- 2005: University of Hong Kong ("Perinatal Nutrition and NEC research"), Hong Kong, 21/3
Danish Veterinary Association ("Nutrition in Pigs, newborn to adults"), Tune, DK, 1/2
Sun Yat-Zen University, ("Nutritional science and Religion"), Guangzhou, China, 9/5
Sichuan University ("Nutritional science and Religion"), Chengdu, China, 23/6
Yaan University ("Nutritional science and Religion"), Sichuan, China, 24/6
- 2006: Gastrointestinal Research Group, University of Calgary, Canada 28/10
Nutritional Research Group, University of Alberta, Edmonton, 29/10
6 lectures on "Nutritional concepts in pigs", Danish Veterinary Association, 13/11
Danish Society for Food (LEVS) ("Food culture in China"), Copenhagen, 19/9
- 2007: Symposium on Diarrhoea, Boehringer-Ingelheim, Copenhagen, DK, 5/2
LvK Veterinarian symposium, Holstebro, DK, 24/5
Food and Nutrition at the Workplace, Symposium, Elsinore, DK, 30/5
Åbenrå YMCA Club, Food Culture, Science and Religion in China, DK, 1/5
BEST Symposium, Pig Models in BEST work, Middelgrunden, DK, 14/5
Danish Society for Food (LEVS) ("Food, Medicine & Philosophy"), Copenhagen, 18/9
- 2008: Roskilde YMCA Club, Food Culture, Science and Religion in China, DK, 3/2
ScanBur, Use of Pig as a Model in Human Nutrition, Køge, 11/6
Sichuan Agricultural University, Food, medicine and Philosophy in China, 6/7
Sichuan Agricultural University, Nutrition in growing animals, China, 7/7
Danish Meat Association ("Neonatal diseases in pigs"), Herning, 10/10
Society for Reproduction and Fetal Development, ("Amniotic Fluid), Copenh., 28/11
- 2009: Dept. of Pediatrics, Rigshospitalet ("Nutrition in Clinical Pediatrics", Copenhagen, 3/3
Danish Society for Orthomedicine ("Nutrition and Medicine Science"), Copenhagen, 6/9
Danish Pig Veterinary Association ("Colitis in Neonatal Pigs"), Kolding, DK, 5/11
- 2010: ARLA Foods ("Milk diets for Neonates"), Århus, DK, 19/6
NOVO Nordic ("Gastrointestinal physiology and endocrinology"), Copenhagen 15/10
- 2011: University of Memphis, Perinatal Nutrition in relation to NEC, 25/1
Shenzhen Childrens Hospital, Nutrition to prevent Gut Disease in Newborns, 5/3
University of Auckland, New Zealand, Gut Surgery in Preterm Neonates, 19/8
Lund University Hospital, Necrotising enterocolitis, 1/9 2011
Danish Technical University, Public researchers in China Symposium, 10/11
University of Berlin, Developmental Nutrition using pigs as models, 15/10
- 2012: University of Antwerp, Belgium. Pigs as models in Biomedical research, 1/12
- 2013: Nestle NESTEC Research Centre, 10/10
- 2014: Mead Johnson Nutritionals, Amsterdam 30/9
Mead Johnson Nutritionals /Guangzhou Womans and Childrens Hospital, 30/8
Guangzhou Womans and Childrens Hospital, 12/12
6th affiliated Hospital of Sun Yat-sen University, China
- 2015: Carlsberg Laboratory, Copenhagen, 15/01
Biostime, Milk for newborns, Guangzhou, 14/4
6th affiliated Hospital of Sun Yat-sen University, China, 28/6
Baoan Maternal and Childrens Hospital, China, 15/11
International Beijing Symposim on infant formula, 13/11
- 2016: Gainesville Neonatal Clinic, research review, 3/2
Baylor College of Medicine, Houston, Texas, 7/2
- 2017: Danish Society for Pediatric Dieticians, Odense OUH, 8/3
Rush Medical Center, Chicago, 7/8
- 2018: Baoan Maternal and Childrens Hospital, Shenzhen, China, 10/3
- 2019: Sanyuan International Dairy Company, Beijing, 6/11
Baoan Maternal and Childrens Hospital, Shenzhen, China, 7/11
- 2020: ESPGHAN Newcastle International Symposium on NEC in infants, 3-4/12

- 3rd national Maternal-Infant NEOMUNE symposium, Shenzhen, China 4-6/12
- 2021: FASEB meeting on milk bioactives in pediatrics, Velencia, Italy, 21-23/6
- 4th JENS meeting Neonatal society, Athens, Greece, 15-18/9

Visiting scientific positions abroad (> 1 month)

- 1987: Research Fellow, Agriculture, La Trobe University, Australia, 1/9/87-31/4/88
- 1991: Post Doctoral Fellow, Dept. of Physiology, University of Cambridge, UK, 1/1-31/3
- 1991: Post Doctoral Fellow, Dept. of Physiology, University of Cambridge, UK, 1/10-20/12
- 1992: Post Doctoral Fellow, Dept. of Physiology, University of Cambridge, UK, 10/11-20/12
- 1994: Research Fellow, Dept. of Anatomy, Univ. of Adelaide, Australia, 11/2-12/3
- 2004: Honorary Professor, Division of Nutrition, Univ. Hong Kong, 1/9 2004-1/7 2005
- 2018: Honorary Professor, Shenzhen Peoples Hospital, China, 1/2-1/5 2018

External research grants and personal stipends (grant holder, >100.000 DKK):

- 1989: Veterinary & Agricultural Research Council, 3-year project (1.100.000 DKK; "Postnatal development of digestion and absorption in pigs: The effects of colostrum and glucocorticoids")
- 1991: The Wellcome Trust, London, UK (160.000 DKK; "Development of GIT function in the fetal pig", studies at University of Cambridge, UK)
- 1992: NOVO Nordic (60.000 DKK; "Enzymic development of the fetal pig")
- 1993: Veterinary & Agricultural Research Council, 3-year project ("Regulation of gastrointestinal function in prenatal and neonatal pigs" 1.250.000 DKK)
- 1993: NOVO Nordic, research equipment (47.000 DKK; "Glucocorticoid effects of intestinal enzymes in the fetal lamb")
- 1995: Veterinary & Agricultural Research Council, 3-year project (2.100.000 DKK; Maturation of essential organs in prenatal and neonatal mammals)
- 1996: Veterinary & Agricultural Research Council, 1-year project (267.000 DKK; "Small intestinal transport of nutrients in developing pigs and mink")
- 1997: NOVO Nordic (50.000 DKK; "Intestinal absorption of proteins in developing pigs and mink")
- 1999: Veterinary & Agricultural Research Council, 5-year project (5.000.000 DKK; Perinatal nutrition: Unique characteristics of protein digestion and metabolism")
- 1999: Veterinary & Agricultural Research Council, 3-year project (300.000 DKK; "Calf embryo and fetal development"). *Co-investigator* with Poul Hyttel, Torben Greve)
- 2000: National Institutes of Health (NIH), USA (50.000 USD). Effect of GLP-2 on the developing gastrointestinal tract (*Co-investigator* with D.G. Burrin, Houston, USA)
- 2001: Veterinary & Agricultural Research Council, 2-years (160.000 DKK; "Weaning problems: Pigs as models for infants"). *Co-investigator* with Kim Fl. Michaelsen.
- 2001: Iams Inc. International, 5-year project (100.000 EURO, "Nutrition of the compromised gut in companion animals").
- 2002: Danish Ministry of Food and Agriculture, 4 year project (2.000.000 DKK; Diarrhea and the compromised small intestine in pigs")
- 2003: Danish Ministry of Food and Agriculture. 2 year FELFO project (500.000 DKK; ("Casein and whey in growth and development of children and pigs").
- 2003: Chr. Hansen A/S. 2 year project (450.000 DKK; Use of probiotic strains of Bacillus to improve gut health and nutrition").
- 2004: Danish Research Agency. 3 year project (1.350.000 DKK; "Gastrointestinal health and nutrition-microbe interactions during early life").
- 2004: Danish Research Agency. 2 year project (250.000 DKK; "Milk growth factors and their receptors in the developing intestine").
- 2005: The Strategic Research Council: 4 year project (8.5 mill DKK: "Fiber and Flora to Compromized Newborns").
- 2006: Willum Kann Rasmussen Scholarship for foreign Visiting Professors (250.000 DKK, Profs. Randal Buddington/Douglas Burrin US).

- 2006: The Research Council for Health and Disease: 4 year project (1.260.000 DKK: "Milk and microflora to minimize gut disease in newborns").
- 2006: FOOD research school and Danish Research Agency, 3 year PhD project ("Immunity effects of milk prebiotic fibers", 1.350.000 DKK).
- 2006: ARLA Foods, 2 year project (1.6 mill DKK, "Immunomodulatory effects of milk components")
- 2006: Chr Hansen A/S, 2 year project (1.6 mill DKK, "Probiotics in Early Life").
- 2007: Danish Meat/Bacon Council, 3 y project (0.5 mill DKK, Colostrum in gut protection)
- 2007: BioFiber Damino A/S, 3 y project (0.6 mill. DKK, Colostrum in gut protection)
- 2007: The Strategic Research Council: 4 year project (12.2 mill DKK: "Colostrum for gut protection and recovery").
- 2009: UNIK project, 3 year project, University of Copenhagen (4 mill DKK "Pig models to study nutrition-mediated gut-brain peptide signaling")
- 2010: UNIK infrastucture funds, pigs models (1.2 mio DKK)
- 2010: Childrens Cancer Foundation (0.12 mio, "Pig Models of Chemotherapy Mucositis")
- 2010: Fresenius Kabi (0.15 mio, "Intravenous Nutrition Models in Pigs")
- 2010: Industrial PhD scholarship, Danish Research Councils/ARLA Foods (2.0 mio DKK)
- 2010: Industrial PhD scholarship, Danish Research Councils/GUBRA (2.0 mio DKK)
- 2010: Danish Dairy Board ("Milk Bioactives for Early Life", 2.5 mio DKK)
- 2011: Network programme for DK-China-India studies, 0,35 mio DKK
- 2010: ARLA Foods ("Milk protein bioactives" 0.4 + 0.3 mio DKK)
- 2010: ARLA Foods ("Humanization of Milk Formula" 4.5 mio DKK)
- 2011: Nycomed, Germany ("GLP-2 in preterm Newborn after SBS"), 3.0 mio DKK
- 2012: Glycom/Nestlé, Switzerland (Milk oligosaccharides in Newborns"), 3.0 mio DKK
- 2012: EU FP7 ("Early Nutrition – reduced protein load for infants"), 1.8 mio DKK
- 2012: Danish Strategic Research Council: NEOMUNE (35.5 mio DKK).
- 2013: ARLA foods amba: Milk bioactives for newborns (NEOMUNE: 2.5 mio DKK)
- 2013: ARLA foods Ingredients: Milk bioactives for brain (NEOMUNE: 4.0 mio DKK)
- 2013: BioFiber Damino: Colostrum for newborns (NEOMUNE: 1.0 mio DKK)
- 2013: GlaxoSmithKline: iBAT to prevent NEC in newborns (2.8 mio DKK, , co-PI)
- 2013: Danone Baby Nutrition: Milk bioactives for brain (NEOMUNE: 3.8 mio DKK)
- 2014: ARLA Foods Ingredients: Whey Protein Processing (1.5 mio DKK)
- 2014: Medela: Human milk for newborns (2.1 mio DKK, co-PI)
- 2014: ARLA Foods Ingredients: Whey Protein Processing (1.5 mio DKK)
- 2014: Danish Dairy Board ("Human/Bovine Milk Bioactives", 1.7 mio DKK, co-PI)
- 2015: Mead Nutrition Nutrition ("Gut development, milk oligosaccharides", 0.5 mio DKK)
- 2015: Carlsberg Foundation ("Food, Health & Philosophy in East & West", 0.5 mio DKK)
- 2015: ARLA Foods ("Food, Health & Philosophy in East & West", 1.0 mio DKK)
- 2015: Fresenius Kabi ("Parenteral lipids for preterm infants", 1.8 mio DKK)
- 2016: AFH Centre DK (Perinatal Inflammation and Milk Bioactives", 4.5 mio DKK)
- 2016: Danish Dairy Board ("UHT treatment of Milk", 2.3 mio DKK, co-PI)
- 2016: Innovation Foundation Denmark ("Infant Brain", 4.6 mio DKK, co-PI)
- 2014: China Scholarship Council (2 PhDs, 3 yrs, 3.0 mio DKK, PI)
- 2016: China/Guangdong/Shenzhen Scholarship Council (3 PhD, 3 yrs, 4.5 mio DKK, PI)
- 2017: Innovation Foundation Denmark ("NEOCOL", 19 mio DKK, PI)
- 2017: Biofiber Damino Denmark ("NEOCOL", 2.6 mio DKK, PI)
- 2017: ARLA Foods Ingredients ("Bioactive Milk Collaboration", 7.5 mio DKK, PI)
- 2018: GUDP ("Heat treatment effects in formula", 4.5 mio DKK, co-PI)
- 2019: SHIRE, USA ("IGF-1 for preterm newborns", 10.0 mio DKK, PI)
- 2020: SHIRE/Takeda, USA ("IGF-1 for preterm newborns", 12.0 mio DKK, PI)
- 2021: Takeda, USA ("Intra-alpha-inhibitor-protein in NEC and sepsis, 7 mio DKK, PI)

Internal University of Copenhagen funding after application (>100.000 DKK):

- 1998: Full PhD scholarship, Yvette Miatta Petersen, 1.6 mio DKK

- 2000: Full RAPH PhD scholarship, Thomas Thymann, 1.6 mio DKK
- 2001: 2/3 FOOD PhD scholarship, Charlotte Bjørnvad, 1.2 mio DKK
- 2002: 1/3 FOBI PhD scholarship, Jayda Siggers, 0.5 mio DKK
- 2006: 1/3 FOOD scholarship, Malene Cilieborg, 0.6 mio DKK
- 2007: Full FOOD PhD scholarship, Andreas Vegge, 2.0 mio DKK
- 2008: Full FOOD PhD scholarship, Mette Østergaard, 2.0 mio DKK
- 2008: Full FOOD PhD scholarship, Michael Ladegaard Jensen, 2.0 mio DKK
- 2008: 1/3 FOOD PhD scholarship, Pernille Lund, 0.6 mio DKK
- 2008: 1/3 FOOD PhD scholarship, Peter Pontoppidan, 0.6 mio DKK
- 2009: UCPH Infrastructure funds for office facilities, 0.7 mio DKK
- 2009: SHARE post doc (0.7 mill DKK, "Nutritional modulation after gut compromise")
- 2010: Full FOOD PhD scholarship, Mikkel Lykke Jensen, 2.0 mio DKK
- 2011: Full FOOD PhD scholarship, Rene Liang Shen (bonus stipend), 2.0 mio DKK
- 2010: LMC Strategic Initiative ("Milk Protein Chemistry", 0.15 mio. DKK)
- 2010: UNIK overhead funds for infrastructure (1.2 mio + 1.0 mio DKK)
- 2011: Full FOOD PhD scholarship, NN (bonus stipend), 2.0 mio DKK
- 2012: LMC Strategic Initiative ("China-India Network", 0.28 mio. DKK)
- 2015: 5 fully-financed PhD scholarships (2015-20, Fac. Health Science, 8.0 mio DKK)
- 2016: 4 fully-financed PhD scholarships (2017-19, China Scholarship Council)
- 2020: 2 fully-financed PhD scholarships (2021-23, China Scholarship Council)
- 2021: 1 fully-financed PhD scholarships (2021-23, China Scholarship Council)

Membership of scientific societies (last 3 yrs only):

- American Physiological Society (APS)
- Danish Society for Reproduction and Fetal Development (DSRF)
- Eur Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN)
- Danish Soc for Pediatric Gastroenterology, Hepatology and Nutrition (DSPGHAN)

Departmental, institutional or national administrative tasks (last 3 yrs only):

- Member, working environment group ("Kom godt i mål - APV og psykisk arbejdsmiljø"), 2006
- Head, Preventive Nutrition Group (staff 25) at IHE, UCPH, 2005-2006
- Head, Clinical and Experimental Nutrition Group (staff 12-15) at IHE, UCPH, 2007-
- Member, IHE UCPH leadership group, 2005-
- Member, IHE personnel interaction committee (LSU), 2005-
- Member, UCPH working group Experimental Animal Facilities (CAMPUS Stalde), 2006
- Member, UCPH Strategic Research Initiative (BEST) steering Committee (BEST), 2006
- Congress Committee, LMC Congress, Denmark, 2006.
- Chair, Steering committee of CRAFT (Reproduction & Fetal Development Centre), 2006-
- Member, University Committee regarding Infrastructure priority 2006
- Member, LMC Innovation Committee
- Member, Univ. Copenhagen Exp. Animal Facility Board (CAMPUS Stald Bestyrelsen), 2009
- Member, UCPH Exp. Animal Facilities Board (CAMPUS Stalde Brugerudvalg), 2009
- Member, IKVH Departmental Leadership Group, 2015-
- Member, IVH Departmental Leadership Group, 2017-20
- Research Group Leader: Pediatric Clinical Studies, Comparative Pediatrics & Nutrition 2020-

Patents

Eur. Patent no: 2858653 (2016 – Per Sangild sole inventor): Bovine Colostrum as Minimal Enteral Nutrition for Preterm Infants. Granted.

List of publications

Original full-length publications with international peer review:

1. **Sangild**, P.T., Hilsted,L. and Cranwell,P.D. (1989).The effect of ACTH treatment on gastric acid secretion and gastric regulatory peptides in young pigs. *Acta Veterinaria Scandinavica* 86, 64-67.
2. **Sangild**, P.T., Foltmann,B. and Cranwell,P.D. (1989)..Development of the porcine gastric proteases. The effects of age, ACTH-treatment and early weaning. *Acta Veterinaria Scandinavica* 86, 60-63.
3. **Sangild**, P.T., Foltmann,B. and Cranwell,P.D. (1991). Development of gastric proteases in fetal pigs and pigs from birth to thirty six days of age. The effect of adrenocorticotropin (ACTH). *Journal of Developmental Physiology* 16, 229-238.
4. **Sangild**, P.T., Cranwell,P.D. and Hilsted,L. (1992). Ontogeny of gastric function in the pig: Acid secretion and the synthesis and secretion of gastrin. *Biology of the Neonate* 62, 363-372.
5. **Sangild**, P.T., Diernæs,L., Christiansen,I.J. and Skadhauge,E. (1993). Intestinal transport of sodium, glucose and immunoglobulin in neonatal pigs. Effect of glucocorticoids. *Experimental Physiology*, 485-497.
6. **Sangild**, P.T., Fowden,A.L. and Silver,M. (1993). Effect of fluid ingestion on gastrin secretion in the fetal pig. *Reproduction in Domestic Animals* 28, 213-214.
7. **Sangild**, P.T., Silver,M., Fowden,A.L., Turvey,A. and Foltman,B. (1994). Adrenocortical stimulation of stomach development in the prenatal pig. *Biology of the Neonate* 65, 378-389.
8. **Sangild**, P.T., Hilsted,L., Nexø,E., Fowden,A.L. and Silver,M. (1994). Secretion of acid, gastrin and cobalamin-binding proteins by the fetal pig stomach: Developmental regulation by cortisol. *Experimental Physiology* 79, 135-146.
9. **Sangild**, P.T., Hilsted,L., Nexø,E., Fowden,A.L. and Silver,M. (1995). Vaginal birth versus elective caesarean section: effects on gastric function in the neonate. *Experimental Physiology* 80, 147-157.
10. **Sangild**, P.T., Fowden,A.L., Sjöström,H., Norén, O. and Silver,M. (1995). The prenatal development and glucocorticoid control of brush-border hydrolases in the pig small intestine. *Pediatric Research* 37, 207-212.
11. **Sangild**, P.T. (1995). Stimulation of gastric proteases in the neonatal pig by a rise in adrenocortical secretion at parturition. *Reproduction, Fertility and Development* 7, 1293-1298.
12. Elnif, J. and **Sangild**,P.T. (1995). The role of glucocorticoids in the growth of the digestive tract in mink (*Mustela vison*). *Comparative Biochemistry and Physiology* 115A, 37-42.
13. Foltmann,B., Harlow,K., Houen,G. Nielsen,P.K. & **Sangild**, P. (1995). Comparative investigations on pig gastric proteases and their zymogens. *Advances in Experimental Medicine and Biology* 362, 41-51.
14. **Sangild**, P.T. & Elnif, J. (1996). Intestinal hydrolytic activity in young mink (*Mustela vison*) develops slowly postnatally and exhibits late sensitivity to glucocorticoids. *Journal of Nutrition* 126, 2061-2068.
15. **Sangild**, P.T., Silver, M., Schmidt, M. & Fowden, A.L. (1996). The perinatal pig in pediatric gastroenterology. In: *Advances in Swine in Biomedical Research* (M.E. Tumbleson & L. Schnook, eds.). Plenum Press, New York. Ch. 65, pp. 745-756.
16. **Sangild**, P.T. Holtug, K., Diernæs, L., Schmidt, M. & Skadhauge, E. (1997). Birth and prematurity influence intestinal function in the newborn pig. *Comparative Biochemistry and Physiology* 118A, 359-362.
17. Trahair, J.F. & **Sangild**, P.T. (1997). Systemic and luminal influences on the perinatal development of the gut. *Equine Veterinary Journal* 24, 40-50.
18. **Sangild**, P.T., Trahair, J.F., Loftager, M.K. & Fowden, A.L. (1999). Intestinal macromolecule absorption in the fetal pig after infusion of colostrum in utero. *Pediatric Research* 45, 595-602.
19. **Sangild**, P.T., Fowden, A.L. & Trahair, J.F. (2000). How does the fetal gastrointestinal tract develop in preparation for enteral nutrition after birth? *Livestock Production Science* 66: 141-150.
20. **Sangild**, P.T., Schmidt, M., Jacobsen, H., Fowden, A.L., Forhead, A., Avery, B. & Greve, T. (2000). Blood chemistry, nutrient uptake and organ weights of fetal and newborn calves derived from in vitro produced embryos. *Biology of Reproduction* 62, 1495-1504.
21. Jacobsen H, Schmidt M, Holm P, **Sangild** PT, Greve T, Callesen H (2000). Ease of calving, blood chemistry, insulin and bovine growth hormone of newborn calves derived from embryos produced in vitro in culture systems with serum and co-culture or with PVA. *Theriogenology* 54: 147-158.

22. Jacobsen H, Schmidt M, Holm P, **Sangild** PT, Vajta G, Greve T, Callesen H (2000). Body dimensions and birth and organ weights of calves derived from in vitro produced embryos cultured with or without serum and oviduct epithelium cells. *Theriogenology* 53:1761-1769.
23. Trahair, J.F. & **Sangild**, P.T. (2000). Fetal organ growth in response to infusion of amniotic fluid, colostrum, milk, or gastrin-releasing peptide; a study in fetal sheep. *Reproduction, Fertility and Development* 12, 87-95.
24. Buddington, R.K., Malo, C., **Sangild**, P.T. & Elnif, J. (2000). Intestinal transport of monosaccharides and amino acids during postnatal development of mink. *American Journal of Physiology* 279, 2287-2296.
25. Burrin, D.G., Stoll, B., Jiang, R., Petersen, Y., Elnif, J., Buddington, R.K., Schmidt, M., Holst, J.J., Hartmann, B. & **Sangild**, P.T. (2000). GLP-2 stimulates intestinal growth in premature TPN-fed pigs by suppressing proteolysis and apoptosis. *American Journal of Physiology* 279, 1249-1256.
26. Buddington, R.K., Elnif, J., Puchal-Gardiner, A.A. & **Sangild**, P.T. (2001). Intestinal apical amino acid absorption during development of the pig. *American Journal of Physiology* 280, R241-R247.
27. Burrin, D.G., Stoll, B., Petersen, Y. & **Sangild**, P.T. (2001). Glucagon-Like Peptide 2: Early development of potent intestinal trophic signal. *Journal of Nutrition* 131, 709-712.
28. Petersen, Y. M., Burrin, D. G. & **Sangild**, P. T. (2001). GLP-2 has differential effects on small intestine growth and function in fetal and neonatal pigs. *American Journal of Physiology* 281, R1986-1993.
29. Jensen, A.R., Elnif, J., Burrin, D.G. & **Sangild**, P.T. (2001). Development of intestinal immunoglobulin absorption and enzyme activity in neonatal pigs is diet-dependent *Journal of Nutrition* 131, 3259-3265.
30. Jakobsen, H., **Sangild**, P.T., Schmidt, M., Holm, P., Greve, T. & Callesen, H. (2002). Macromolecule absorption and cortisol secretion in newborn calves derived from in vitro produced embryos. *Animal Reproduction Science* 70, 1-11.
31. **Sangild**, P.T., Schmidt, M., Elnif, J., C.R. Bjørnvad & Buddington, R.K. (2002). Prenatal development of the gastrointestinal tract in pigs and the effect of fetal gut obstruction. *Pediatric Research* 52 (3) 416-424.
32. **Sangild**, P.T., Petersen, Y.M., Schmidt, M., Elnif, J., Petersen, T.K., Buddington, R.K., Michaelsen, K.F., Greisen, G., and Burrin, D.G. (2002). Preterm birth affects the gastrointestinal responses to parenteral and enteral nutrition in the newborn pig. *Journal of Nutrition* 132, 2673-2681.
33. Petersen, Y.M., Schmidt, M., Elnif, E. & **Sangild**, P.T. (2002). Glucagon Like Peptide 2 enhances maltase-glucoamylase and sucrase-isomaltase gene expression and activity in parenterally-fed premature neonatal pigs. *Pediatric Research* 52, (4) 498-503.
34. Banga-Mboko, H., Sulon, J., Closset, J., Remy, B., Youssao, I., De Sousa, N.M., El Amiri, B., **Sangild**, P.T., Maes, D. & Beckers, J.F. (2003). An improved radioimmunoassay for measurement of pepsinogen in porcine blood samples. *The Veterinary Journal* 165, 288-295.
35. Petersen, Y.M., Hartmann, B., Holst, J.J., Le Huerou-Luron, I., Bjørnvad, C.R. & **Sangild**, P.T. (2003). Introduction of enteral food increases plasma GLP-2 and decreases GLP-2 receptor mRNA abundance during pig development. *Journal of Nutrition* 133, 1781-1786.
36. **Sangild**, P.T. (2003). Uptake of passive immunity by the compromised newborn animal. *Acta Veterinaria Scandinavica* 98, Suppl., 105-122.
37. Banga-Mboko, H., Holtz, W., Maes, D. Sohnrey, B., Youssao, I., El Amiri, B., **Sangild**, P.T., & Beckers, J.F. (2003). Blood serum pepsinogen and progesterone concentrations during pregnancy and lactation in sows. *Journal of Animal and Veterinary Advances* 2, 170-175.
38. Banga-Mboko, H., Tamboura, H., Maes, D., Traore, H., **Sangild**, P.T., El Amiri, B., Bayala, B. & Beckers, J.F. (2003). Survey of gastric lesions and blood pepsinogen levels in Burkina Faso pigs. *Veterinary Research Communications* 27, 595-602.
39. Burrin, D.G., Guan, X., Stoll, B., Petersen, Y.M. & **Sangild**, P.T. (2003). Glucagon-like Peptide 2: A key link between nutrition and intestinal adaptation. *Journal of Nutrition* 133, 3712-3716.
40. Mei, J. Zhang, Y., King, D., **Sangild**, P.T. & Xu, R.J. (2003). Distribution and developmental changes of transforming growth factor β receptors in the gastrointestinal tract of pigs. *Journal of Animal and Veterinary Advances* 3, 89-106.
41. Schmidt, M., **Sangild**, P.T., Jacobsen, H. & Greve, T. (2004). Fetal catheterization in the cow. *Animal Reproduction Science* 80, 193-200.
42. Schmidt, M., **Sangild**, P.T., Blum, J., Andersen, J.B. & Greve, T. (2004). Glucocorticoid and ACTH administration improves survival and organ maturation in premature calves. *Theriogenology* 61, 1729-1744.
43. **Sangild**, P.T. & Xu, R.J. (2004). Colostrum. In: *Encyclopedia of Animal Science* (WG Pond and AW Bell, eds.) New York, Marcel Dekker, pp. 1-3.
44. Bjornvad CR, Elnif J, **Sangild** PT. (2004). Short-term fasting induces intra-hepatic lipid accumulation and decreases intestinal mass without reduced brush-border enzyme activity in mink (*Mustela vison*) small intestine. *Journal of Comparative Physiology B* 174, 625-632.

45. Bjornvad CR, Schmidt M, Petersen YM, Jensen SK, Offenbergh H, Elnif J, **Sangild** PT. (2005). Preterm birth makes the immature intestine sensitive to feeding-induced intestinal atrophy. *American Journal of Physiology* 289, R1212-R1222.
46. Pedersen HG, Schmidt M, **Sangild** PT, Strobeck L, Vajta G, Callesen H, Greve T. (2005). Clinical experience with embryos produced by handmade cloning: work in progress. *Molecular and Cellular Endocrinology* 234, 137-143.
47. Marion, J., Petersen, Y.M., Rome, V., Francoise, T., **Sangild**, P.T., LeDividich, J. & LeHourou-Luron, I. (2005). Premature weaning stimulates intestinal brush border enzymes in piglets mainly at the posttranscriptional level. *Journal of Pediatric Gastroenterology and Nutrition* 41, 401-410.
48. Oste, M., Van Ginneken, C., Van Haver, E., Bjornvad, C.R., Thymann, T. & **Sangild**, P.T. (2005). The intestinal trophic response to enteral food is reduced in parenterally-fed preterm pigs but is associated with increased and number of nitrergic neurons. *Journal of Nutrition* 135, 2657-2663.
49. Elnif, J., Buddington, R.K., Hansen, N.E. & **Sangild**, P.T. (2006). Cortisol increases the activities of intestinal apical membrane hydrolases and nutrient transporters before weaning in mink (*Mustela vison*). *Journal of Comparative Physiology* 176, 233-241.
50. **Sangild**, P.T., Siggers, R.H., Schmidt, M., Elnif, J., Bjornvad, C., Thymann, T., Groendahl, M.L., Hansen, A.K., Jensen, S.K., Boye, M., Moelbak, L., Buddington, R.K., Holst, J.J., Burrin, D.G. (2006). Diet and colonization-dependent intestinal dysfunction predisposes to necrotizing enterocolitis in preterm pigs. *Gastroenterology* 130, 2776-2792.
51. **Sangild**, P.T., Tappenden, K.A., Malo, C., Petersen, Y.M., Elnif, J., Bartholome, A.L. & Buddington, R.K. (2006). Glucagon-Like Peptide-2 stimulates intestinal nutrient absorption in parenterally-fed newborn pigs. *Journal of Pediatric Gastroenterology and Nutrition* 43, 160-167.
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