

Curriculum Vitae

OLE H. PETERSEN CBE ML FRS MRC Professor

Chair and Director of the Cardiff School of Biosciences
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Brief Overview

Chair and Director of Cardiff University's School of Biosciences and Medical Research Council (**MRC**) Professor, leading an MRC-supported research group working on Ca²⁺ signaling at the Cardiff School of Biosciences.

Pioneered single channel current recording in epithelial cells, characterizing Ca²⁺-activated ion channels (*ISI Citation Classic*: Petersen & Maruyama **Nature** 1984). Discovered physiological local Ca²⁺ signalling events in epithelial cells (Thorn et al **Cell** 1993), messenger-mediated Ca²⁺ release from the nuclear envelope (Gerasimenko et al **Cell** 1995) and intracellular Ca²⁺ tunnels (Mogami et al **Cell** 1997). Recently demonstrated the crucial role of IP₃ receptors in the initiation of alcohol-related pancreatitis (Gerasimenko et al **PNAS** 2009). Received Nordic Insulin Foundation's Jacobaeus Prize (1994) and Czech Academy of Sciences' Purkyně Medal (2003). Foreign Member of Royal Danish Academy of Sciences & Letters (1988), Founding Member of Academia Europaea (1988), Founding Fellow of the Academy of Medical Sciences (FMedSci) (1998), Fellow of The Royal Society (**FRS**) (2000), Fellow of the Royal College of Physicians (FRCP) (2001) and Honorary Member of the Hungarian Academy of Sciences (2004). Member of the German National Academy of Sciences Leopoldina (**ML**) (2010). Appointed Commander of the Order of the British Empire (**CBE**) by Queen Elizabeth II for 'Services to Science' (2008).

Recently appointed Chair of the Higher Education Funding Council for England's (HEFCE) Biological Sciences Panel in the UK Government's new Research Excellence Framework (**REF 2014**). Chair of the European Research Council's (**ERC**) Starting Grant Panel for Physiology, Pathophysiology and Endocrinology (2009 -). Member of The Royal Society/Wolfson Research Merit Awards Committee (2008 -). Former Vice-President of The Royal Society (2005-2006) and in this period Chair of the Royal Society's Working Group responding to the UK Government's plan for a new type of national research assessment. Chair of Academia Europaea's Nominations Committee (2004 -), with overall responsibility for the competitive annual elections to membership, and also Member of the Academy's Executive Board and Council.

Since 2003, Chair of the European Editorial Committee (European Executive Editor) of the American Physiological Society's flagship journal **Physiological Reviews**, with responsibility for the European component (~50%) of the journal's output (**Physiological Reviews** currently has an Impact Factor [IF] of 37.726 and is ranked as no. 6 of ALL scientific journals with respect to IF).

Ole H Petersen - CV

Nationality

British

Present position

Chair and Director of Cardiff University's School of Biosciences (2010 -)

Medical Research Council Professor at the Cardiff School of Biosciences (2010 -)

Education/Degrees

Medical student, University of Copenhagen 1961 - 1969

Cand. Med. (Laudabilis) (MB ChB) University of Copenhagen, 1969

Authorized Medical Practitioner (Danish State Health Authority) 1969

Dr. med. (MD) University of Copenhagen, 1972, for thesis "Acetylcholine-induced ion transports involved in the formation of saliva"

(Thesis published as Supplement 381 in *Acta physiol scand* [now *Acta Physiologica*] 1972)

Posts held

Lecturer (Assistant Professor), Institute of Medical Physiology C, University of Copenhagen, 1969-73

Wellcome-Carlsberg Travelling Research Fellow, Department of Pharmacology, University of Cambridge, UK, 1971-72 (on leave of absence from University of Copenhagen)

Senior Lecturer (Associate Professor), Institute of Medical Physiology C, University of Copenhagen, Denmark, 1973-78

Symers Professor of Physiology and Chairman, Department of Physiology, University of Dundee, Scotland, 1975-81 (on leave of absence from University of Copenhagen, 1975-78).

George Holt Professor of Physiology, University of Liverpool, England, 1981- 2009

Chairman, Department of Physiology, University of Liverpool, 1981-1998

Medical Research Council (MRC) Professor at University of Liverpool, 1998 – 2009

Chair and Director of Cardiff University's School of Biosciences (2010 -)

MRC Professor at the Cardiff School of Biosciences (2010 -)

Principal Grant Support:

Continuous MRC Programme Grant (Principal Investigator) linked to MRC Non-Clinical Research Professorship since 1998. Funding in current grant period (2008 – 2012): UK£ 1.64 million.

Honours and Awards (selection)

Honorary Professor at College of Medicine, Jinan University, Guanzhou, China (2011)

Elected Member of the German National Academy of Sciences Leopoldina (2010)

Lifetime Achievement Award from the European Pancreatic Club (2010)

Festschrift for Ole Petersen (based on Invited Lectures at International Symposium on '*Frontiers in Physiology*' held at the Royal Danish Academy of Sciences and Letters in Copenhagen, May 2008): ***Acta Physiologica***, 195 (1), 1-196, 2009; Laudation by Professor Peter Bie, President of the Scandinavian Physiological Society on page 1. (A 25 min interview (video podcast) with Ole Petersen is freely accessible via ***Acta Physiologica***'s website (<http://www.wiley.com/bw/podcast/apha.asp>)).

Queen Elizabeth II's New Year Honours List 2008: Appointed Commander of the Order of the British Empire (CBE) for 'Services to Science'

President of The Physiological Society (UK), 2006 - 2008

Vice-President of The Royal Society (UK), 2005 – 2006

Honorary Member of The Hungarian Academy of Sciences (2004)

J.E. Purkyně Honorary Medal for 'Merit in the Biological Sciences' from The Academy of Sciences of the Czech Republic (2003)

Honorary Member of The Hungarian Physiological Society (2002)

Fellow of The Royal College of Physicians (FRCP) (London) (2001)

Fellow of The Royal Society of London (FRS) (2000)

Medical Research Council (MRC) Professor (1998)

Fellow of the Academy of Medical Sciences (UK) (FMedSci) (Founding Fellow - 1998)

Nordic Insulin Foundation's H.C. Jacobaeus Prize & Lecture (1994, Royal Danish Academy of Sciences and Letters, Copenhagen)

Honorary Member of The Polish Physiological Society and Czubalsky Medal (1993)

Foreign Member of The Royal Danish Academy of Sciences & Letters (1988)

Member of Academia Europaea (Foundation Member) (1988)

Brinch's Prize for 'Important and Original Research on Secretory Processes in Exocrine Glands' (1975, Danish Technical University)

Keynote Lectures (selection)

Honorary Professorship Award Lecture, College of Medicine, Jinan University, Guanzhou, China, 13th January 2011

Keynote Lecture (Lifetime Achievement Award) at the European Pancreatic Club's Annual Meeting, Stockholm, Sweden, 17th June 2010

State-of-the-Art Lecture at Symposium on 'Imaging of Intracellular Messengers' at 14th International Congress of Endocrinology, Kyoto, Japan, 28th March 2010

Keynote Lecture at Annual Meeting of Korean Physiological Society, Gagneung, South Korea, 30th October 2009

AGA (American Gastroenterological Association) State-of-the-Art Lecture, DDW (Digestive Diseases Week), Chicago, USA, 31st May 2009.
(Interview with Ole Petersen published in the DDW (June 2009) issue of *Pancreatology*: Fernandez-Zapico ME (2009) *Pancreatology* 9, 323-326.

Speaker at Opening Ceremony of Beijing Joint Conference of Physiological Sciences 2008. Invited Lecture in Symposium 1 on Calcium Signaling, Beijing, China, 20th October 2008

Keynote Lecture at 4th Cuvian Symposium, University of Sao Paulo, Brazil, 25th May 2008
(Published in *Brazilian Journal of Medical and Biological Research* 42, 9-16, 2009. Open access: <http://www.scielo.br/pdf/bjmr/v42n1/7608.pdf>).

Opening Plenary Lecture at Joint Meeting of FEPS, The Physiological Society (UK) and the Slovak Physiological Society, Bratislava, Slovakia, September 2007

Plenary Keynote Lecture at XXXIV Congress of the Spanish Society of Physiological Sciences, Valladolid, Spain, July 2007

The Plenary Keynote Lecture, 82nd Annual Meeting of the Physiological Society of Japan, Sendai, May 2005
(Published in *Cell Calcium* 38, 171-200, 2005)

The First John Young Memorial Lecture (The Keynote Lecture) at Gordon Research Conference on Salivary Glands and Exocrine Secretion, Ventura, California, USA, February 2005

The Keynote Lecture, Gordon Research Conference on Calcium Signaling, South Hadley, Massachusetts, USA, July 2003

Dame Honor B. Fell Memorial Lecture (1996, University of Wales School of Medicine, Cardiff)

The Physiological Society's Annual Review Prize Lecture (1991) (delivered at University of Cambridge)
(Published in *Journal of Physiology* 448, 1-51, 1992)

The 13th Halliburton Lecture (1987, King's College, University of London)

Morton I. Grossman Memorial Lecture (1985, Center for Ulcer Research & Education (CURE), University of California, Los Angeles)
(Published in *American Journal of Physiology* 251, G1-G13, 1986)

ISI Citation Classic

Petersen, O.H. Commentary on Petersen and Maruyama, Calcium-activated potassium channels and their role in secretion. *Nature* 307, 693-696, 1984.
Current Contents, Life Sciences vol. 36, no. 48, p.9, 1993

Editorial Work (selection)

Chairman of *Physiological Reviews*' European Editorial Committee (European Executive Editor) [2003 -]. Current Impact Factor: 37.726.

Executive Editor, *Pflügers Archiv – European Journal of Physiology* [1992 -]. Current Impact Factor: 3.526.

Editorial Board, *Physiology* [2010 -]. Current Impact Factor: 7.159

Editorial Board, *Current Biology* [2002 -]. Current Impact Factor: 10.777

Editorial Board, *Journal of Cellular and Molecular Medicine* [2006 -]. Current Impact Factor: 5.114.

Editorial Board, *Cell Calcium* [2001 -]. Current Impact Factor: 4.481.

Membership of International and National (UK) Committees (selection)

The European Research Council (ERC)

Chair of ERC Starting Grant Panel for Physiology, Pathophysiology and Endocrinology [2009 -]

The Higher Education Funding Council for England (HEFCE): Research Assessment Exercise (RAE) 2008 and Research Excellence Framework (REF) 2014

RAE 2008: Member of the National Panel assessing Pre-clinical & Human Biological Sciences.

REF 2014: Chair of the National Panel assessing Biological Sciences

The Royal Society (The UK's National Academy of Science)

Member of Sectional Committee 8 [2011 -], Royal Society/Wolfson Research Merit Awards Committee [2008 -]. Chair of International Panel 8 (Anatomy, Physiology, Pharmacology, Neuroscience, Psychology) [2010 -]. Previously, Chair of Sectional Committee 8 (Anatomy, Physiology and Neurosciences) [2002 - 2004]; Member of Council [2004 - 2006]; Vice-President [2005 - 2006].

Most important activities as Vice-President of The Royal Society:

[A] Chair of The Royal Society's Working Group responding to the UK Government Department for Education and Science's (DfES) consultation on '*The Reform of Higher Education Research Assessment and Funding*'. The response was published as The Royal Society's Policy Document 24/06

Subsequently, ***The Times Higher Education (THE)*** invited Ole Petersen to write a leading opinion article about the use/misuse of citation counting as a way of measuring research performance. "*Citations game is a quick fix but unlikely to deliver*" appeared in ***THE*** on 15th December 2006 (<http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=207184>).

Ole Petersen gave oral evidence in public, on behalf of The Royal Society, to the UK Parliament's House of Commons Education and Skills Committee on 16th May 2007. The full transcript of this evidence session was published in the Education and Skills Committee's Eighth Report of Session 2006-07 (vol.II, HC 285-II, Ev 227-245: <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmeduski/285/285ii.pdf>).

[B] Member of the Working Group set up jointly by The Royal Society and The Academy of Medical Sciences to prepare the response to the UK Government's (Cooksey) Review on the future of UK Health Research Funding

[C] Chair of The Royal Society's Working Group responding to the Research Councils UK (RCUK) consultation on the '*Efficiency and Effectiveness of Peer Review*'. The response was published as The Royal Society's Policy Document 04/07

Academia Europaea (The European Academy)

Member of Council [1998 -] and Executive Board [2008 -]; Chair, Nominations Committee [2004 -]; Previously, Chair, Physiology & Medicine Section [1995 – 2006]; Chair of Selection Committee for appointment of new President of Academia Europaea [2008].

International Union of Physiological Sciences (IUPS)

Secretary General [2001 - 2009]; Ex Officio Member of the Executive Committee and Council; Regular author of IUPS editorials in **Physiology** (published jointly by The American Physiological Society and IUPS); Vice-Chair of the International Scientific Program Committee (ISPC) for the 35th International Congress of Physiological Sciences, San Diego, California, March/April 2005 and Co-Chair of the ISPC for the 36th International Congress of Physiological Sciences, Kyoto, Japan, July/August 2009. Honorary President of the 37th International Congress of Physiological Sciences, Birmingham, UK, July 2013.

Max Planck Society (Germany)

Member of Fachbeirat (Scientific Advisory Board) at Max-Planck-Institute for Biophysics, Frankfurt, Germany [1980 - 1995] and at Max-Planck-Institute for Molecular Physiology, Dortmund, Germany [1995 - 2009].

European Union (EU) Marie Curie Training Network

Member of Strategic Advisory Committee for **Cavnet** (EU Post-Graduate and Post-Doctoral Research Training Network on '*Calcium channels in health and disease*') [2007- 2010].

BioSciences Federation (now Society for Biology)

Member of Council [2004 – 2007]; Chair of Judging Panel for the 2006 BSF Science Communication Award.

Medical Research Council (UK)

Member of Physiological Systems and Diseases Board [1984 - 1988]. Member of Physiological Systems and Clinical Sciences Board [2000 - 2004]. MRC Professor since 1998.

The Physiological Society (UK)

Foreign (International) Secretary [1992 - 1998]; President, Chairman of Council and Member of Executive Committee [2006 - 2008].

Scientific Publications

Quantitative Overview

321 articles listed in ISI's Web of Knowledge (excluding abstracts, proceedings papers, book reviews etc). 14 articles published in **Nature**, 14 in **EMBO J**, 6 in **PNAS**, 5 in **Cell**, 3 in **Annu Rev Physiol** and 2 in **Physiol Rev**. Total citations in scientific literature, *excluding* self-citations: **8214**; **2** articles cited >500 times each, **5** articles cited >300 times, **12** articles cited >200 times and **48**

articles cited >100 times. *h*-index: **69** (data obtained from ISI's Web of Knowledge, 26th February 2011).

Full Publication List (only articles finally accepted in peer-review journals)

2011

*Gerasimenko, J.V., Lur, G., Ferdek, P., Sherwood, M.W., Ebisui, E., Tepikin, A.V., Mikoshiba, K., Petersen, O.H. and Gerasimenko, O.V. (2011) Calmodulin protects against alcohol-induced pancreatic trypsinogen activation elicited via Ca²⁺ release through inositol trisphosphate receptors. *Proc. Natl. Acad. Sci. USA (PNAS)* in press

Petersen, O.H., Gerasimenko, O.V., Tepikin, A.V. & Gerasimenko, J.V. (2011) Aberrant Ca²⁺ signalling through acidic Ca²⁺ stores in pancreatic acinar cells. *Cell Calcium* in press

*Booth, D.M., Murphy, J.A., Mukherjee, R., Awais, M., Neoptolemos, J.P., Gerasimenko, O.V., Tepikin, A.V., Petersen, O.H., Sutton, R. and Criddle, D.N. (2011) Reactive oxygen species induced by bile acid induce apoptosis and protect against necrosis in pancreatic acinar cells. *Gastroenterology* in press

2010

Chvanov, M., Petersen, O.H. & Tepikin, A.V. (2010) Pharmacologically directed cell disposal: labeling damaged cells for phagocytosis as a strategy against pancreatitis. *Molecular Interventions* 10, 80-85.

Verkhatsky, A. & Petersen, O.H. (2010) Bernd Nilius: the bard of ion channels. Congratulations on 65th birthday. *Pflügers Arch.* 460, 691-694.

*Voronina, S.G., Barrow, S.L., Simpson, A.W.M., Gerasimenko, O.V., Da Silva Xavier, G., Rutter, G.A., Petersen, O.H. & Tepikin, A.V. (2010) Dynamic changes in cytosolic and mitochondrial ATP levels in pancreatic acinar cells. *Gastroenterology* 138, 1976-1987.

Walsh, C.M., Chvanov, M., Haynes, L.P., Petersen, O.H., Tepikin, A.V. and Burgoyne, R.D. (2010) Role of phosphoinositides in STIM1 dynamics and store-operated calcium entry. *Biochem. J.* 425, 159-168.

2009

*Criddle, D.N, Booth, D.M., Mukherjee, R., McLaughlin, E., Green, G.M., Sutton, R., Petersen, O.H. & Reeve, J.R. (2009) Cholecystokinin-58 and cholecystokinin-8 exhibit similar actions on calcium signaling, zymogen secretion, and cell fate in murine pancreatic acinar cells. **Am. J. Physiol. G. & L Physiology** 297, G1085-G1092.

*Gerasimenko, J.V., Lur, G., Sherwood, M.W., Ebisui, E., Tepikin, A.V., Mikoshiba, K., Gerasimenko, O.V. & Petersen, O.H. (2009) Pancreatic protease activation by alcohol metabolite depends on Ca²⁺ release via acid store IP₃ receptors. **Proc. Natl. Acad. Sci. USA (PNAS)** 106, 10758-10763.

*Lur, G., Haynes, L.P., Prior, I.A., Gerasimenko, O.V., Feske, S., Petersen, O.H., Burgoyne, R.D. & Tepikin, A.V. (2009) Ribosome-free terminals of rough ER allow formation of STIM1 puncta and segregation of STIM1 from IP₃ receptors. **Curr. Biol.** 19, 1648-1653.

*Baumgartner, H.K., Gerasimenko, J.V., Thorne, C., Ferdek, P., Pozzan, T., Tepikin, A.V., Petersen, O.H., Sutton, R., Watson, A.J.M. & Gerasimenko, O.V. (2009) Calcium elevation in mitochondria is the main Ca²⁺ requirement for mitochondrial permeability transition pore (mPTP) opening. **J. Biol. Chem.** 284, 20796-20803.

Petersen, O.H., Tepikin, A.V., Gerasimenko, J.V., Gerasimenko, O.V., Sutton, R. & Criddle, D.N. (2009) Fatty acids, alcohol and fatty acid ethyl esters: toxic Ca²⁺ signal generation and acute pancreatitis. **Cell Calcium** 45, 634-642.

Petersen, O.H. (2009) Ca²⁺ signaling in pancreatic acinar cells: physiology and pathophysiology. **Brazil. J. Med. Biol. Res.** 42, 9-16 (Plenary Lecture at IVth Miguel R. Covian Symposium on 'New Challenges for Physiologists', University of Sao Paulo).

Walsh, C., Barrow, S., Voronina, S., Chvanov, M., Petersen, O.H. & Tepikin, A (2009) Modulation of calcium signaling by mitochondria. **Biochim. Biophys. Acta** 1787, 1374-1382.

2008

*Petersen, O.H. & Tepikin, A.V. (2008) Polarized calcium signaling in exocrine gland cells. **Annu. Rev. Physiol.** 70, 273-299.

Mukherjee, R., Criddle, D.N., Gukovskaya, A., Pandol, S., Petersen, O.H. & Sutton, R. (2008) Mitochondrial injury in pancreatitis. **Cell Calcium** 44, 14-23.

Chvanov, M., Walsh, C.M., Haynes, L.P., Voronina, S.G., Lur, G., Gerasimenko, O.V., Barraclough, R., Rudland, P.S., Petersen, O.H., Burgoyne, R.D. & Tepikin, A.V. (2008) ATP depletion induces translocation to puncta and formation of STIM1 - ORAI1

clusters: translocation and re-translocation of STIM1 does not require ATP. *Pflügers Arch.* 457, 505-517.

*Murphy, J.A., Criddle, D.N., Sherwood, M., Chvanov, M., Mukherjee, R., McLaughlin, E., Booth, D., Gerasimenko, J.V., Raraty, M.G.T., Ghaneh, P., Neoptolemos, J.P., Gerasimenko, O.V., Tepikin, A.V., Green, G.M., Reeve, J.R. Jr., Petersen, O.H. & Sutton, R. (2008) Direct activation of cytosolic Ca²⁺ signaling and enzyme secretion by cholecystokinin in human pancreatic acinar cells. *Gastroenterology* 135, 632-641. (Editorial: *Gastroenterology* 135, 357-360, 2008)

Barrow, S.L., Voronina, S.G., Da Silva Xavier, G, Chvanov, M.A., Longbottom, R.E., Gerasimenko, O.V., Petersen, O.H., Rutter, G.A., Tepikin, A.V. (2008) ATP depletion inhibits Ca²⁺ release, influx and extrusion in pancreatic acinar cells but not pathological Ca²⁺ responses induced by bile. *Pflügers Arch.* 455, 1025-1029.

Park, M.K., Choi, Y.M., Kang, Y.K. & Petersen, O.H. (2008) The endoplasmic reticulum as an integrator of multiple dendritic events. *Neuroscientist* 14, 68-77.

Petersen, O.H. (2008) Ca²⁺-induced pancreatic cell death: roles of the endoplasmic reticulum, zymogen granules, lysosomes and endosomes. *J. Gastroenterol. Hepatol.* 23 (suppl. 1), S31-S36.

2007

Sherwood, M., Prior, I.A., Voronina, S.G., Barrow, S.L., Woodsmith, J.D., Gerasimenko, O.V., Petersen, O.H. & Tepikin, A.V. (2007) Activation of trypsinogen in large endocytic vacuoles of pancreatic acinar cells. *Proc. Natl. Acad. Sci. USA (PNAS)* 104, 5674-5679.

Voronina, S.G., Sherwood, M., Gerasimenko, O.V., Petersen, O.H., Tepikin, A.V. (2007) Visualizing formation and dynamics of vacuoles in living cells using contrasting dextran – bound indicator: endocytic and non-endocytic vacuoles. *Am. J. Physiol.* (G.I. & Liver) 293, G1333-G1338.

Petersen, O.H. & Verkhatsky, A. (2007) Endoplasmic reticulum calcium tunnels integrate signalling in polarized cells. *Cell Calcium* 42, 373-378.

Criddle, D.N., McLaughlin, E., Murphy, J.A., Petersen, O.H., Sutton, R. (2007) The pancreas misled: signals to pancreatitis. *Pancreatology* 7, 436-446.

Criddle D.N., Gerasimenko, J., Baumgartner, H.K., Jaffar, M., Voronina, S.G., Sutton, R., Petersen, O.H. & Gerasimenko, O.V. (2007) Calcium signalling and pancreatic cell death: apoptosis or necrosis? *Cell Death Differ.* 14, 1285-1294.

Nicotera, P, Petersen, O.H., Melino, G. and Verkhatsky, A. (2007) Janus a god with two faces: death and survival utilise same mechanisms conserved by evolution. **Cell Death Differ.** 14, 1235-1236.

Baumgartner, H.K., Gerasimenko, J.V., Thorne, C., Ashurst, L.H., Barrow, S.L., Chvanov, M.A., Gillies, S., Criddle, D.N., Tepikin, A.V., Petersen, O.H., Sutton, R., Watson, A.J.M. & Gerasimenko, O.V. (2007) Caspase-8 – mediated apoptosis induced by oxidative stress is independent of the intrinsic pathway and dependent on cathepsins. **Am. J. Physiol.** (G-I & Liver) 293, G296-G307.

Petersen, O.H. (2007) **Lecture Notes: Human Physiology**, 5th edition, Blackwell, Oxford, pp. 1 – 650.

2006

Criddle, D., Murphy, J., Fistetto, G., Barrow, S., Tepikin, A.V., Neoptolemos, J.P., Sutton, R. & Petersen, O.H. (2006) Fatty acid ethyl esters cause pancreatic calcium toxicity via inositol trisphosphate receptors and loss of ATP synthesis. **Gastroenterology** 130, 781-793. (Editorial: **Gastroenterology** 130, 992-995).

Criddle, D.N., Gillies, S., Baumgartner-Wilson, H.K., Jaffar, M., Chinje, E.C., Passmore, S., Chvanov, M., Barrow, S., Gerasimenko, O.V., Tepikin, A.V., Sutton, R. & Petersen, O.H. (2006) Menadione-induced reactive oxygen species generation via redox cycling promotes apoptosis of murine pancreatic acinar cells. **J. Biol. Chem.** 281, 40485-40492.

Verkhatsky, A., Krishtal, O.A. and Petersen O.H. (2006) From Galvani to patch clamp: the development of electrophysiology. **Pflügers Arch.-Eur. J. Physiol.** 453, 233-248.

Petersen, O. H. and Sutton, R. (2006) Ca²⁺ signalling and pancreatitis: effects of alcohol, bile and coffee. **Trends Pharmacol. Sci. (TIPS)** 27, 113-120.

Criddle, D.N., Sutton, R. and Petersen, O.H. (2006) Role of Ca²⁺ in pancreatic cell death induced by alcohol metabolites. **J. Gastroenterol. Hepatol.** 21, S14-S17.

Petersen, O.H., Sutton, R. And Criddle, D.N. (2006) Failure of calcium microdomain generation and pathological consequences. **Cell Calcium** 40, 593-600.

Chvanov, M., Gerasimenko O.V., Petersen, O.H. & Tepikin, A.V. (2006) Calcium-dependent release of NO from intracellular S-nitrosothiols. **EMBO J.** 25, 3024-3032.

Menteyne, A., Burdakov, A., Charpentier, G., Petersen, O.H. and Cancela, J.M. (2006) Generation of specific Ca²⁺ signals from Ca²⁺ stores and endocytosis by differential coupling to messengers. **Current Biology** 16, 1931-1937.

Gerasimenko, J.V., Flowerdew, S.E., Voronina, S.G., Sukhomlin, T.K., Tepikin, A.V., Petersen, O.H. & Gerasimenko, O.V. (2006) Bile acids induce Ca^{2+} release from both the ER and acidic intracellular calcium stores through activation of IP_3Rs and RyRs . **J. Biol. Chem.** 281, 40154-40163.

Gerasimenko, J.V., Sherwood, M., Tepikin, A.V., Petersen, O.H. & Gerasimenko, O.V. (2006) NAADP, cADPR and IP_3 all release Ca^{2+} from the endoplasmic reticulum and an acidic store in the secretory granule area. **J. Cell Sci.** 119, 226-238.

2005

Petersen, O.H., Michalak, M. and Verkhatsky, A. (2005) Calcium signalling: Past, present and future. **Cell Calcium** 38, 161-169.

Petersen, O.H. (2005) Ca^{2+} signalling and Ca^{2+} -activated ion channels in exocrine acinar cells. **Cell Calcium** 38, 171-200.

Galione, A. and Petersen, O.H. (2005) The NAADP receptor: New receptors or new regulation? **Molecular Interventions** 5, 73-79.

Knot, H.J., Laher, I., Sobie, E.A., Guatimosim, S., Gomez-Viquez, L., Hartmann, H., Song, L.-S., Lederer, W.J., Graier, W.F., Malli, R., Frieden, M. and Petersen, O.H. (2005) Twenty years of calcium imaging: cell physiology to dye for. **Molecular Interventions** 5, 112-127.

Petersen, O.H., Spät, A. and Verkhatsky, A. (2005) Introduction: reactive oxygen species in health and disease. **Phil. Trans. R. Soc. B** 360, 2197-2199.

Chvanov, M., Petersen, O.H. and Tepikin, A.V. (2005) Free radicals and the pancreatic acinar cells: role in physiology and pathology. **Phil. Trans. R. Soc. B** 360, 2273-2284.

Voronina, S.G., Gryshchenko, O.V., Gerasimenko, O.V., Green, A.K., Petersen, O.H. & Tepikin, A.V. (2005) Bile acids induce a cationic current, depolarizing pancreatic acinar cells and increasing the intracellular Na^+ concentration. **J. Biol. Chem.** 280, 1764-1770.

Dolman, N.J., Gerasimenko, J.V., Gerasimenko, O.V., Voronina, S.G., Petersen, O.H. & Tepikin, A.V. (2005) Stable Golgi-mitochondria complexes and formation of Golgi Ca^{2+} gradients in pancreatic acinar cells. **J. Biol. Chem.** 280, 15794-15799.

Burdakov, D., Petersen, O.H. & Verkhatsky, A. (2005) Intraluminal calcium as a primary regulator of endoplasmic reticulum function. **Cell Calcium** 38, 303-310.

2004

Park, M.K., Lee, M. & Petersen, O.H. (2004) Morphological and functional changes of dissociated single pancreatic acinar cells: testing the suitability of the single cell as a model for exocytosis and calcium signaling. **Cell Calcium** 35, 367-379.

Voronina, S., Barrow, S., Gerasimenko, O., Petersen, O.H. & Tepikin, A. (2004) Effects of secretagogues and bile acids on mitochondrial membrane potential of pancreatic acinar cells: comparison of different modes of evaluating $\Delta\psi_m$. **J. Biol. Chem.** 279, 27327-27338.

Criddle, D., Raraty, M., Neoptolemos, J.P., Tepikin, A.V., Petersen, O.H. & Sutton, R. (2004) Ethanol toxicity in pancreatic acinar cells: mediation by non-oxidative fatty acid metabolites. **Proc. Natl. Acad. Sci. USA** 101, 10738-10743.

Yano, K., Petersen, O.H. & Tepikin, A.V. (2004) Dual sensitivity of sarcoplasmic/endoplasmic Ca^{2+} -ATPase to cytosolic and ER Ca^{2+} as a mechanism of modulating cytosolic Ca^{2+} oscillations. **Biochem. J.** 383, 353-360.

Petersen, O.H. (2004) The endoplasmic reticulum in polarized epithelial cells: differential sensitivity to Ca^{2+} releasing messengers including Ca^{2+} itself. **Nova Acta Leopoldina** 89, 33-36.

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