

## CV - Søren-Peter Olesen

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### *Education*

1979              MSc (elec.engineer.; civilingeniør), Danish Technical University

1982              MD, University of Copenhagen

1988              Internship, Rigshospitalet

1989              PhD (dr.med.), University of Copenhagen

### *Previous positions*

1982-86         Research assistant/PhD student, Dept. Med. Physiol., U. Copenhagen

1986-87         Postdoc, Brigham & Women's Hospital, Harvard Med. School, Boston, USA

1987-89         Internship, Dept. of Medicine, Surgery, Ophthalmology, Copenhagen Hospitals

1989-98         Head of Department, NeuroSearch A/S

1998-            Professor of Physiology, Department of Biomed Sci, University of Copenhagen

2005-2015      Director of the Danish National Research Foundation Centre for Cardiac Arrhythmia

2008-2015      Head of the Section of Cardiovascular Res., Dept. Biomed. Sci., U. Copenhagen

2015-            CEO of the Danish National Research Foundation

### *The Royal Danish Academy of Sciences and Letters*

1998-            Member

2005-08        Member of the Science Policy board

2009-11        Secretary General

### *Publications*

Published >180 papers in international peer reviewed journals including Nature, PNAS, Circulation, Physiological Rev. about ion channels, arrhythmia, cardiovascular- and neuro-physiology. h-factor is 59. Co-inventor on 25 issued international patents on new chemical compounds, biological principles, and technological inventions for electrophysiological characterization of drug effects.

### *Grants*

The Danish Medical Research Council. Framework grants from 1998-2016. PI

The Danish National Research Foundation Center for Cardiac Arrhythmia. 2005-15. PI

Innovationfund Denmark. Grant no 65-2013-3. 2014-18. Co-PI.

The Lundbeck Foundation, The NovoNordisk Foundation, The Danish Heart Foundation, The Velux Foundation a.o. continuous support from 1998-2015. PI

EU Marie Curie Actions: Coordinator and/or participant in Science Grant SC1\*CT91-0665; Biomed 2 project BMH4-97-2118; FP7, Marie Curie, ITN, PITN-GA-2009-2357

### *Teaching and supervision*

Have supervised 39 PhD students and taught medical, dentistry and human biology students cardiovascular and neurophysiology, cell biology and pharmacology. Currently supervise a number of bachelor students.

### *Scientific conferences*

Give several invited talks and co-organize 1-2 international conferences in Copenhagen each year.

### *Boards*

Member of the board of the Carlsberg Foundation, 2012-

Member of the board of the Scandinavian Physiological Society, 2010-2015

Member of Fagligt Udvalg, Danish Ministry of Higher Educations and Science, 2009-2015

Chairman of committees for international guest scientist housing in the Danish National Bank (2002- ) and in The Nordea Foundation (2009- )

### *Industry*

Member of the supervisory board of The Carlsberg Group A/S, 2012-

Member of the Board of Directors of Sophion Bioscience A/S, 2001-11

Co-founder of Sophion Bioscience and Poseidon Pharma 2001-2, CEO of Poseidon 2002-4

Consultant to NeuroSearch A/S, 1998-2012

Consultant to Acesion Pharma A/S, 2013-15

Chairman of the committee making the university-industry collaboration strategy at U Cph, 2009-10

Chairman of the University of Copenhagen patent and licensing supervisory board 1998-2007

## Selected publications from Søren-Peter Olesen – 25 out of 180 papers

Rare truncating variants in the sarcomeric protein titin associate with familial and early-onset atrial fibrillation.

Ahlberg G et al.

*Nature Communications*, vol 9, No 1, 4316, 2018

Magnetocardiography on an isolated animal heart with a room temperature optically pumped magnetometer.

Jensen K et al.

*Scientific Reports*, vol 8, 16218, 2018

Non-invasive detection of animal nerve impulses with an atomic magnetometer operating near quantum limited sensitivity. Jensen K .... **Olesen SP**, Polzik E. *Scientific Reports*. July 15,6: 29638, 2016

Live imaging of Kv7.2/7.3 cell surface dynamics at the axon initial segment: high steady state stability and calpain-dependent excitotoxic downregulation revealed. Bønned-Jensen T, Christensen RK, Denti F, Perrier JF, Rasmussen HB, **Olesen SP**. *J Neurosci* 2016 Feb 17;36(7):2261-6

Cardiac potassium channel subtypes: new roles in repolarization and arrhythmia

N Schmitt, M Grunnet, **SP Olesen**

*Physiological Reviews* 94 (2), 609-653, 2014

Very early-onset lone atrial fibrillation patients have a high prevalence of rare variants in genes previously associated with atrial fibrillation

MS Olesen, L Andreassen, J Jabbari, L Refsgaard, S Haunsø, **SP Olesen**, ...

*Heart Rhythm* 11 (2), 246-251, 2014

Annotation of loci from genome-wide association studies using tissue-specific quantitative interaction proteomics

A Lundby, EJ Rossin, AB Steffensen, MR Acha, C Newton-Cheh, ...

*Nature Methods*, 11 (8), 868-74, 2014

A novel KCND3 gain-of-function mutation associated with early-onset of persistent lone atrial fibrillation

MS Olesen, L Refsgaard, AG Holst, AP Larsen, S Grubb, S Haunsø, ...

*Cardiovascular Research* 98 (3), 488-495, 2013

Familial aggregation of lone atrial fibrillation in young persons

N Øyen, MF Ranthe, L Carstensen, HA Boyd, MS Olesen, **SP Olesen**, ...

*Journal of the American College of Cardiology* 60 (10), 917-921, 2012

Downregulation of Kv7.4 channel activity in primary and secondary hypertension

TA Jepps, PS Chadha, AJ Davis, MI Harhun, GW Cockerill, **SP Olesen**, ...

*Circulation* 124 (5), 602-611, 2011

Identification of a Kir3.4 mutation in congenital long QT syndrome

Y Yang, Y Yang, B Liang, J Liu, J Li, M Grunnet, **SP Olesen**, ...

*The American Journal of Human Genetics* 86 (6), 872-880, 2010

Arvelige hjertesygdomme forårsaget af natriumkanalmutationer J Tfelt-Hansen, **SP Olesen**, JH Svendsen, T Jespersen

*Ugeskr Læger* 171 (15), 1261-5, 2009

Single-copy insertion of transgenes in *Caenorhabditis elegans*

C Frøkjær-Jensen, MW Davis, CE Hopkins, BJ Newman, JM Thummel, ...

*Nature Genetics* 40 (11), 1375-1383, 2008

hERG1 channel activators: a new anti-arrhythmic principle

M Grunnet, RS Hansen, **SP Olesen**

*Progress in Biophysics and Molecular Biology* 98 (2), 347-362, 2008

Activation of human ether-a-go-go-related gene potassium channels by the diphenylurea 1, 3-bis-(2-hydroxy-5-trifluoromethyl-phenyl)-urea (NS1643)

RS Hansen, TG Diness, T Christ, J Demnitz, U Ravens, **SP Olesen**, ...

*Molecular Pharmacology* 69 (1), 266-277, 2006

The KCNQ1 potassium channel: from gene to physiological function

T Jespersen, M Grønnet, **SP Olesen**

*Physiology* 20 (6), 408-416, 2005

Pharmacological characterization of small-conductance  $\text{Ca}^{2+}$ -activated  $\text{K}^{+}$  channels stably expressed in HEK 293 cells

D Strøbæk, TD Jørgensen, P Christophersen, PK Ahring, **SP Olesen**

*British Journal of Pharmacology* 129 (5), 991-999, 2000

Inhibition of T cell proliferation by selective block of  $\text{Ca}^{2+}$ -activated  $\text{K}^{+}$  channels

BS Jensen, N Ødum, NK Jørgensen, P Christophersen, **SP Olesen**

*Proceedings of the National Academy of Sciences* 96 (19), 10917-10921, 1999

Characterization of NS 2028 as a specific inhibitor of soluble guanylyl cyclase

SP Olesen, J Drejer, O Axelsson, P Moldt, L Bang, JE Nielsen-Kudsk, ...

*British Journal of Pharmacology* 123 (2), 299-309, 1998

Cloning, expression, and distribution of a  $\text{Ca}^{2+}$ -activated  $\text{K}^{+}$  channel beta-subunit from human brain

J Tseng-Crank, N Godinot, TE Johansen, PK Ahring, D Strøbæk, R Mertz, ...

*Proceedings of the National Academy of Sciences* 93 (17), 9200-5, 1996

Selective activation of  $\text{Ca}^{2+}$ -dependent  $\text{K}^{+}$  channels by novel benzimidazolone

**SP Olesen**, E Munch, P Moldt, J Drejer

*European Journal of Pharmacology* 251 (1), 53-59, 1994

Haemodynamic shear stress activates a  $\text{K}^{+}$  current in vascular endothelial cells

**SP Olesen**, D Clapham, P Davies

*Nature* 331 (6152), 168-170, 1988

Free oxygen radicals decrease electrical resistance of microvascular endothelium in brain

**SP Olesen**

*Acta Physiologica Scandinavica* 129 (2), 181-187, 1987

A calcium-dependent reversible permeability increase in microvessels in frog brain, induced by serotonin

**SP Olesen**

*The Journal of Physiology* 361 (1), 103-113, 1985

Electrical resistance of brain microvascular endothelium

C Crone, **SP Olesen**

*Brain Research* 241 (1), 49-55, 1982

**Selected issued international patents from Søren-Peter Olesen** – 7 out of 25 patents

Administering 1, 3-bis-(2-hydroxy-5-trifluoromethyl-phenyl)-urea activates an ERG channel; arrhythmia; cardiac ischemia, ischemic heart disease, hypertrophic heart, cardiomyopathia or failing heart

**SP Olesen**, M Grunnet, P Christophersen, D Strøbæk, J Demnitz, ...

*US Patent 7,851,492; 2010*

Benzimidazol-2-one derivatives and their use

LS Madsen, C Ærteberg Bæk, A Lauridsen, **SP Olesen**

*US Patent 7,244,756; 2007*

PCR measurement system

T Jespersen, **SP Olesen**, M Bech, R Taboryski

*European Patent 1,511,843; 2002*

Bis (benzimidazole) derivatives serving as potassium blocking agents BS Jensen, **SP Olesen**, L Teuber, D Peters, D Strøbæk

*US Patent 6,194,447; 2001*

A substrate and a method for determining and/or monitoring electrophysiological properties of ion channels. JW Petersen, P Telleman, O Hansen, P Christophersen, M Bech, **SP Olesen** ...

*US Patent 6,682,649; 1999*

Patch clamp apparatus and technique having high throughput and low fluid volume requirements.

**SP Olesen** & P Christophersen

*US Patent 6,063,260; 1994*

Urea derivatives and their use.

**SP Olesen**, P Moldt & O Pedersen

*US Patent 5,696,138; 1993*