



School of Life Sciences
The Chinese University of Hong Kong

生命科學學院



35
35th Anniversary
1981-2016



CUHK Medicine 35th Anniversary Distinguished Lecture Series

*Co-organized by the School of Biomedical Sciences (Faculty of Medicine),
School of Life Sciences (Faculty of Science) &
RGC AoE Centre for Organelle Biogenesis and Function*



Professor Natalia PREVARSKAYA

Full Professor of Physiology, University of Lille 1

Director, Laboratory of Cellular Physiology, Inserm U1003

PRE CE2 Professor of Exceptional Class

France

“Complex Regulation of TRPM8 Channel”

on

28 December 2016 (Wednesday)

at

11:00 am - 12:30 pm

in

**SC L2, Science Centre
The Chinese University of Hong Kong**

ALL ARE WELCOME

Natalia Prevarskaya, Doctor of Science (Biophysics) since 1985. She is full professor of Physiology since 1996 at the University Lille1. She heads the Inserm Unit 1003 on Cellular Physiology with 40 people. She won the prize of “Young researchers for Health” in 1996, the prize from FRM (Foundation for Medical Research) in 2004 and the prize from the French Society of Science in 2006. She published 127 articles in peer-reviewed journals, 9 invited reviews and 7 chapters. During last 5 years she has been invited to give 48 lectures at international meetings (FASEB, GORDON conferences, Experimental Cell Biology, IUPS ...). She was the coordinator of 2 European collaborative projects INTAS, of national collaborative project on Cancer (INCA and ANR). She is member of Inserm scientific commission and University National Committee. She is also Member of the scientific council of ARTP (Association for the Research against Prostate Tumours). She is a reviewer for many international journals (Nature Reviews Cancer, J.Clin. Invest. ...) and grant applications (Wellcome Trust, MRC, FP7 ...). She is an associate editor for the Journal “Frontiers in Pharmacology of Ion Channel and Channelopathies”. Her work is focused on the role played by ionic channels and intracellular calcium in prostate cancer.

Abstract

COMPLEX REGULATION OF TRPM8 CHANNEL

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Transient Receptor Potential, Melastatine member 8 channel (TRPM8) represents an ion channel activated by cold and cooling agents like menthol that underlies the cold-induced excitation of sensory neurons. Interestingly, the only human tissue outside the peripheral nervous system, in which the expression of TRPM8 transcripts was detected at high levels, was prostate – a tissue not exposed to any essential temperature variations. We show that the TRPM8 cloned from human prostate and heterologously expressed in HEK293 cells is regulated by a number of intracellular messengers such as cAMP, lysophospholipids (LPLs), arachidonic acid and Ca^{2+} . Further, we report the cloning from prostate cancer cells of new short-splice variants of TRPM8, termed short TRPM8 α (sTRPM8 α) and short TRPM8 β (sTRPM8 β) and show that both variants associate with the C-terminal tail of the full-size TRPM8 channel, resulting in stabilization of its closed state and thus reducing both its cold sensitivity and its activity. Our findings, therefore, uncover a new mode of the regulation of TRPM8 channel by its splice variants.