

Christos Pliotas
Academic (Teaching & Research) Reader
Division of Molecular & Cellular Function (L5)
Type of address: Visiting address.
Room D.3317
Michael Smith Building



Overview

Research in my group is focused on elucidating mechanical sensing and response in ion channels. We investigate how ion channels sense forces in membranes and open their pores in response to mechanical stimuli. The main method we employ is **Pulsed E**lectron-**E**lectron **D**ouble **R**esonance (PELDOR) spectroscopy, (also known as DEER spectroscopy), complemented by Cryo Electron Microscopy (cryoEM) and electrophysiology to characterise mechanosensitive ion channels.

We further study the BAM complex, which is an essential membrane protein complex involved in the folding of outer membrane proteins in gram negative bacteria, using in-cell Electron Paramagnetic Resonance (EPR) spectroscopy. More details about our group, research activities, news and current lab members could be found in the Pliotas Group Research Website

Qualifications

Doctor of Philosophy, Biochemistry, University of Aberdeen
1 Oct 2007 → 31 Jan 2011
Award Date: 6 Jul 2011

Master of Science, Medical Physics, University of Aberdeen
20 Sept 2006 → 30 Sept 2007
Award Date: 1 Oct 2007

Bachelor of Science, Physics, National and Kapodistrian University of Athens
Award Date: 6 Jul 2006

Employment

Reader in Structural Biological EPR Spectroscopy

Academic (Teaching & Research) Reader
Division of Molecular & Cellular Function (L5)
The University of Manchester
8 Jun 2023 → present

Lecturer in Integrative Membrane Biology

University of Leeds
Leeds, United Kingdom
5 Sept 2018 → 8 Jun 2023

Royal Society of Edinburgh Research Fellow & Group Leader

University of St Andrews
St Andrews, United Kingdom
1 Jan 2016 → 1 Jan 2021

Postdoctoral Research Associate

University of St Andrews
St Andrews, United Kingdom
1 Feb 2011 → 31 Dec 2015

Research outputs

Adenosine monophosphate binding stabilizes the KTN domain of the *Shewanella denitrificans* Kef potassium efflux system

Pliotas, C., Grayer, S. C., Ekkerman, S., Chan, A. K. N., Healy, J., Marius, P., Bartlett, W., Khan, A., Cortopassi, W. A., Chandler, S. A., Rasmussen, T., Benesch, J. L. P., Paton, R. S., Claridge, T. D. W., Miller, S., Booth, I. R., Naismith, J. H. & Conway, S. J., 15 Aug 2017, In: *Biochemistry*. 56, 32, p. 4219–4234 16 p.

Ion Channel Conformation and Oligomerization Assessment by Site-Directed Spin Labeling and Pulsed-EPR

Pliotas, C., 10 Aug 2017, *A Structure-Function Toolbox for Membrane Transporter and Channels*. Ziegler, C. (ed.). Cambridge, MA: Academic Press, Vol. 594. p. 203-242 40 p. (Methods in Enzymology).

Spectator no more, the role of the membrane in regulating ion channel function

Pliotas, C. & Naismith, J. H., Aug 2017, In: *Current Opinion in Structural Biology*. 45, p. 59-66 8 p.

The role of lipids in mechanosensation

Pliotas, C., Dahl, A. C. E., Rasmussen, T., Mahendran, K. R., Smith, T. K., Marius, P., Gault, J., Banda, T., Rasmussen, A., Miller, S., Robinson, C. V., Bayley, H., Sansom, M. S. P., Booth, I. R. & Naismith, J. H., Dec 2015, In: *Nature Structural and Molecular Biology*. 22, p. 991–998 8 p.

Conformational state of the MscS mechanosensitive channel in solution revealed by pulsed electron-electron double resonance (PELDOR) spectroscopy

Pliotas, C., Ward, R. J., Branigan, E., Rasmussen, A., Hagelken, G., Huang, H., Black, S. S., Booth, I. R., Schiemann, O. & Naismith, J. H., 10 Sept 2012, In: *Proceedings of the National Academy of Sciences of the United States of America*. 109, 40, p. E2675-E2682 8 p.

Prizes

BBSRC New Investigator Award

Pliotas, C. (Recipient), 23 Jun 2019

Fellow of the Royal Society of Biology (FRSB)

Pliotas, C. (Recipient), 1 Jan 2024

Royal Society of Edinburgh Research Fellowship

Pliotas, C. (Recipient), 1 Jan 2016

Sir Robin MacLellan Prize

Pliotas, C. (Recipient), 22 Jun 2022