The Biomedical & Life Sciences Collection

HSTalks

G Protein-Coupled Receptors

A Learning Journey

This learning journey is designed to provide an overview of the GPCR family of proteins and their significance as therapeutic targets. It covers several important concepts including structure and function, key GPCR-mediated signalling pathways, involvement in human health and disease, and the development of GPCR-targeted therapies.

An introduction to GPCRs

Extract from:
'Super-resolution imaging of GPCR oligomers: applications and functional roles'
Dr. Aylin Hanyaloglu – Imperial College London, UK
3 mins

Extract from:
'Adhesion GPCRs in nervous system development and disease'
Prof. Tobias Langenhan – Leipzig University, Germany
3 mins

A summary of GPCR signalling

Extract from:
'Computational modelling of GPCR signalling dynamics'
Dr. Graham Ladds – University of Cambridge, UK
1 min

Typical GPCR structure and coupling

Extract from:
'Pre-coupling of receptor oligomers and signalling molecules'
Dr. Sergi Ferré – National Institute on Drug Abuse, USA
2 mins

GPCR signalling via ligand interactions with agonists/antagonists

Extract from:
'Drugging conformational states of GPCRs'
Prof. Dr. Peter Kolb – Philipps-Universität Marburg, Germany
3 mins

GPCR and G-protein function in hormone signalling

Extract from:
'Hormone mechanisms'
Prof. Gerald W. Feigenson – Cornell University, USA
6 mins

The topology of adenylyl cyclase

Extract from:
'Pre-coupling of receptor oligomers and signalling molecules'
Dr. Sergi Ferré – National Institute on Drug Abuse, USA
1 min

Arrestins and the modulation of GPCR signalling

Extract from:
'Biology and structure of arrestin proteins'
Prof. Vsevolod V. Gurevich – Vanderbilt University, USA
4 mins

GPCR oligomers and allosterism

Extract from:
'Pre-coupling of receptor oligomers and signalling molecules'
Dr. Sergi Ferré – National Institute on Drug Abuse, USA
11 mins

An introduction to adhesion GPCRs

Extract from:
'Adhesion GPCRs in nervous system development and disease'
Prof. Tobias Langenhan – Leipzig University, Germany
3 mins

Adhesion GPCRs as metabotropic mechanosensors

Extract from:
'Adhesion GPCRs in nervous system development and disease'
Prof. Tobias Langenhan – Leipzig University, Germany
11 mins

GPCR involvement in the modulation of pain

Extract from:
'GPCRs and pain '
Prof. Dr. Christoph Stein – Charité - Universitätsmedizin Berlin, Germany
15 mins

GPCRs as therapeutic targets in neurodegenerative disease

Extract from:
'Novel approaches to treating symptoms and slowing the progress of neurodegenerative diseases'
Prof. Andrew B. Tobin – University of Glasgow, UK
9 mins

Utilizing the structure of GPCRs for drug discovery

Extract from:
'Drugging conformational states of GPCRs'
Prof. Dr. Peter Kolb – Philipps-Universität Marburg, Germany
4 mins

Evaluating GPCR signalling for drug discovery

Extract from:
'What can we learn from conformational profiling of GPCRs?'
Prof. Terry Hébert – McGill University, Canada
8 mins