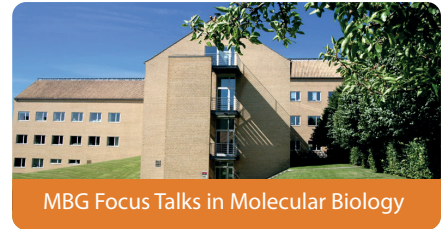


# MBG FOCUS TALK

hosted by MBG - DANDRITE



**Tuesday 19. February 2019 from 13:15-14:00**

Venue: Biomedicine Aud. (building 1170, room 347), Aarhus University

**Jakob Nilsson**

NNF Center for Protein Research, University of Copenhagen

## Regulation of signaling by phosphoprotein phosphatases

A fundamental regulatory mechanism is the phosphorylation of proteins by kinases the activity of which is counterbalanced by protein phosphatases. Members of the phosphoprotein phosphatases (PPPs) account for the vast majority of serine and threonine dephosphorylation yet their mechanism of precise substrate recognition is poorly understood.

We have recently described a general consensus binding motif for a major phosphoprotein phosphatase, PP2A-B56, and shown that this motif provides substrate specificity and regulates fundamental biological processes and Ebola infection (1,2). This motif coupled with a pronounced preference of the PP2A catalytic subunit for phosphothreonine (3) provides exquisite precision to PP2A-B56 regulation of signaling both in a temporal and spatial manner.

I will discuss our recent efforts in substrate selection by PP2A-B56 and global identification of substrates using a novel PP2A-B56 inhibitor we have generated. This approach has allowed us to uncover completely novel biological pathways regulated by this enzyme and we show how PP2A-B56 intracellular activity can control extracellular activity of a membrane bound protein.

1. Hertz EPT et al, Molecular Cell, 63: 686-695 (2016)
2. Kruse T et al, Molecular Cell 69: 136-145 (2018)
3. Hein JB et al, Nature Cell Biology 19: 1433-1440 (2017)

**Host: Professor Poul Nissen, MBG - DANDRITE, Aarhus University**