DANDRITE
Danish Research Institute of Translational Neuroscience
Nordic EMBL Partnership for Molecular Medicine

AARHUS UNIVERSITY

DANDRITE Topical Seminar

Friday 30 June 2017

10.00-11.00

The Biomedicine Auditorium, building 1170, 3rd floor, room 347
Ole Worms Allé, 8000 Aarhus C

Dr. Andrew Lin

University of Sheffield, UK

Sparse coding for odour-specific memories through balanced excitation and inhibition

How does the brain form stimulus-specific memories? In fruit flies, olfactory associative memories are stored in the Kenyon cells of the mushroom body, and we found that the odour-specificity of these memories is enhanced by sparse, decorrelated odour coding in Kenyon cells. Blocking feedback inhibition onto Kenyon cells makes Kenyon cell odour responses less sparse and more correlated, and prevents flies from learning to discriminate similar odours. We are now investigating how the mushroom body tunes the balance of excitatory and inhibitory inputs in order to produce reliable sparse, decorrelated coding, based on preliminary results suggesting that Kenyon cells compensate for perturbations in excitation/inhibition balance.

Host: Group Leader Anne von Philipsborn, DANDRITE, Dept. MBG, Aarhus University