

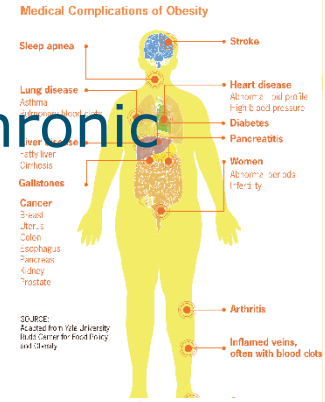
Reduction of obesity and related diseases by targeted nutritional treatment

- WFBR: Shanna Bastiaan-Net, Coen Govers, Harry Wichers
- WPR: Jan Bergervoet, Maurice Henquet
- WU-HAP: Vincent de Boer, Jaap Keijer



Background

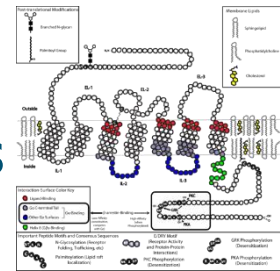
- Rapid increase in obesity, which is prelude to chronic non-communicable diseases (e.g. CVD, T2DM, depression, tumours)



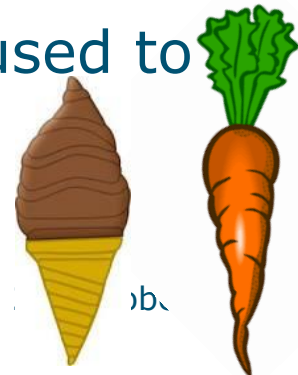
- Mechanistic cause for this is sterile, low grade, inflammation in the visceral adipose tissue



- GPCRs are involved in this; in particular GPCRs expressed in immune cells such as MΦs and DCs



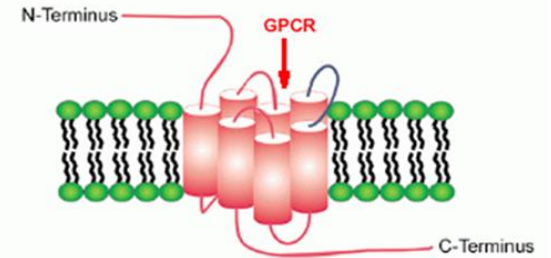
- Food contains many GPCR-ligands that can be used to regulate their activity



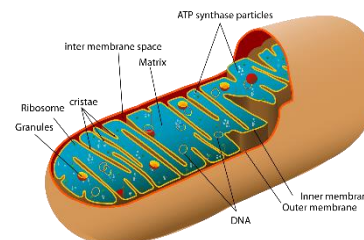
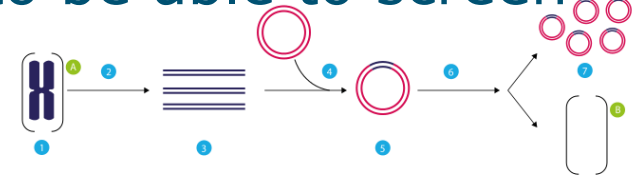
GOH,)b

What did we do?

- We identified relevant GPCRs
- We expressed a few heterologously to be able to screen for food-derived ligands



- We tested the response of immune cell (lines)
- We tested a few ligands in mitochondria (from HT29 (gut) and C2C12 (muscle))



Outcome and outlook

Outcome:

- Methodology in place for screening platform:
expression (HEK293) and ligand binding (fortebio Octet)
- Relevant GPCRs selected in cell lines
contamination of food prep's hampers interpretation
- In mitochondria, focus on OCR
FFAR2/serotonin-R; ligands: cannabis-extract, butyrate tested

Outlook:

- Many methods in place, need further validation
- Focus towards *in vivo*
- **Fund raising**

Questions?

