

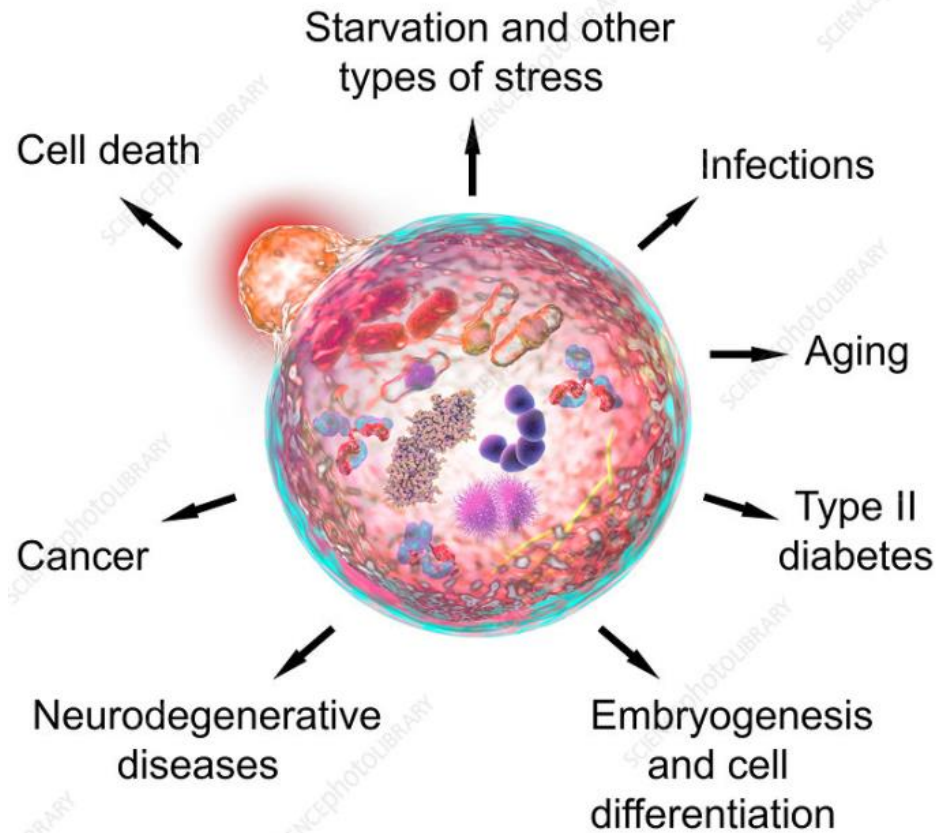
New advances in autophagy in Crassostrea gigas

Morga Benjamin
Works of Sandy Picot (PhD)

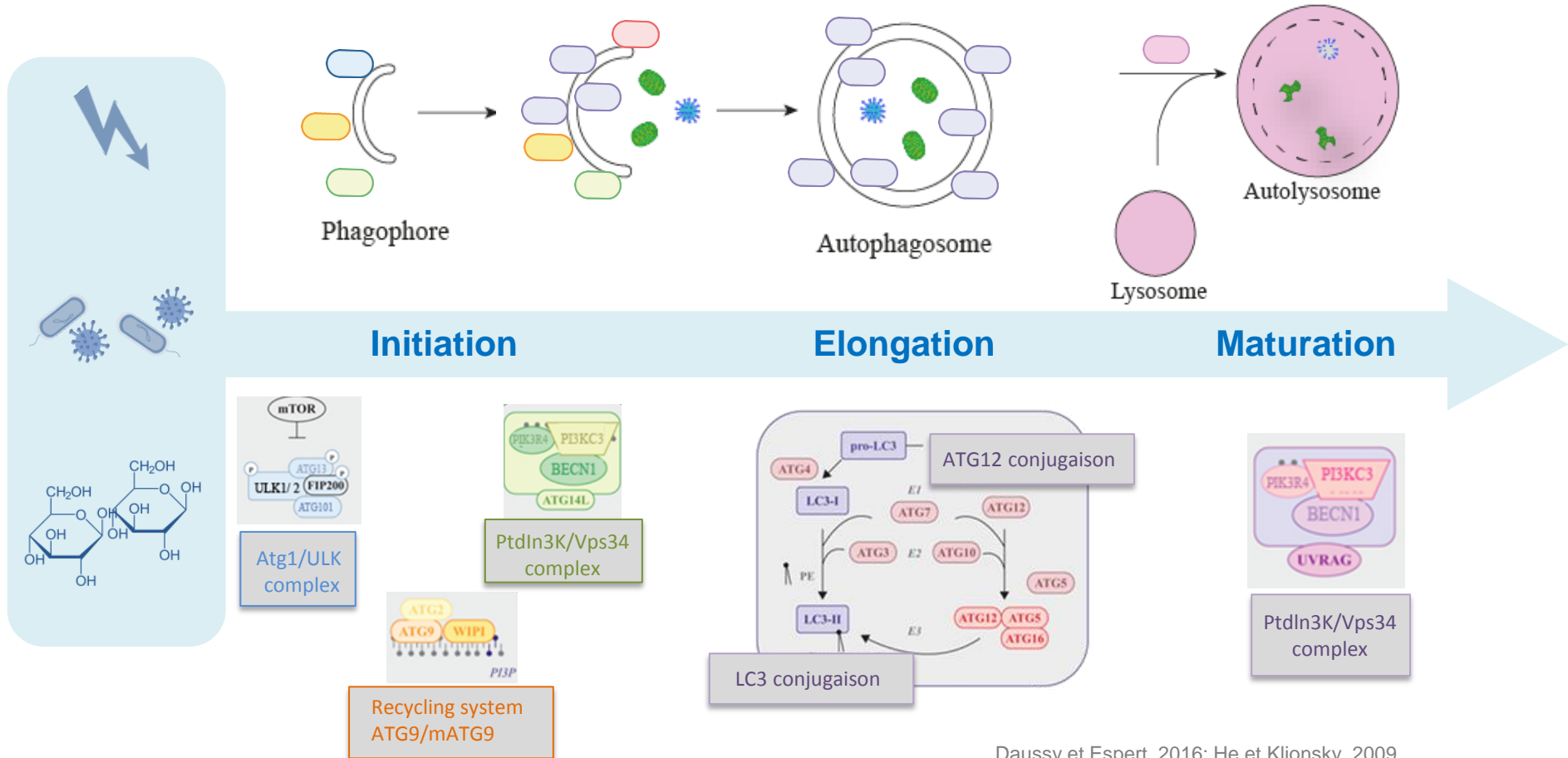
Vivaldi Final Conference
Brest, 26-28th November



Autophagy functions

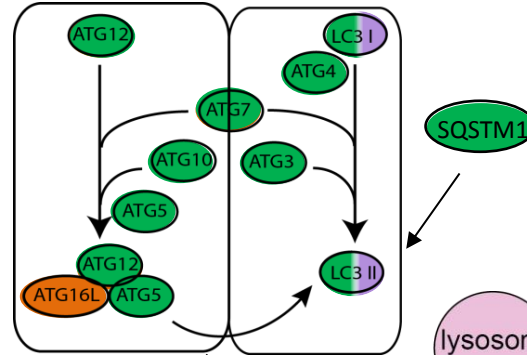
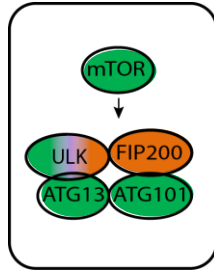


Autophagy pathway

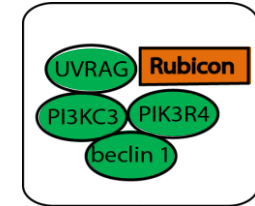


Characterisation of the autophagy pathway in *C. gigas*

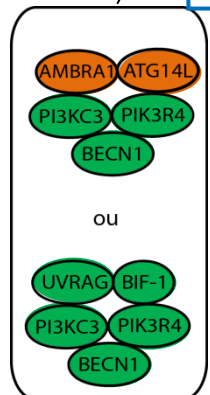
Atg1/ULK complex



PtdIns 3K complex



x High similarity between *C. gigas* to mammals' autophagy pathway



PtdIns 3K complex

Phagophore

Autophagosome

lysosome

Autolysosome

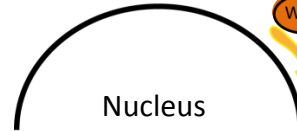


Golgi



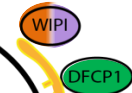
Lipid droplet

Atg9/mATG9

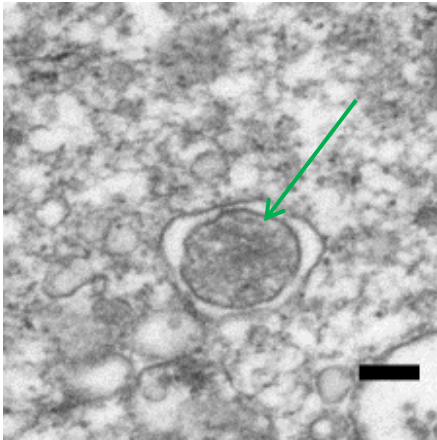


Nucleus

Endoplasmic reticulum

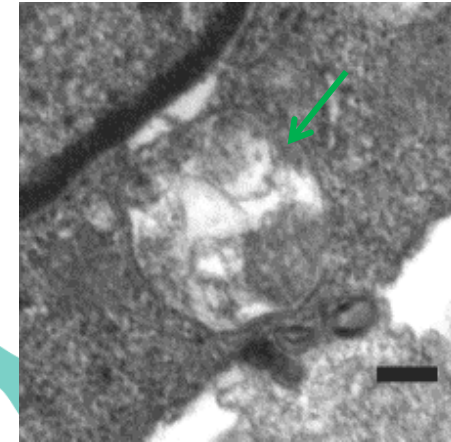
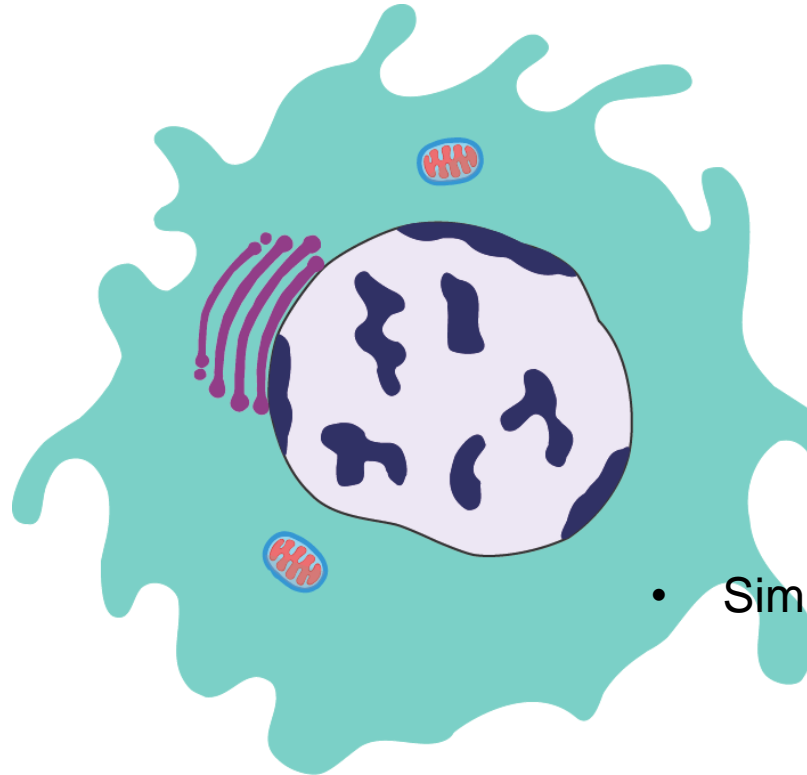


Ultrastructure of autophagy in haemocyte



Scale bar=200 nm

- Double membrane: autophagosomes



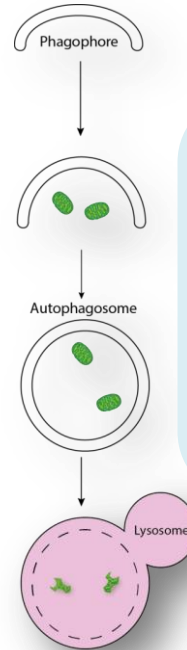
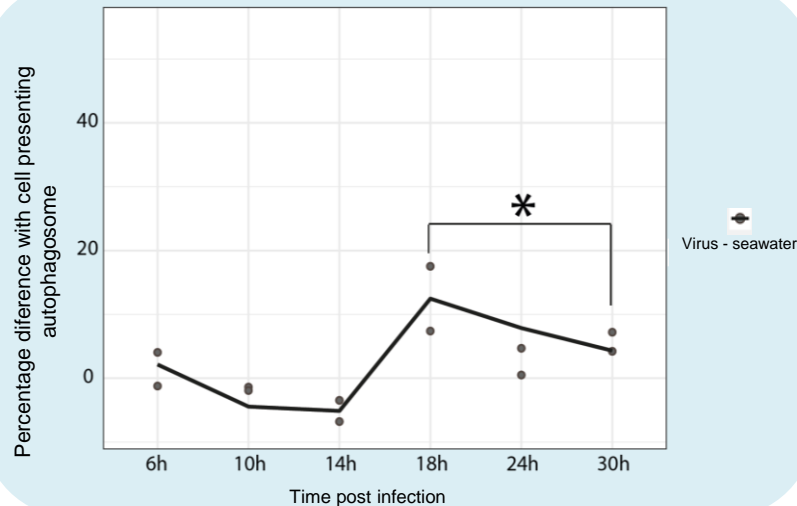
Scale bar=200 nm

- Simple membrane : autolysosomes

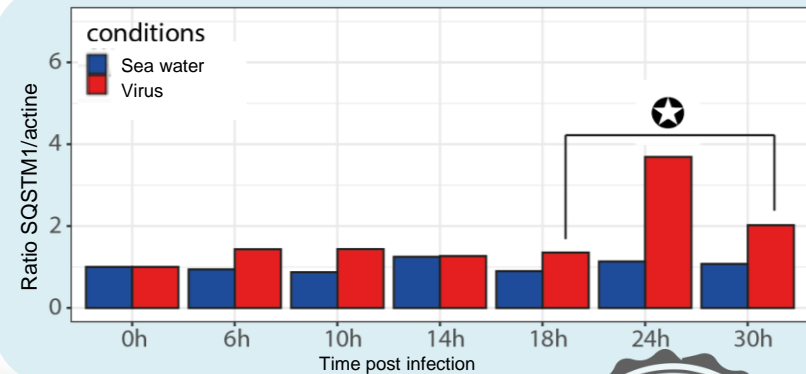
Modulation of autophagy flow during an OsHv-1 infection

Picot *et al.*, in prep

Haemolymph



Mantle



Significant augmentation at 18-30 hpi

- ✗ Modulation of autophagic flow in mantle and in haemolymph during an infection by the OshV-1 virus
- ✗ Modulation of gene expression during an infection by the OshV-1 virus

Take home message

- Characterisation of the molecular pathway in *C. gigas*
- Similar approach has been done in *Crassostrea virginica* in collaboration with the Burge lab (expert panel in VIVALDI)



and cellular level during an infection by the OsHV-1 virus

ositively
agosomes
ytoID®
y

Perspectives

- Study the autophagy pathway in resistant/tolerant family to the infection of the OsHV-1
- Study the modulation of the autophagy flow during starvation and the impact during the OsHV-1 infection in *C. gigas*



Dr. Sandy Picot



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