MeBoP

Middle Eastern Biology of Parasitism

BILL & MELINDA GATES foundation

UNIVERSITÄT BERN

University of Glasgow | Wellcome Trust Centre for Molecular Parasitology

LAB RESULTS SUMMARY, SECOND WEEK

The role of the ASP3 gene on *Toxoplama*'s egress process

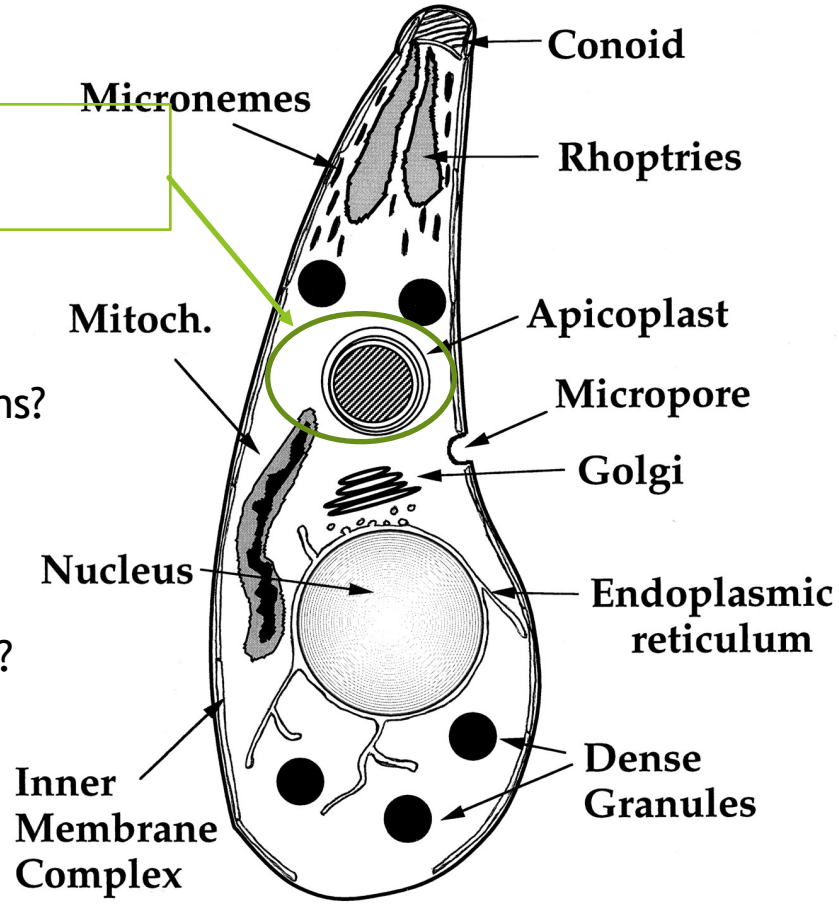
Background

Post golgi region: **AsP3**
(Aspartic protease 3)

Processing transiting proteins?

Role in organelles genesis?

Implicated in the parasite egress or invasion processes?



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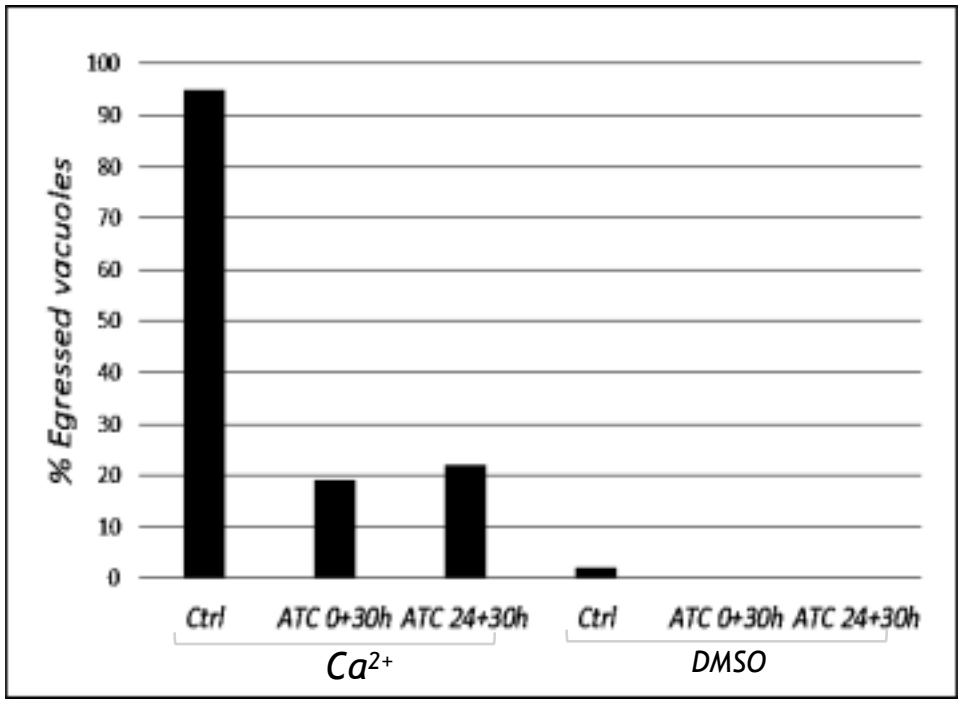
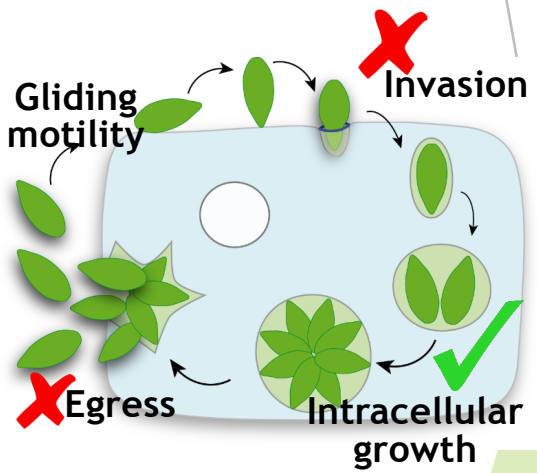
ASP3 knockdown impacts Ca^{2+} induced egress

Egress Assay – Ca^{2+} ionophore induced

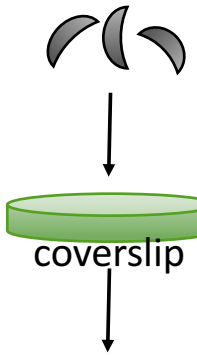


Ca^{2+} ionophore, 7 minutes



Methods

ASP3-iKD
and control
+/- ATc



Incubation
30 hours at 37° C

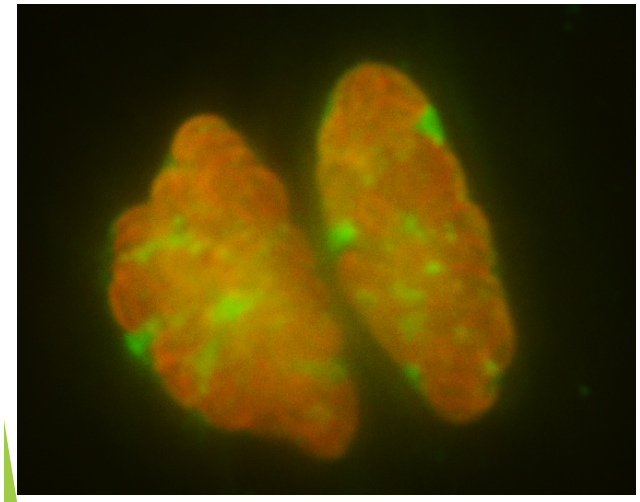
Stimulation with A23187 or DMSO
for 7 minutes 37° C

IFA

With **permeabilization**
(primary Ab: anti-GAP45, secondary Ab: anti-rabbit-Alexa594)
(primary Ab: anti-GRA3, secondary Ab: anti-mouse-Alexa488)

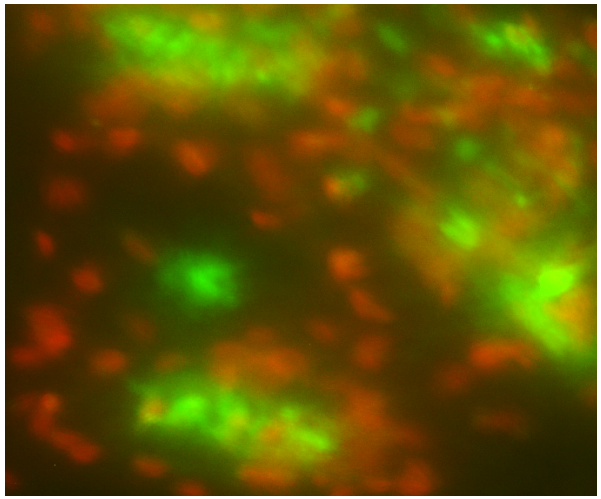
Results

Control: +DMSO
-ATC; -A23187



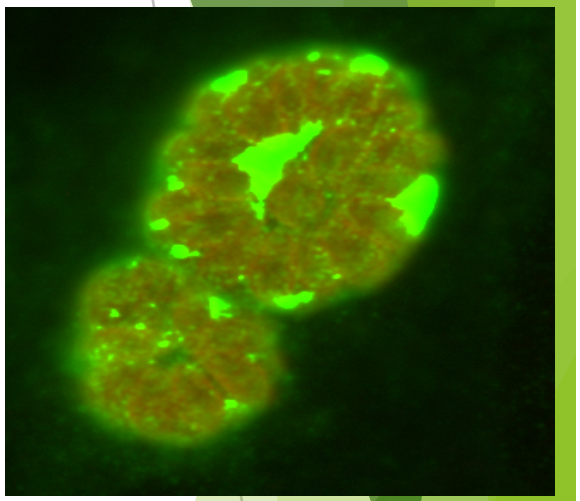
Parasites in the parasitic vacuole

-ATC;
+A23187 (in DMSO)



Parasites out of the parasitic vacuole

+ATC;
+A23187 (in DMSO)



Parasites in the parasitic vacuole

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Conclusion

- A23187 calcium ionophore can induce the egress process of *Toxoplasma gondii*
- The AsP3 plays a role in *T. gondii egress process*
- The AsP3 can be knoked out with ATC in *T. gondii* and thus the protease can be targeted in drug design

THANK YOU