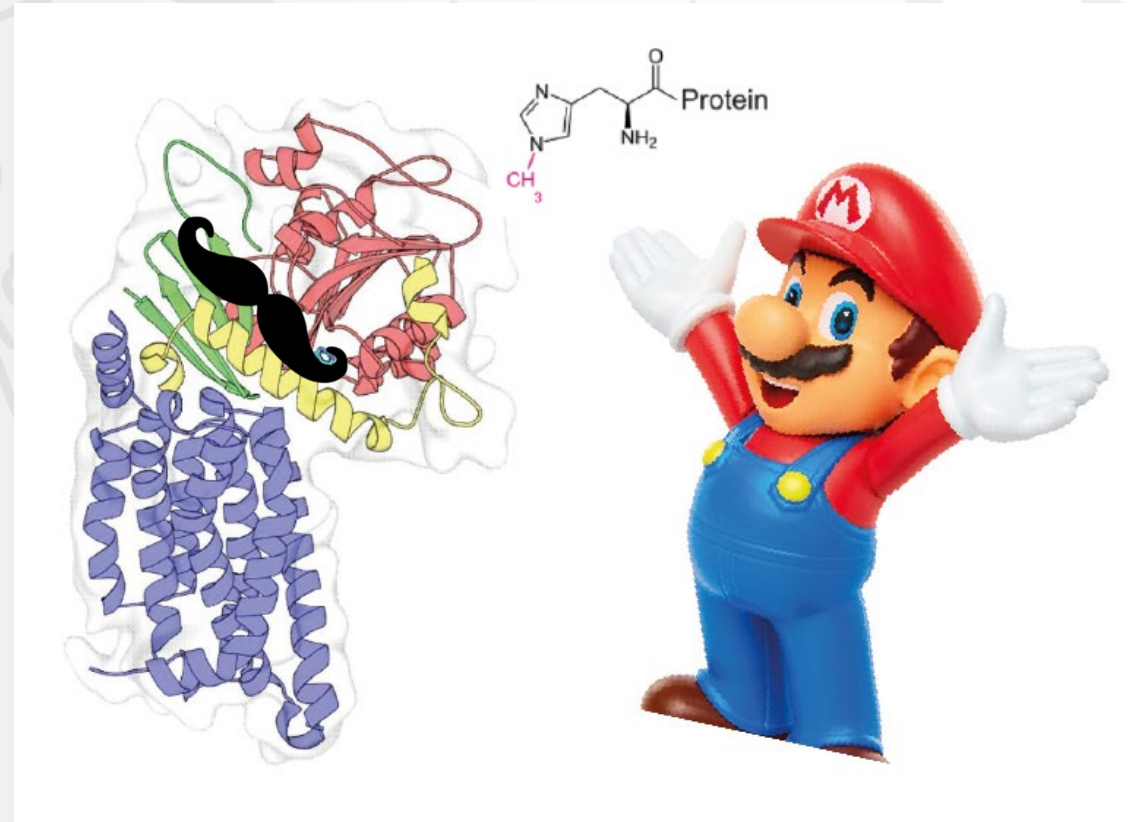


# Identification of a fungal N-terminal histidine methyltransferase using targeted proteomics

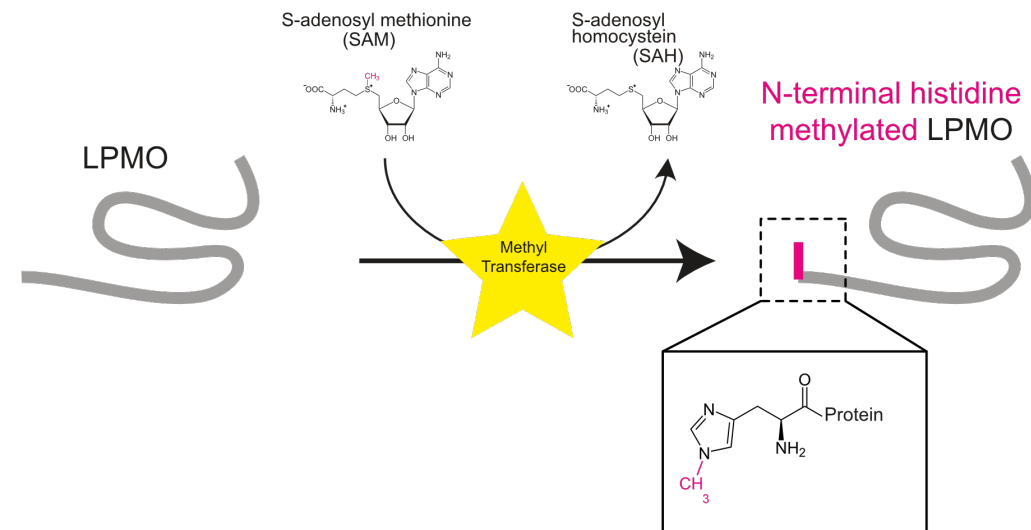
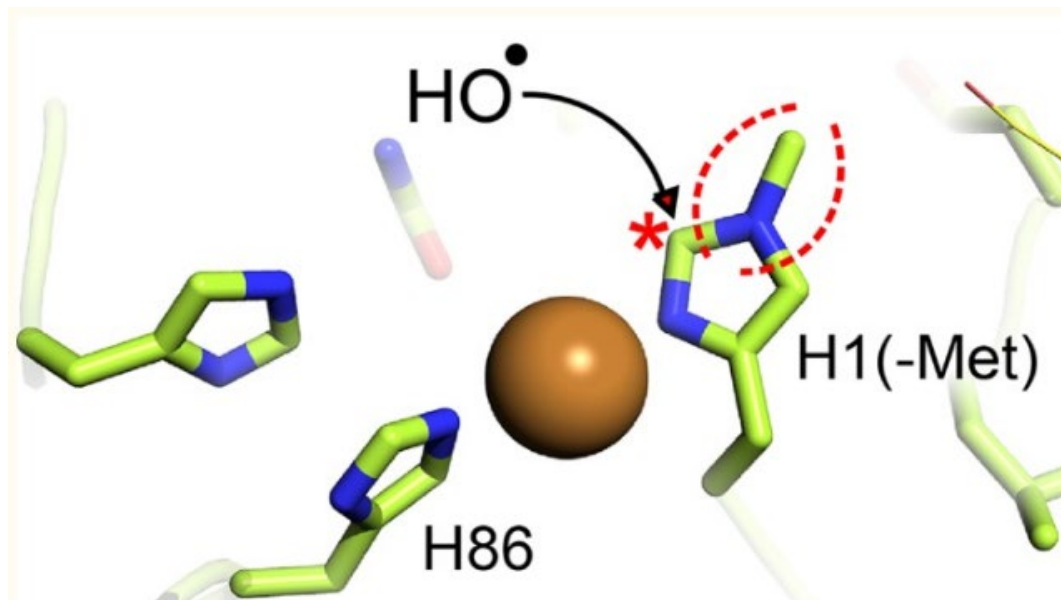
Skyline user meeting  
ASMS 2024

Tanveer S. Batth

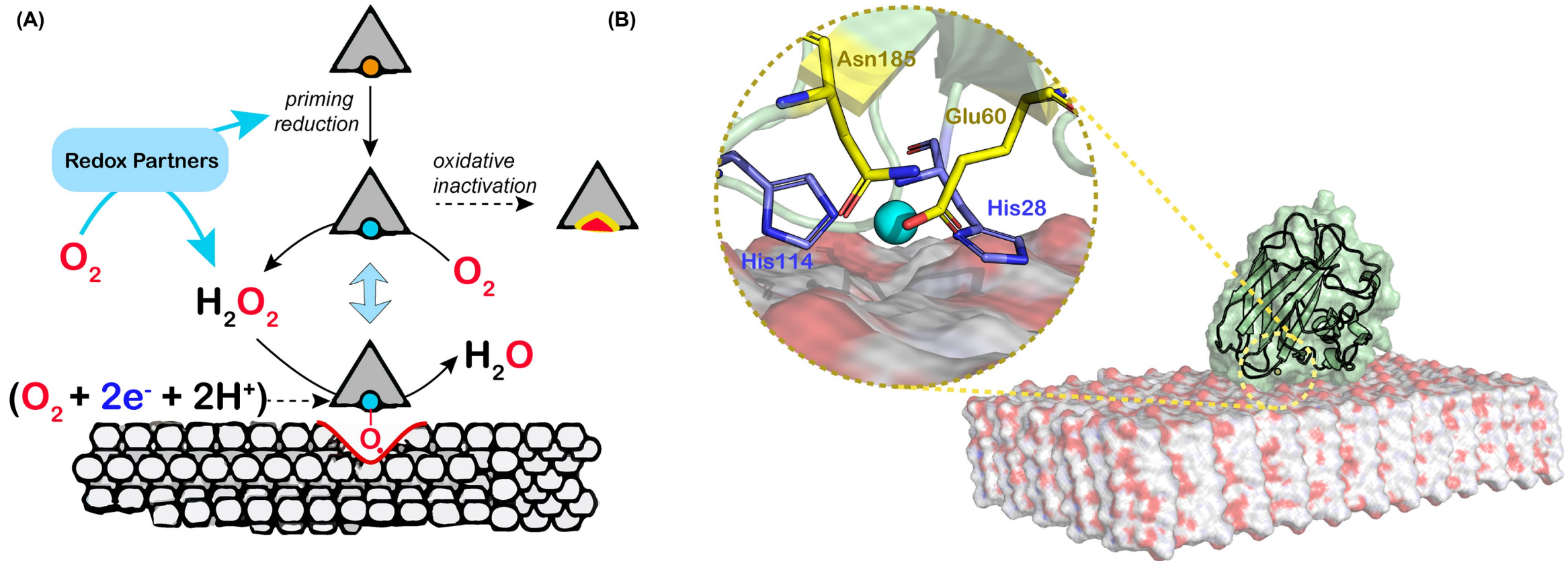
KØBENHAVNS UNIVERSITET



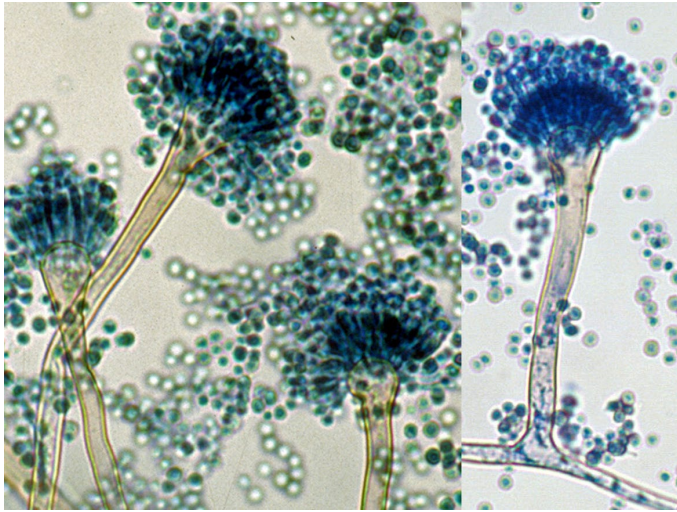
# N-terminal methylation of fungal LPMOs



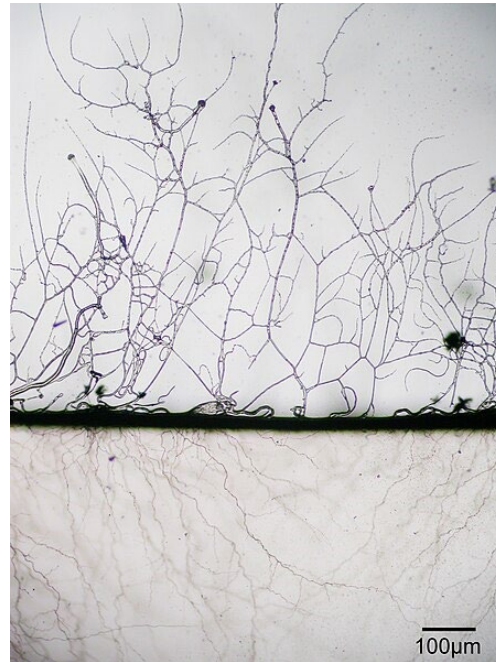
# Lytic polysaccharide monooxygenases (LPMOs)



# Filamentous fungi model organism

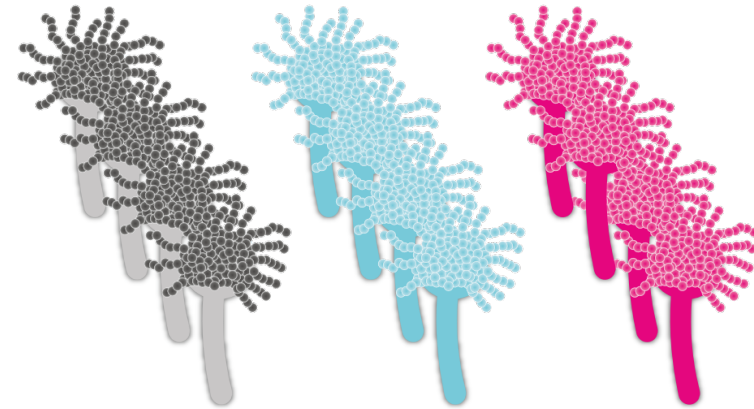


<https://www.adelaide.edu.au/mycology/>



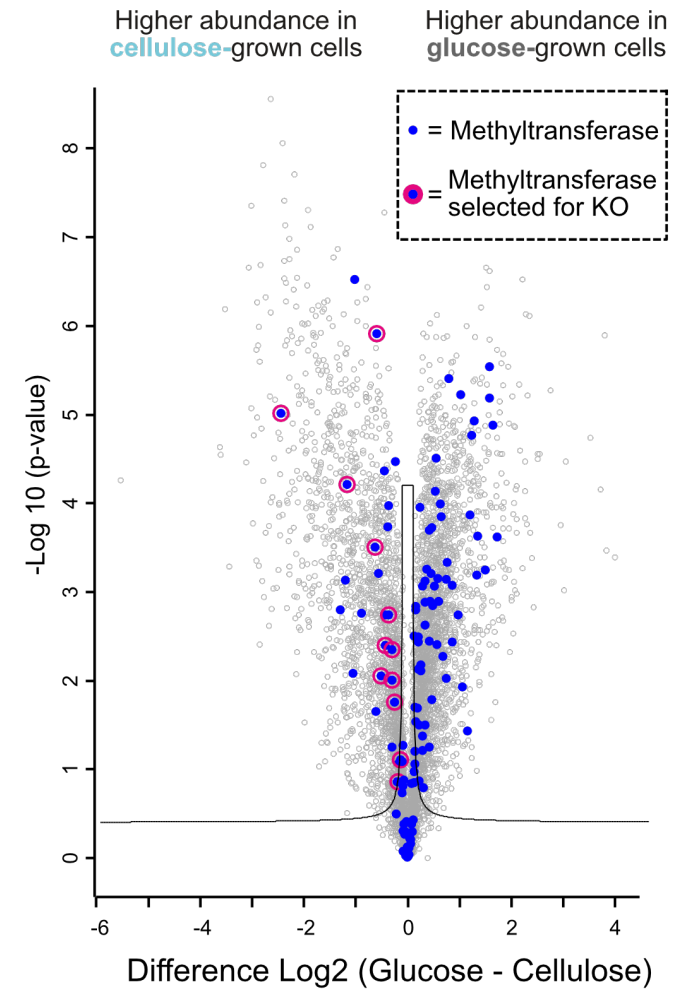
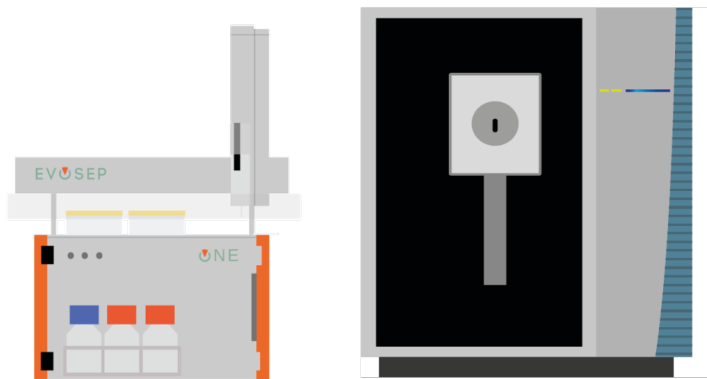
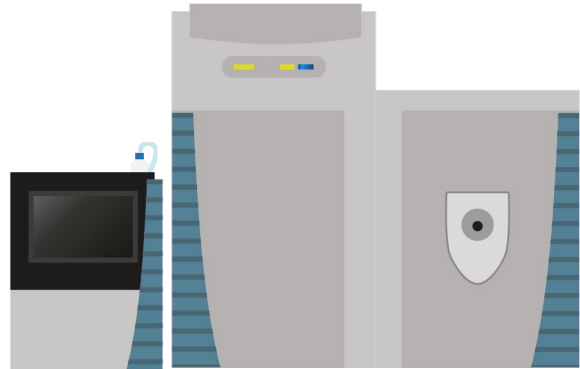
<https://commons.wikimedia.org/>

*Aspergillus nidulans* grown on **glucose**, **cellulose**, or **potato dextrose** (glucose)

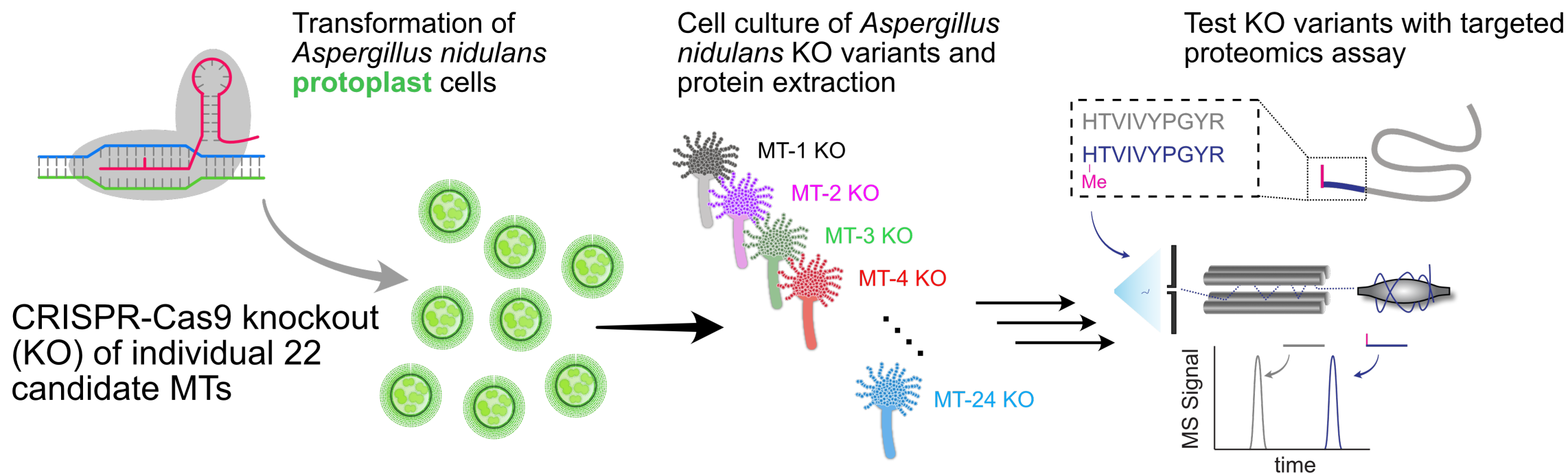




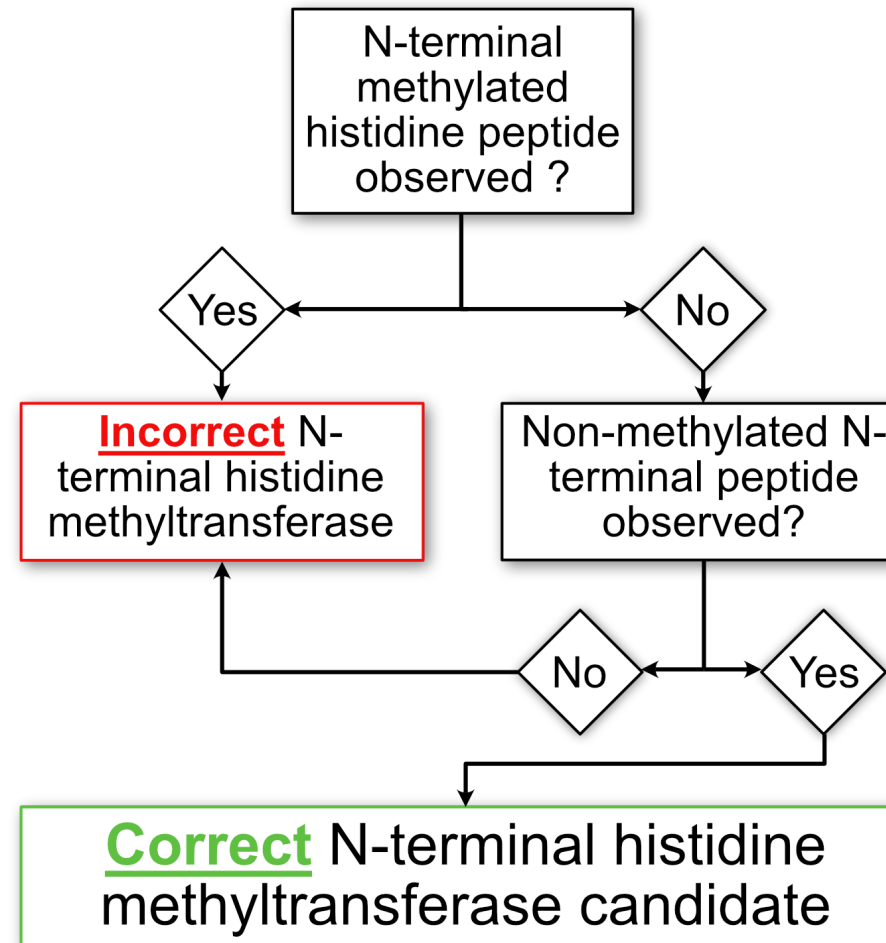
# Discovery to Targeted – Two sides of the same mass spectrometer



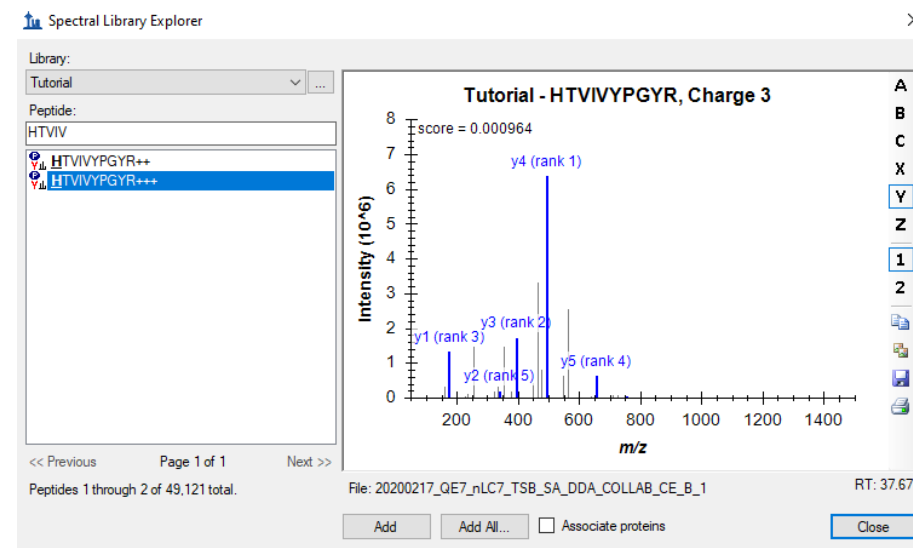
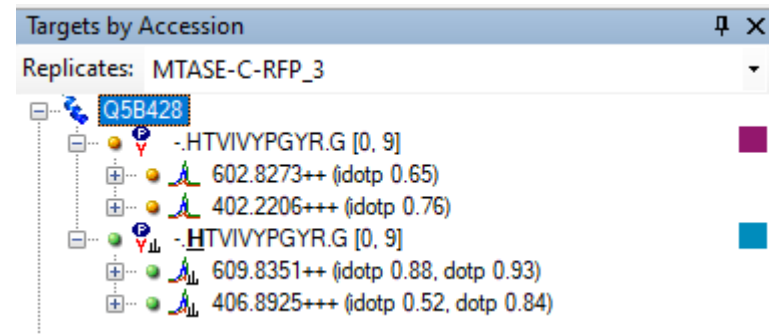
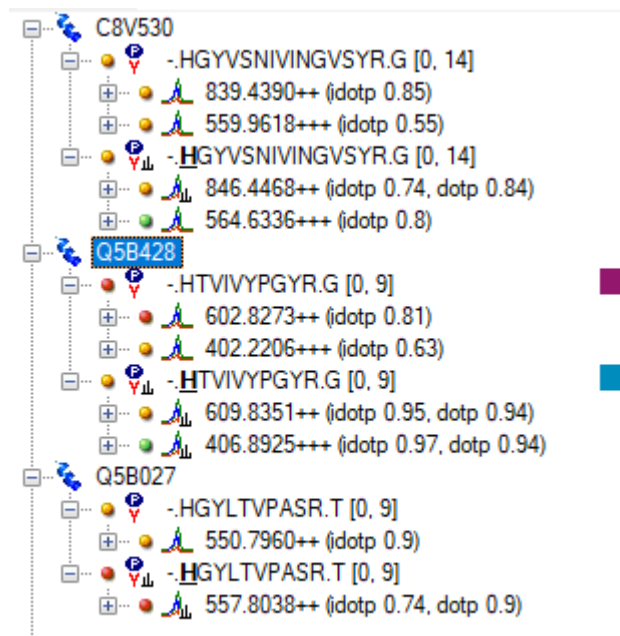
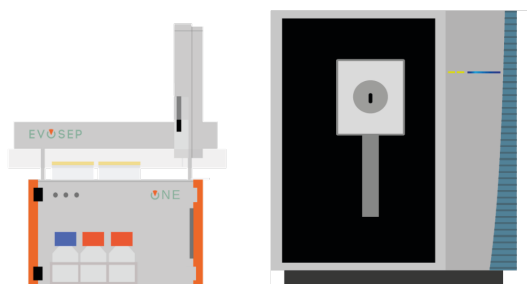
# CRISPR/Cas9 knockout and proteomics strategy for identification of the NHMT



# CRISPR/Cas9 knockout and proteomics strategy for identification of the NHMT

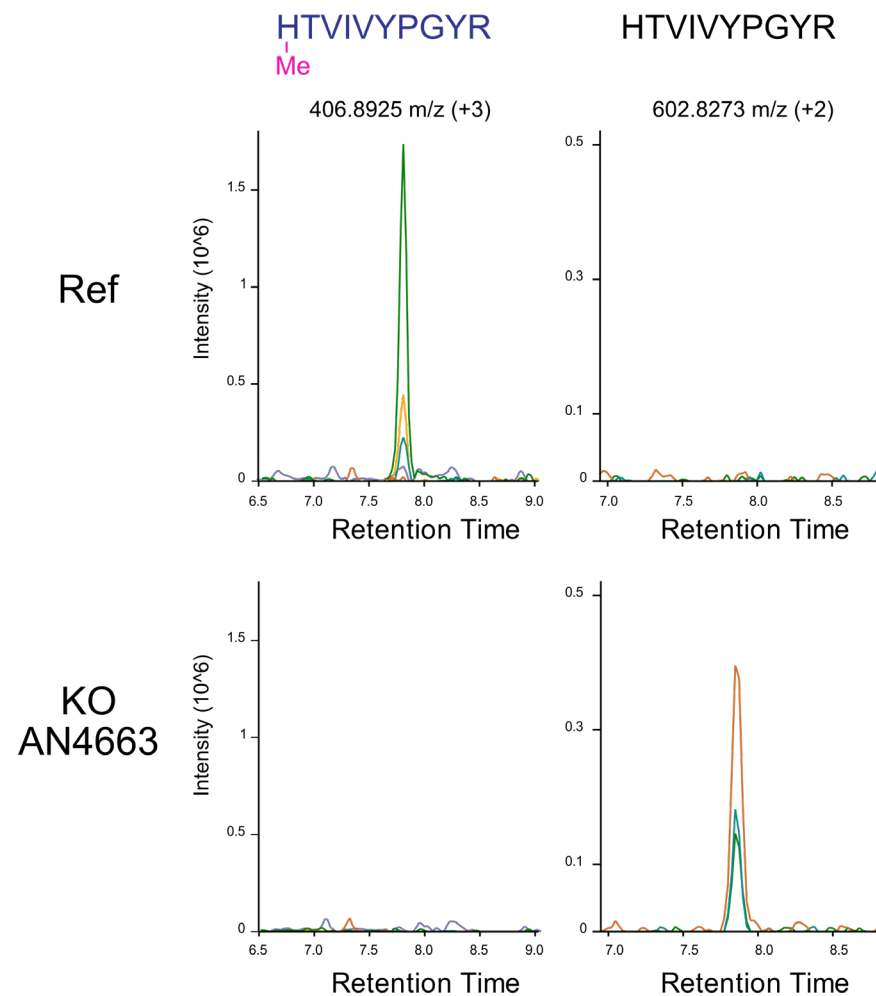
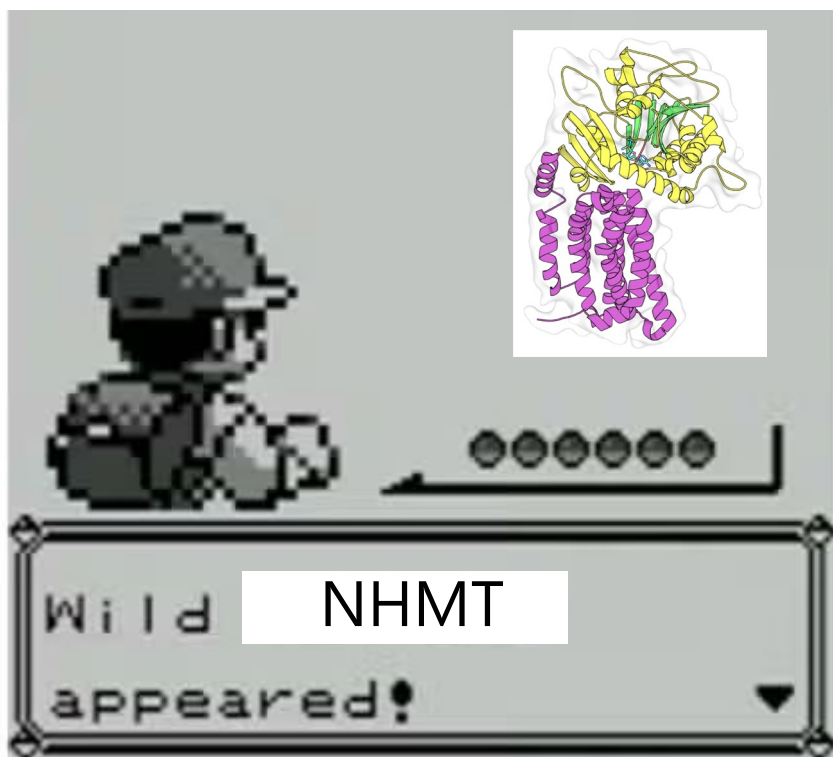


# Discovery to Targeted – Establishing a Skyline method

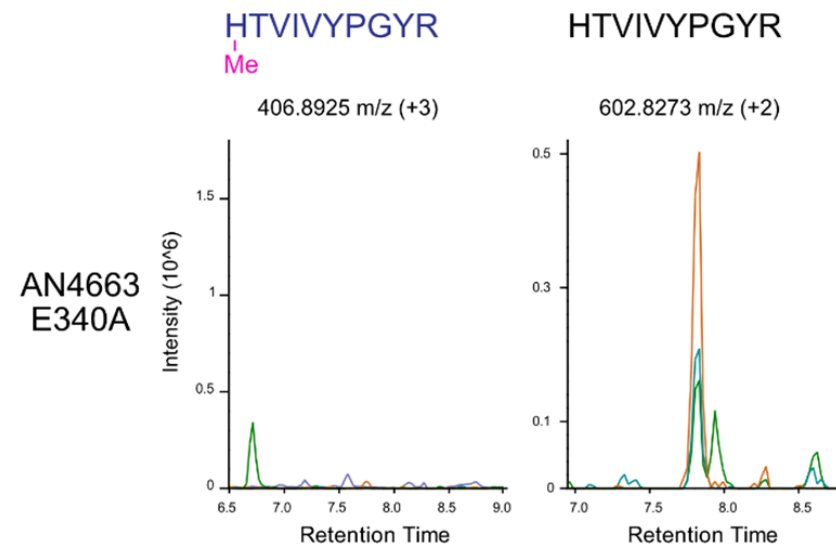
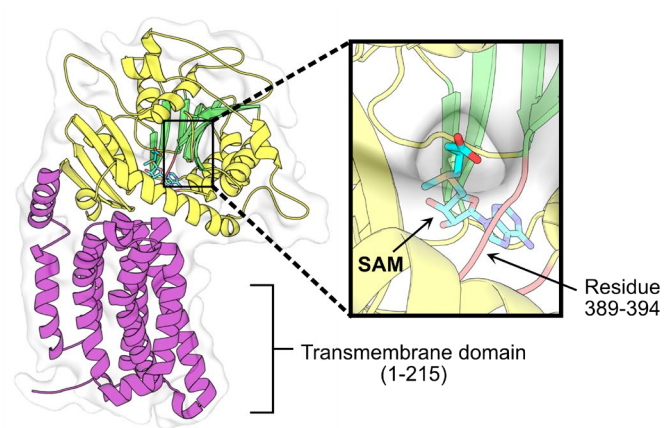
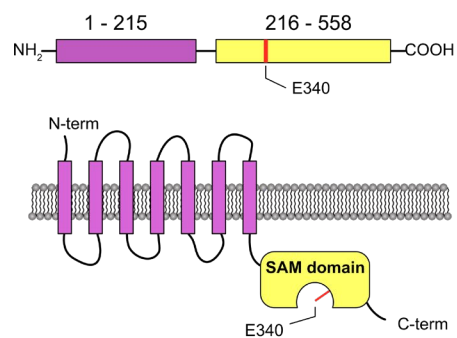




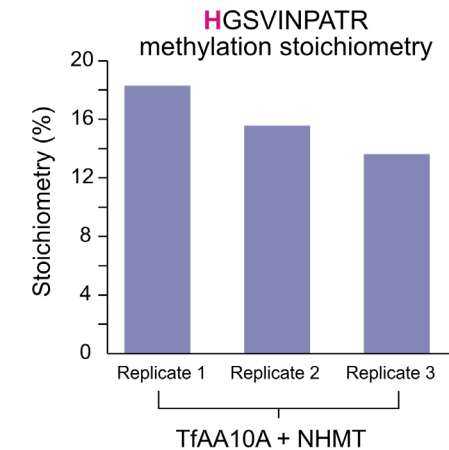
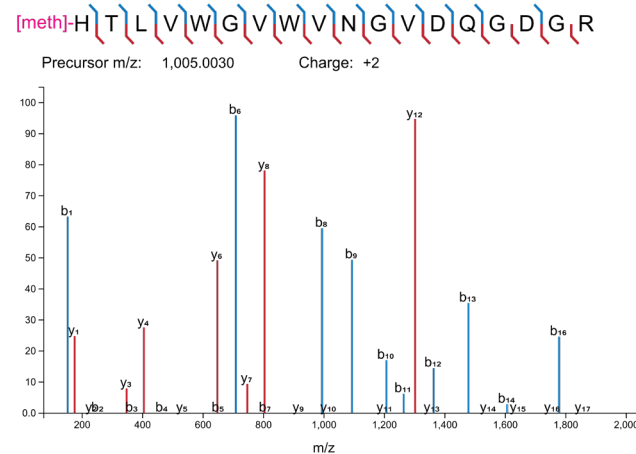
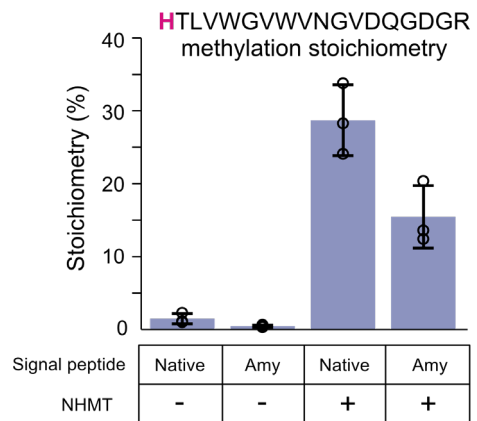
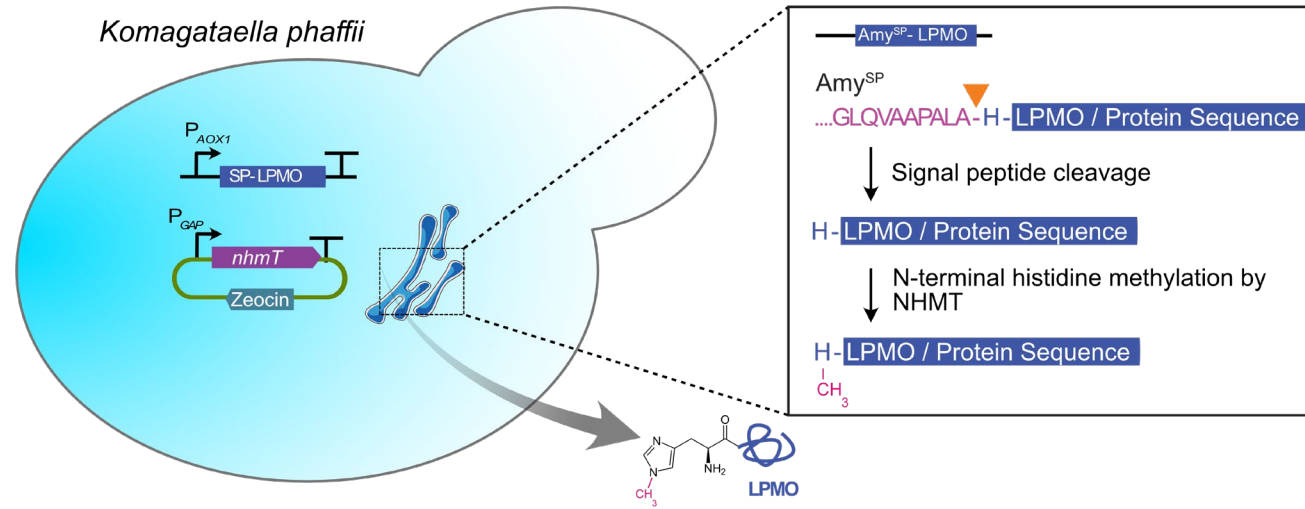
# We found a hit!



# AN4664 – A novel transmembrane NHMT

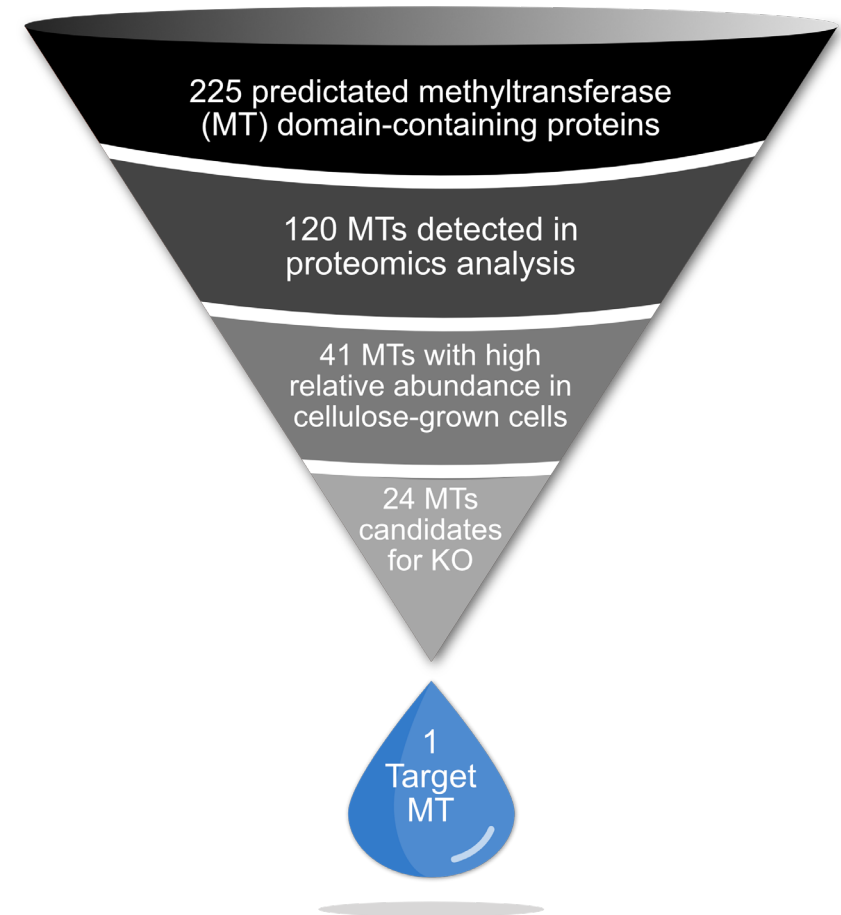


# Production of novel N-term histidine methylated proteins in *Komagataella phaffii*



# Summary

- Exploration of a novel PTM using a combination of discovery and targeted proteomics.
- Discovery proteomics to shortlist potential candidates.
- Targeted proteomics (powered by Skyline) assay to screen CRISPR/Cas9 knockout
- NHMT is a transmembrane protein which can be co-expressed in



# Acknowledgement

- HOPE consortium
- Jesper V. Olsen
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- Morten Nørholm
- Jakob Hoof
- Søren Brander
- JVO + CPR colleagues



novo  
nordisk  
fonden



Entire MacCoss lab and Skyline team !



# Extra slides

