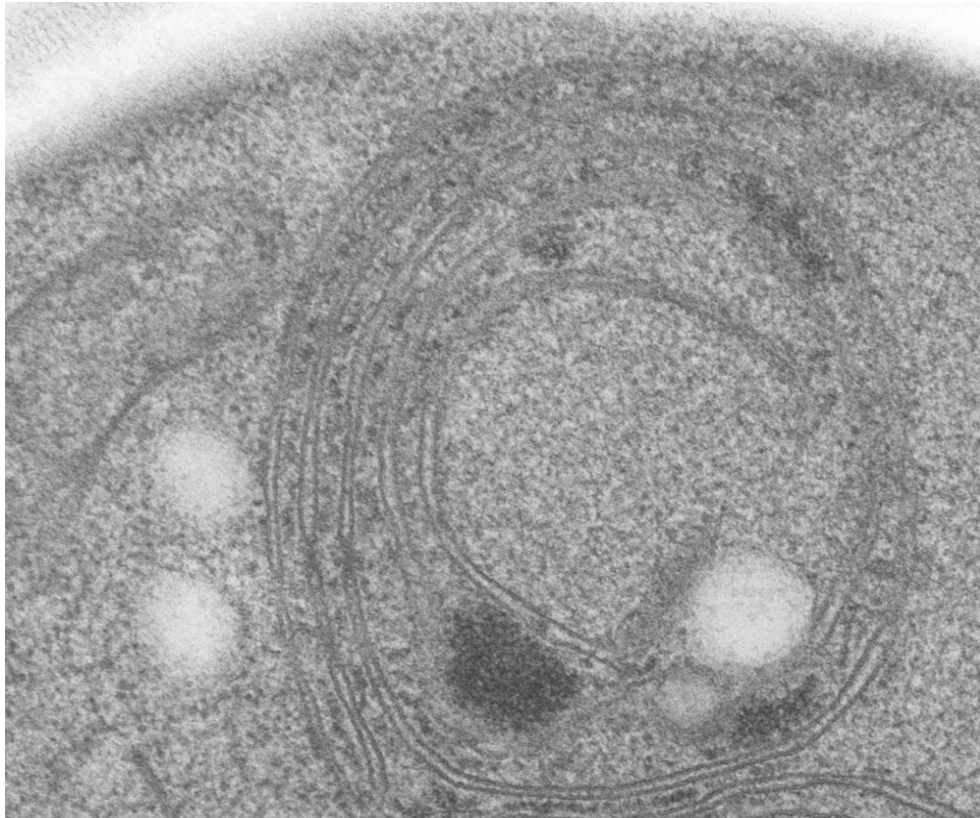


# Structural and functional analysis of eukaryotic biomembranes

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Intranuclear structure caused by Opi1p overproduction

My laboratory is interested in structure and function of biomembranes. Two major projects are ongoing in this laboratory by using the budding yeast *Saccharomyces cerevisiae*.

## 1. Intranuclear membranes caused by the overproduction of Opi1p.

Opi1p is a negative transcriptional factor for phospholipid biosynthetic genes and localizes to ER membranes by interacting with Scs2p, a yeast homolog of human amyotrophic lateral sclerosis 8. Overproduction of Opi1p induces intranuclear membranes that is thought to be formed by invagination of the nuclear/ER membrane. We investigate the molecular basis of this unique membrane structure.

## 2. Production of an algal hydrocarbon, botryococcene in yeast.

Botryococcene, a triterpene, is produced and secreted from the unicellular green alga *Botryococcus braunii* and expected to be used as biofuel. We are constructing botryococcene producing yeasts by introducing algal enzymes for botryococcene synthesis in the yeast *Saccharomyces cerevisiae* for future industrial applications.

Keywords : budding yeast, biomembrane, endoplasmic reticulum, phospholipid