

SELECTED PUBLICATIONS

Differential scaling of gene expression with cell size may explain size control in budding yeast

[Molecular Cell](#) 2020

Chen Y., Zhao G., [Zahumenský J.](#), Honey S., Fitcher B.

We found that yeast cells utilize size-dependent gene expression to regulate the timing of division events. This reveals a simple yet powerful mechanism for size control that may apply broadly across biological systems.

Cortical glia in SOD1(G93A) mice are subtly affected by ALS-like pathology

[Scientific Reports \(Nature\)](#) 2023

Filipi T., Matúšová Z., Abaffy P., Vaňátko O., Turečková J., Benešová Š., Kubísková M., Kirdajová D., [Zahumenský J.](#), Valihrach L., Anděrová M.

Using a well-described mouse model of ALS, we found that the disease affects spinal cord cells more severely than brain cells, indicating region-specific disease progression.

Live cell fluorescence microscopy—an end-to-end workflow for high-throughput image and data analysis

[Biology Methods and Protocols](#) 2024

[Zahumenský J.](#), Malínský J.

We developed a reproducible, high-throughput workflow for automated analysis of live-cell fluorescence microscopy data. The workflow is based on automated cell segmentation, custom Fiji (ImageJ) and R scripts.

Microdomain protein Nce102 is a local sensor of plasma membrane sphingolipid balance

[Microbiology Spectrum](#) 2022

[Zahumenský J.](#), Fernandes C. M., Veselá P., Del Poeta M., Konopka J. B., Malínský J.

We demonstrated that the yeast protein Nce102 senses local sphingolipid levels to regulate fungal plasma membrane composition, providing insights into the development of novel antifungal strategies.

Role of MCC/eisosome in fungal lipid homeostasis

[Biomolecules](#) 2019

[Zahumenský J.](#), Malínský J.

In this review, we explore the MCC/eisosome, a unique lipid-rich microdomain in fungal plasma membranes, and its vital role in maintaining lipid balance.