Summary of: Competitive Growth Assay of Mutagenized Chlamydomonas reinhardtii Compatible With the International Space Station Veggie Plant Growth Chamber

Key findings:

- Commercial FEP tissue culture bags can support robust growth of Chlamydomonas reinhardtii in the Veggie plant growth chamber on the ISS.

- Mutagenesis using UVC light induced mutations in Chlamydomonas strains.

- Mutagenesis increased cell doubling time and biomass production.

- Novel mutations were enriched for transversions and nonsynonymous mutations.

- Genes enriched for positive selection were related to DNA repair, RNA processing, translation, cytoskeletal motors, kinases, and ABC transporters.

- Mutagenesis did not significantly reduce biomass compared to non-mutagenized cultures.

- Mutagenesis increased cell density and biomass over multiple passages.

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