

## Loss of *ncm*<sup>5</sup> and *mcm*<sup>5</sup> wobble uridine side chains results in an altered metabolic profile

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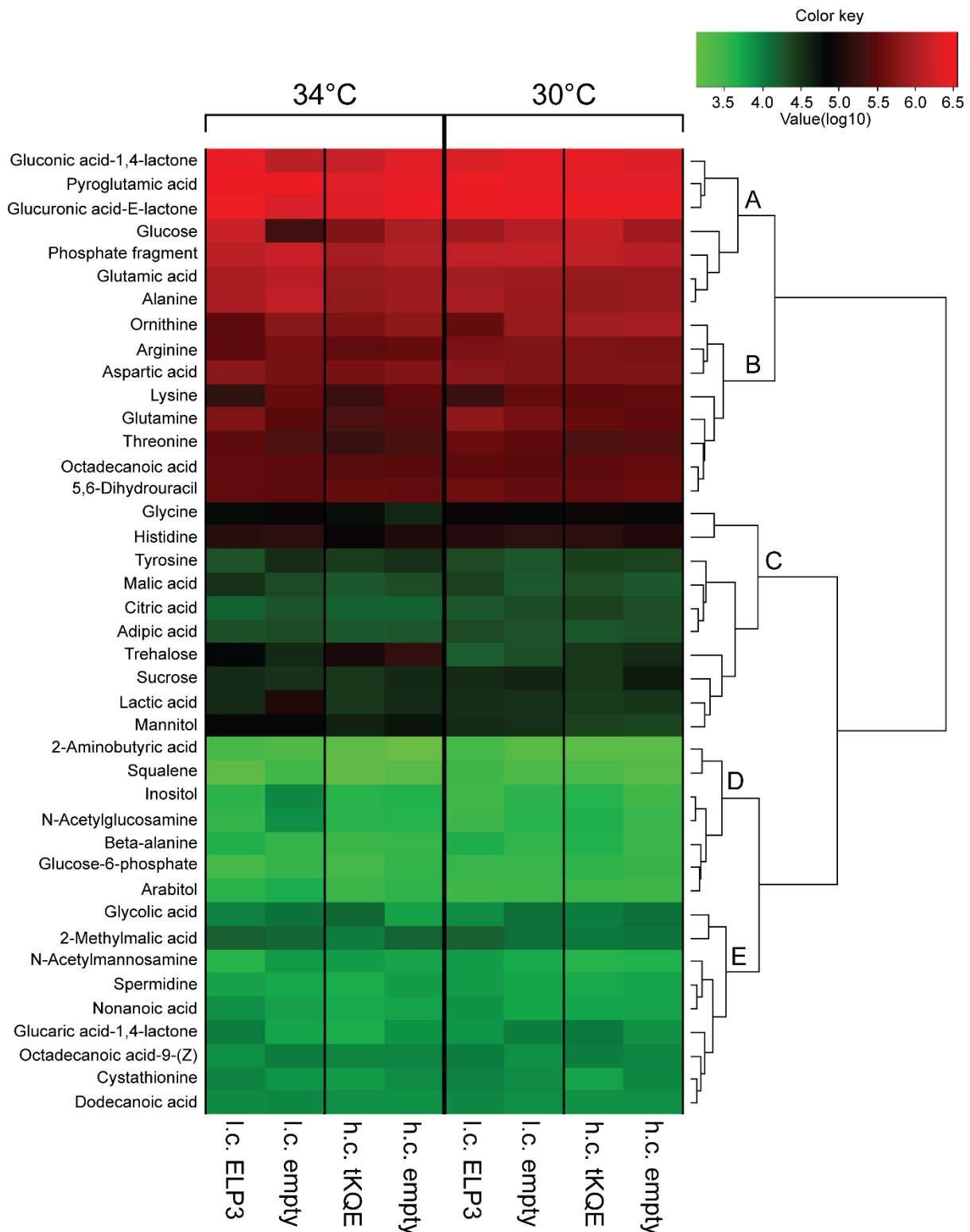
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Metabolomics-Springer



**Online Resource 2. Hierarchical clustering of metabolites from strains containing indicated plasmids.** The UMY4239 *elp3Δ* strains contained either: an empty pRS315 low copy vector (l.c. empty); a pRS315 vector carrying the wild-type *ELP3* gene (l.c. ELP3); an empty pRS425 high copy vector (h.c. empty); or a pRS425 high copy vector carrying the tRNA genes *tK(UUU)*, *tQ(UUG)* and *tE(UUC)* (h.c. tKQE). These yeast strains were grown logarithmically

to ~0.5 OD<sub>600</sub> at 30°C or 34°C and harvested. Metabolites were extracted and then quantified using GC-TOF-MS. Hierarchical clusters are labeled from A to E based on metabolite abundance. Red signifies metabolite enrichment and green signifies metabolite reduction.