

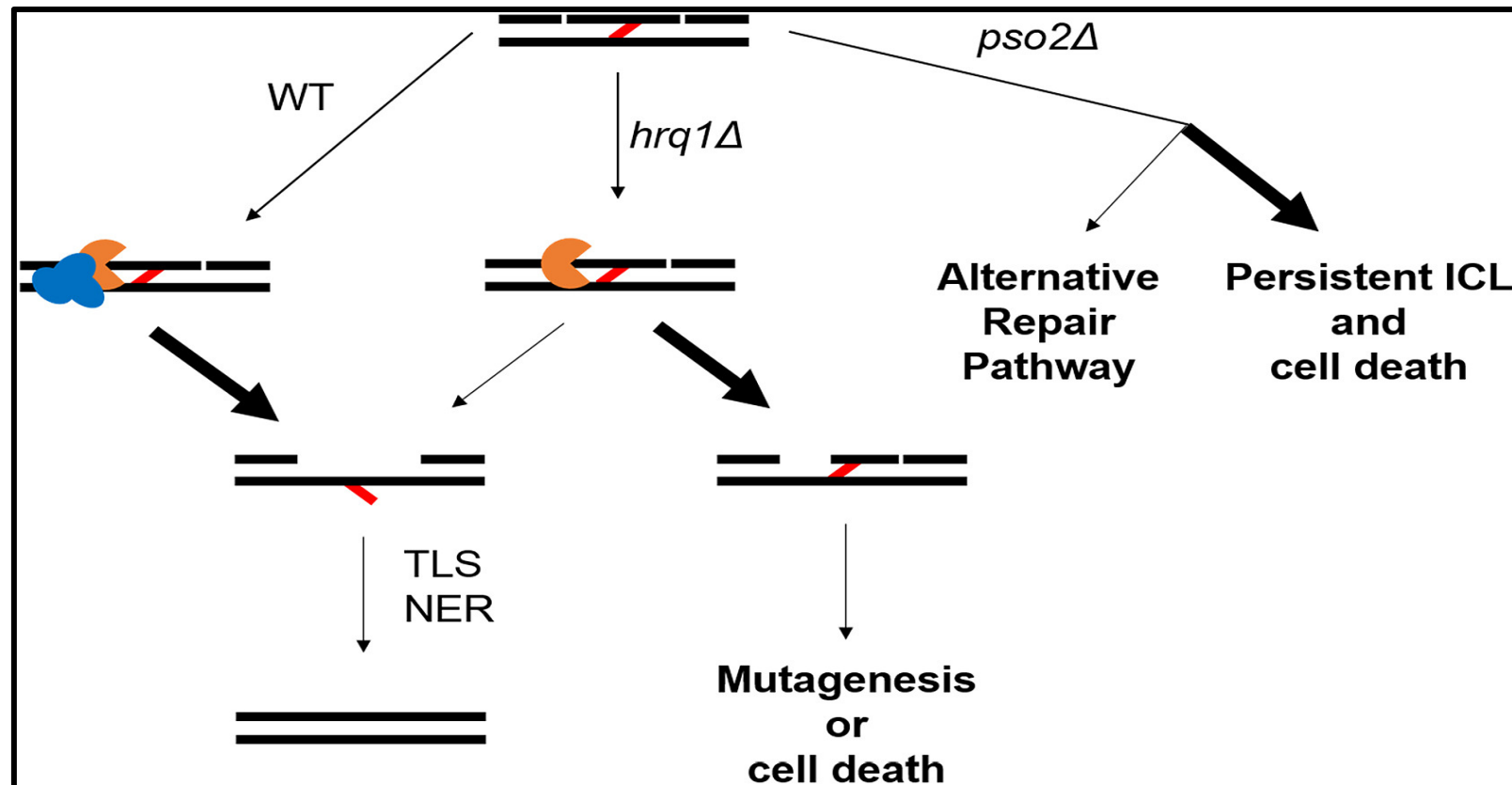
The roles of Hrq1 in ICL repair (and beyond)



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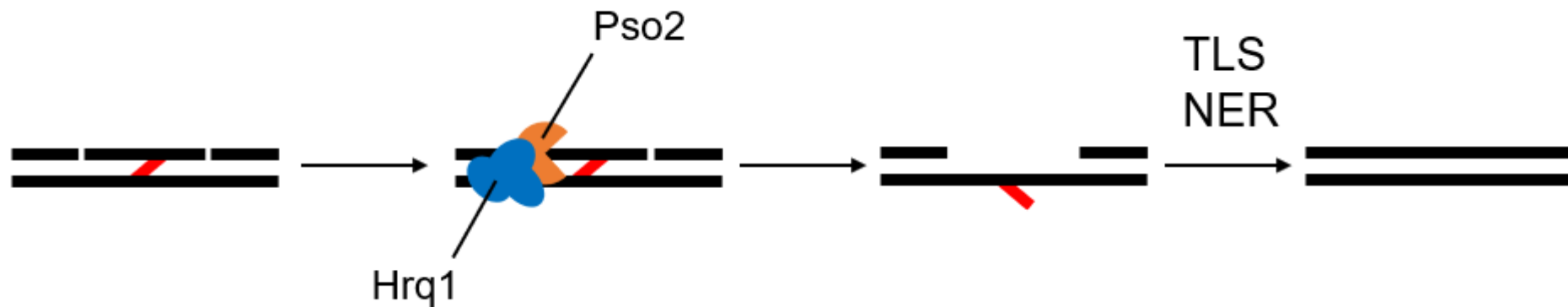
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Introduction

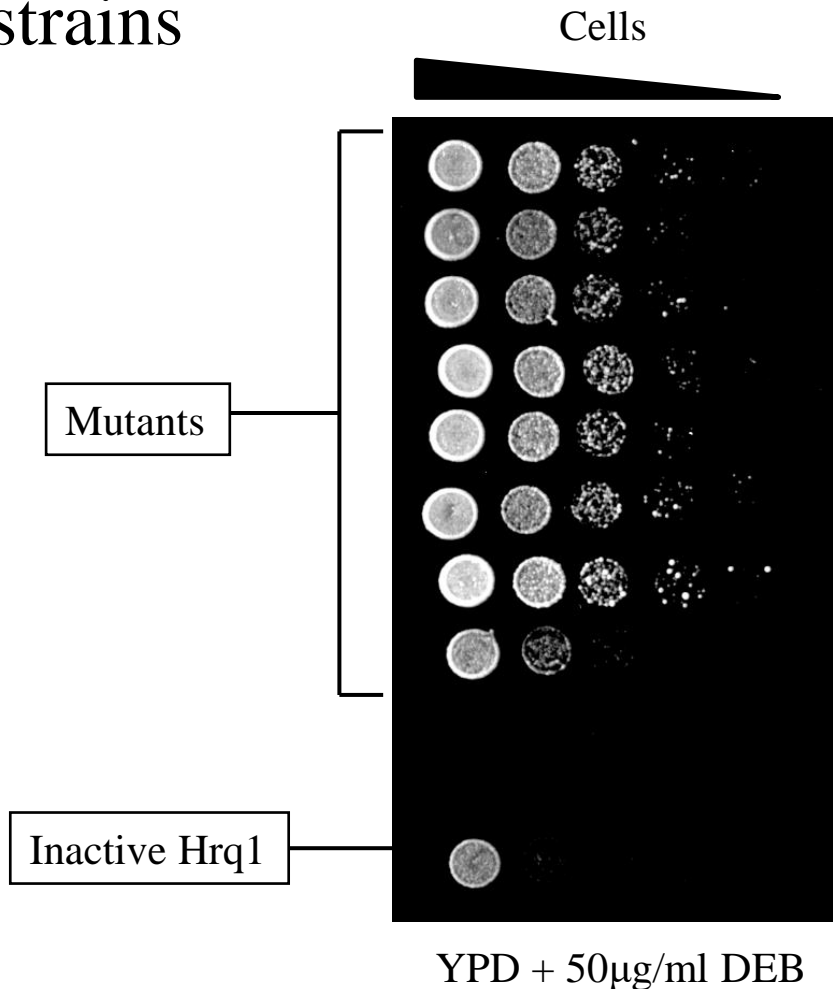
- The RecQ family helicases are involved in maintaining genome integrity.
- RecQL4 mutations: Baller-Gerold, RAPADILINO, and Rothmund-Thomson syndromes



Methods

Hrq1 mutant generation

- Screen for secondary mutations in catalytically inactive Hrq1 strains

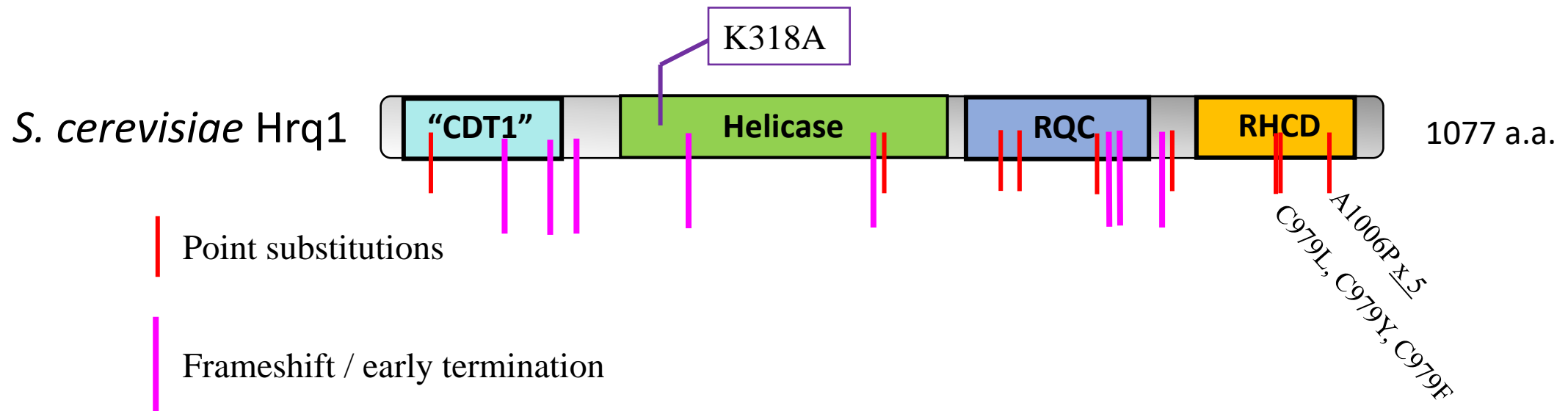


Multi-omics

- Synthetic genetic array (SGA)
 - Gene deletions
 - Temperature sensitive alleles
- RNAseq
- Proteomic pull-down + mass spectroscopy

Results

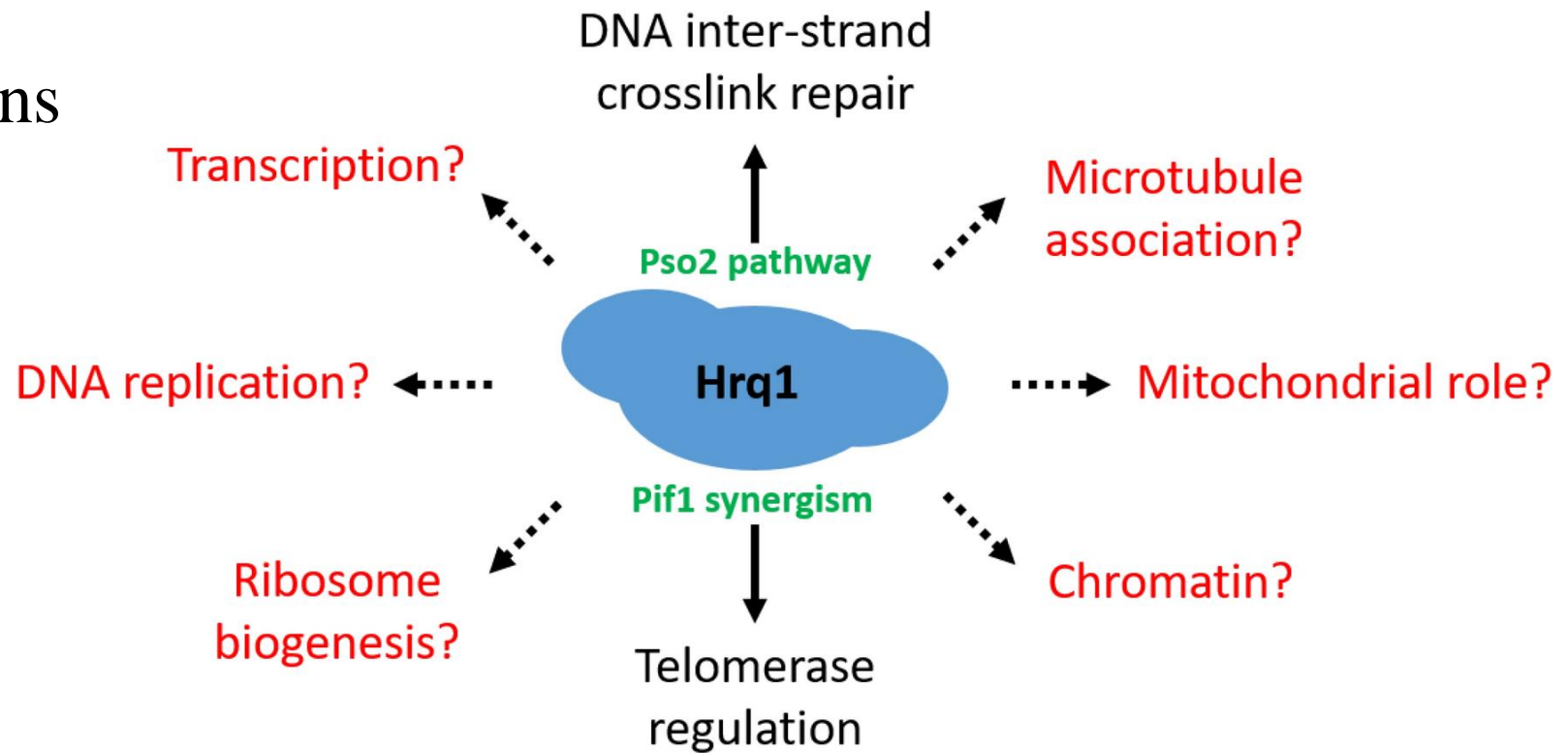
- Hrql gene sequence from 26 suppressive mutants
- 24 secondary mutations of *hrq1-K318A* found



Results cont.

- Positive and negative genetic interactions
- Physically interacting proteins
- Changes in transcriptome

- Grouped by GO terms



Conclusions and Future Directions

- Large amount of preliminary data to available to investigate.
- Investigate the repetitive double mutations found in *hrq1-K318A* strains
- Repeat multi-omics approach under ICL stress conditions to enrich for DNA repair specific interactions.