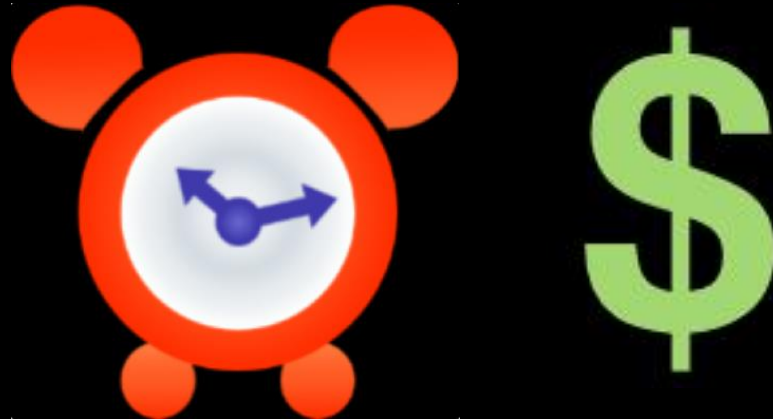


Progress on the co-crystallization
of *Thermoplasma acidophilum*
nucleoside kinase (TaNK) with
substrates

Jessica Yoo
Columbus Lab
CSS Symposium

Protein Misannotation

- High as 80% for some protein families¹
- Accuracy
- Time, man-hours, money



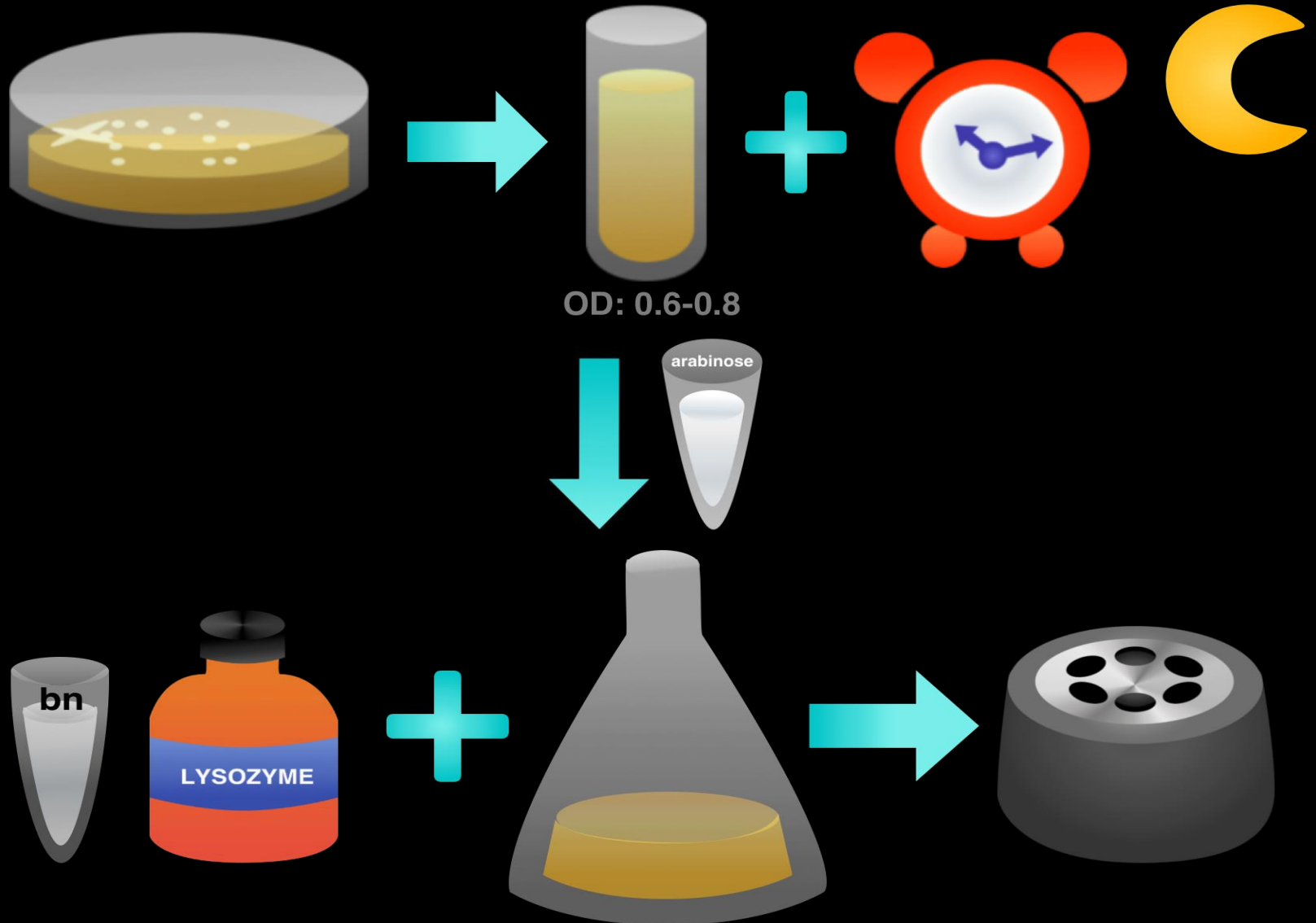
Why TaNK?

Improve our understanding of structure-function relationships

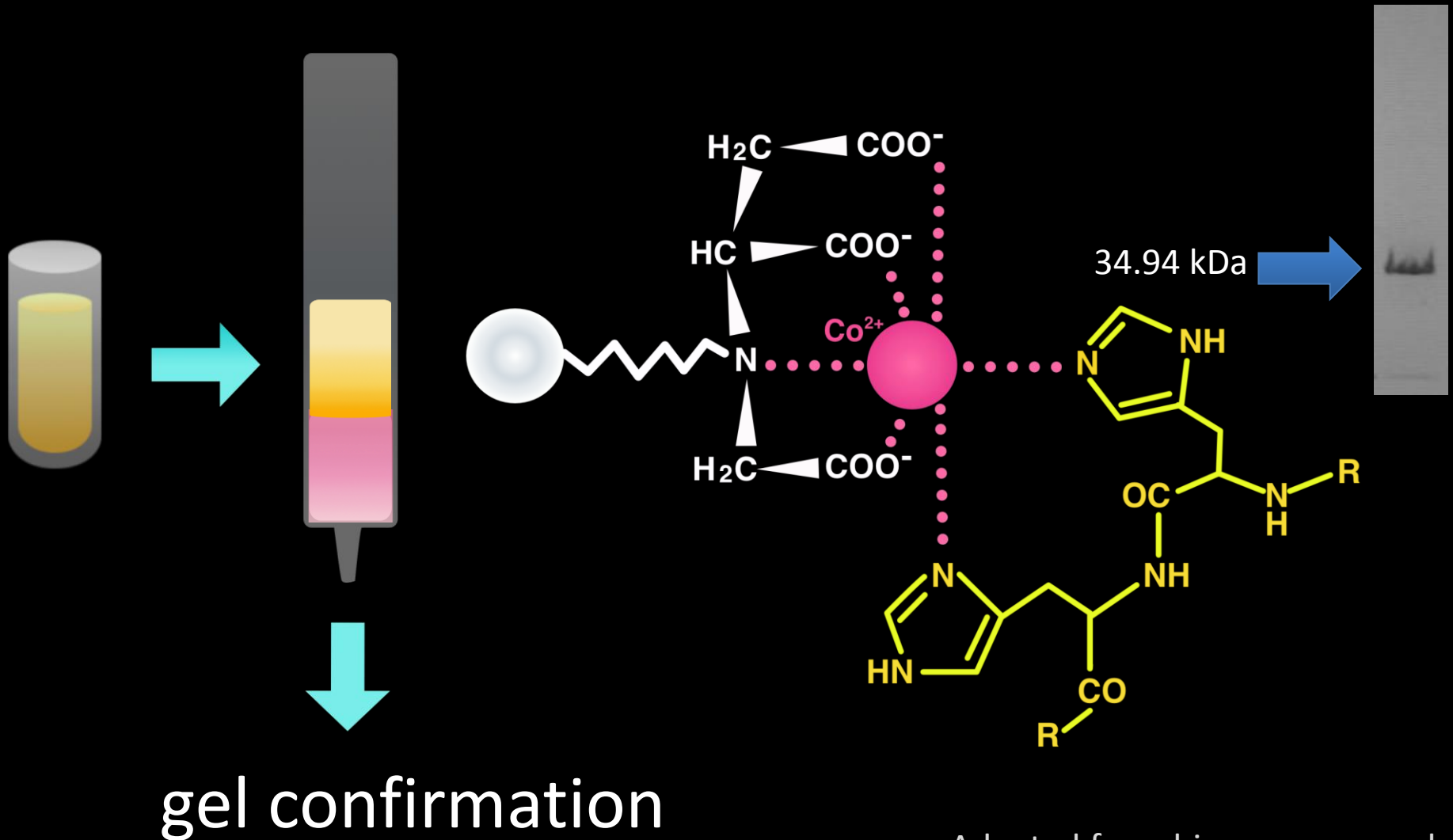
1. Nucleoside kinase vs. ribokinase

2. Broad-range specificity

Production of Protein

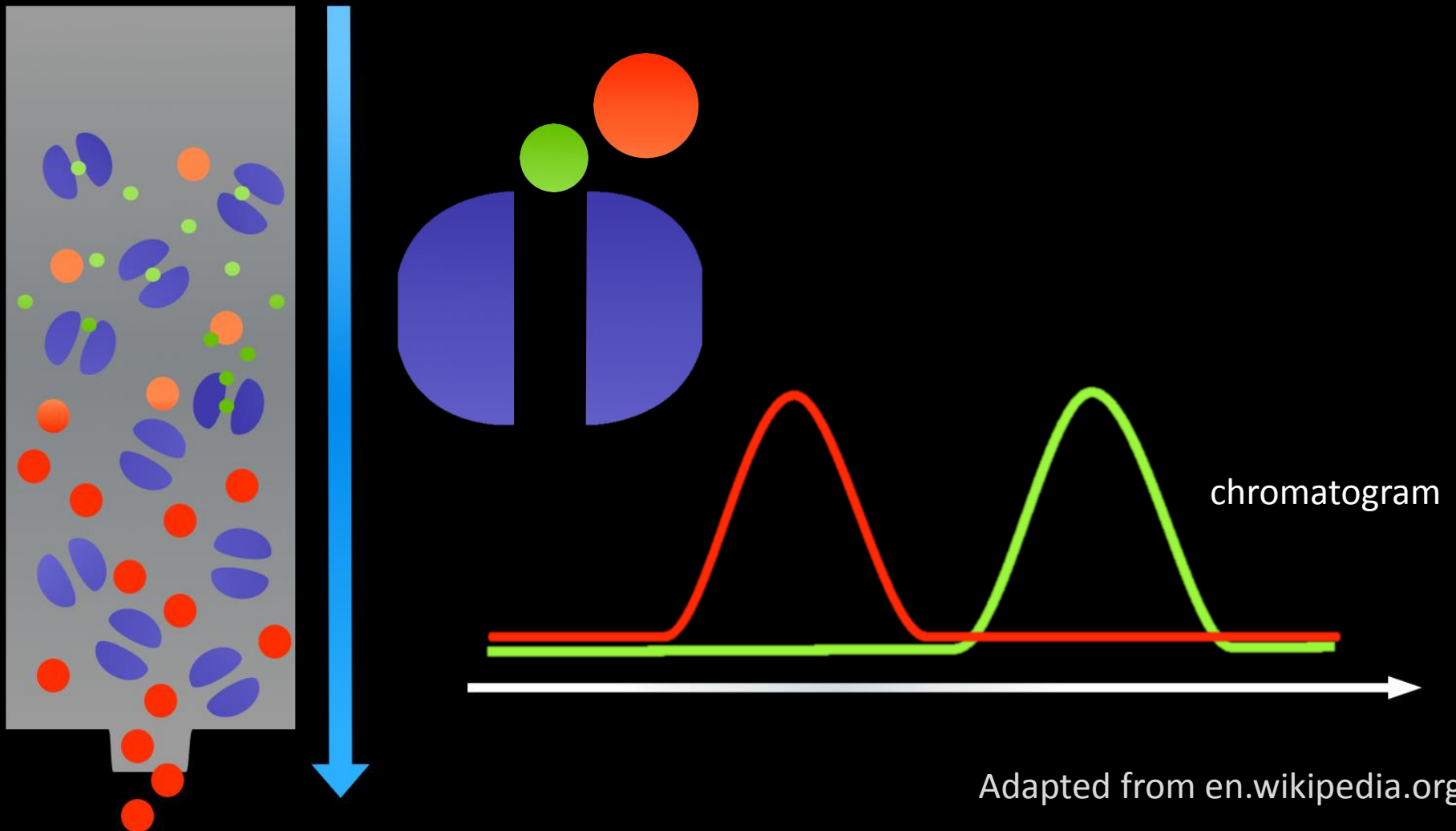


Immobilized Metal Affinity Chromatography



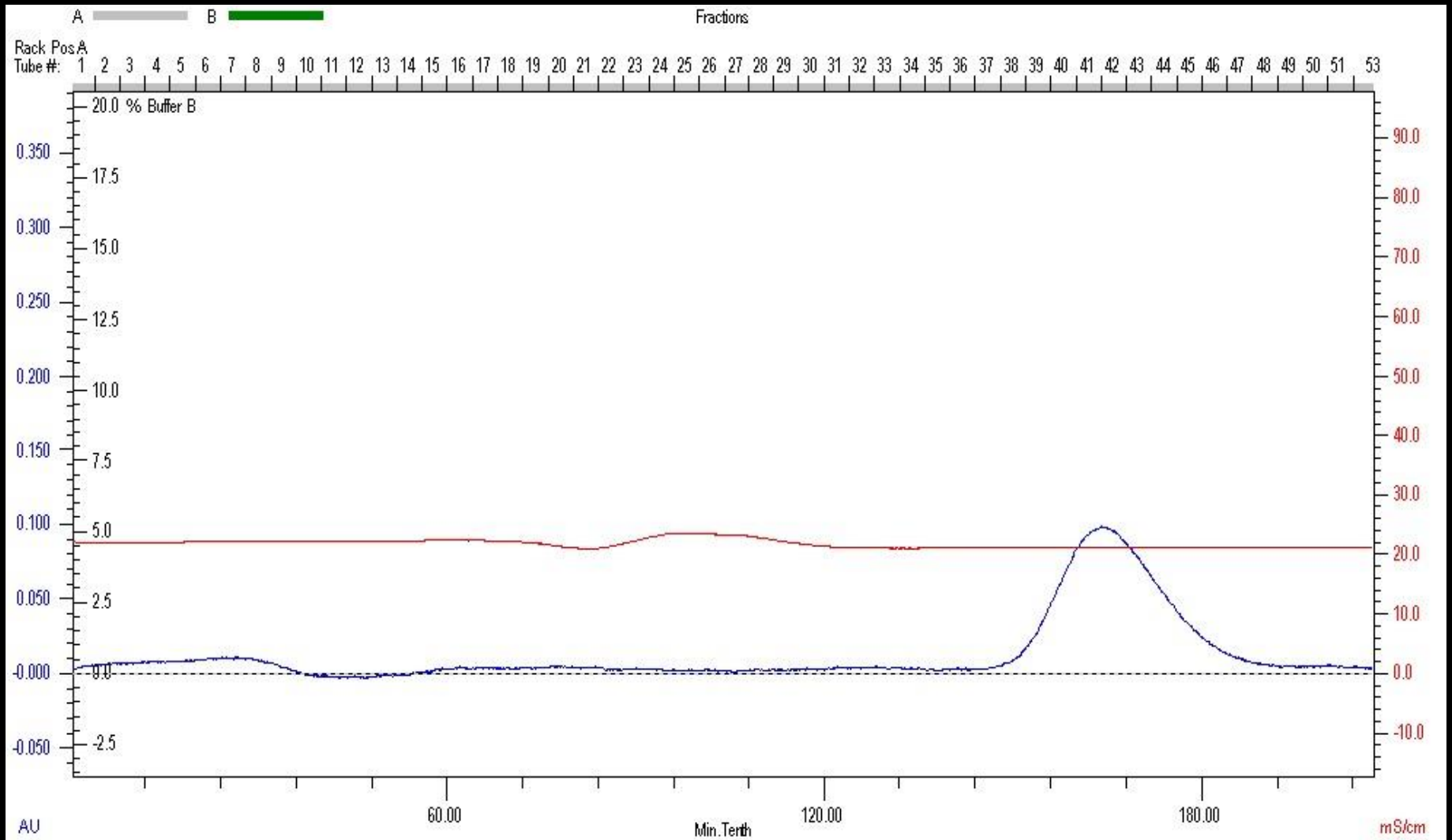
Adapted from bioenergy.asu.edu

Size Exclusion Chromatography



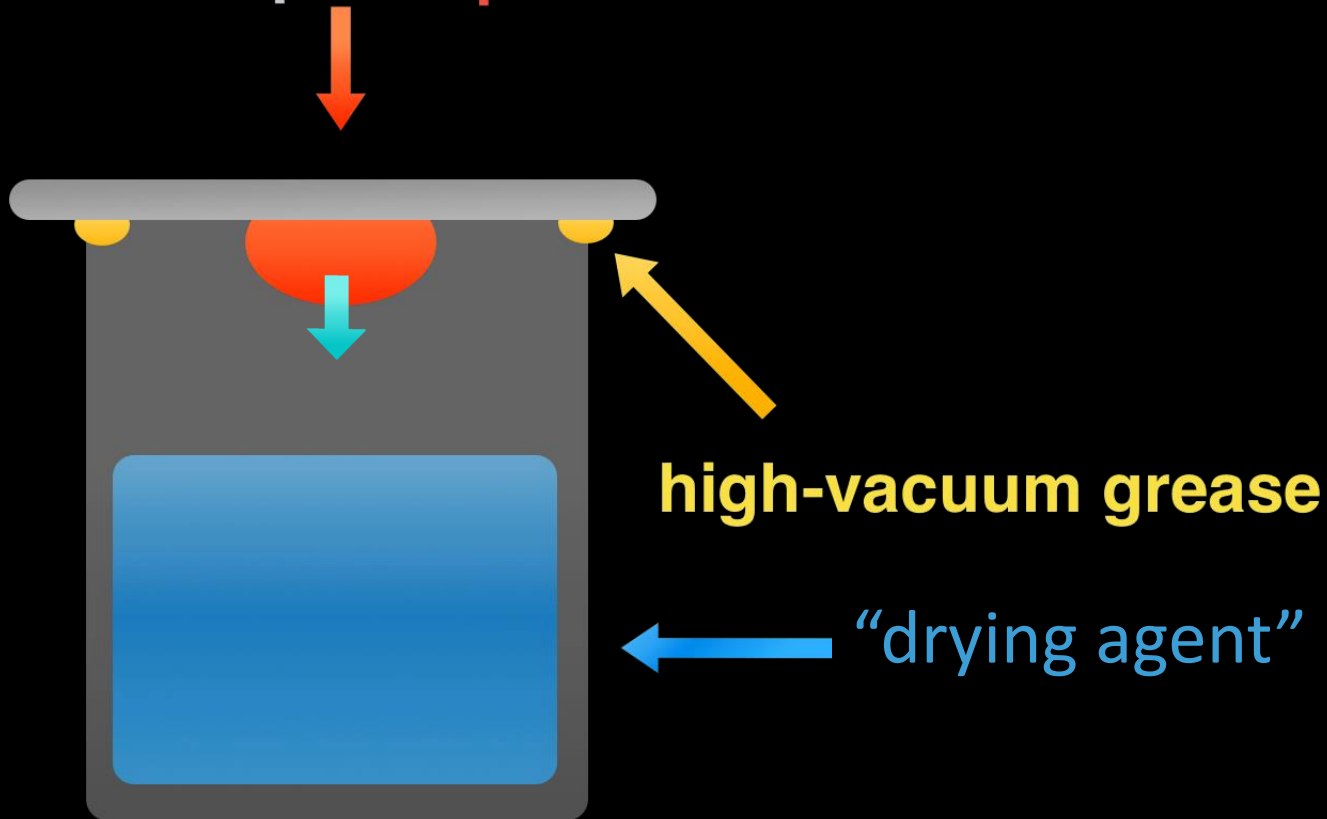
Adapted from en.wikipedia.org

Chromatogram

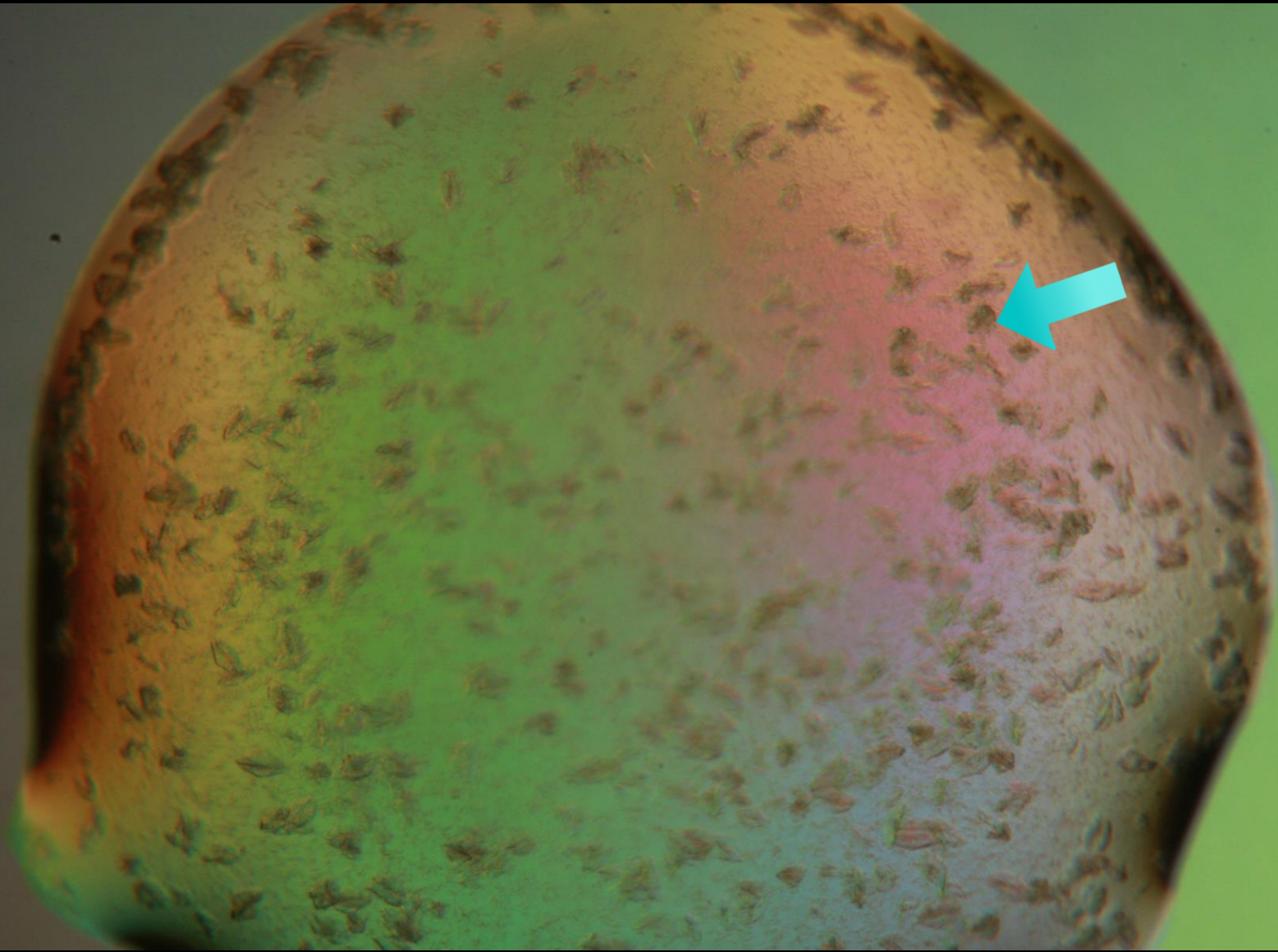


Crystallization

coverslip with **protein**



Adapted from www.bio.davidson.edu



1 nanoliter

Present and Future

- Protein successfully expressed and purified
- Protein crystallized in nL quantities
- Crystallization conditions optimized

- nL \rightarrow μ L
- More screening for optimal conditions
- X-ray crystallography

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