BRC Science Highlight
April 2018

New Quantitative Proteomics Technology Improves Data Quality and Reduces Cost

Background/objective

Quantitative proteomics is a promising technique that allows the quantification of thousands of proteins among multiple conditions, e.g. perturbations, time points, or organelles. Nevertheless, current technology lacks the sensitivity required to measure low-abundance proteins and suffers from poor measurement accuracy or precision.

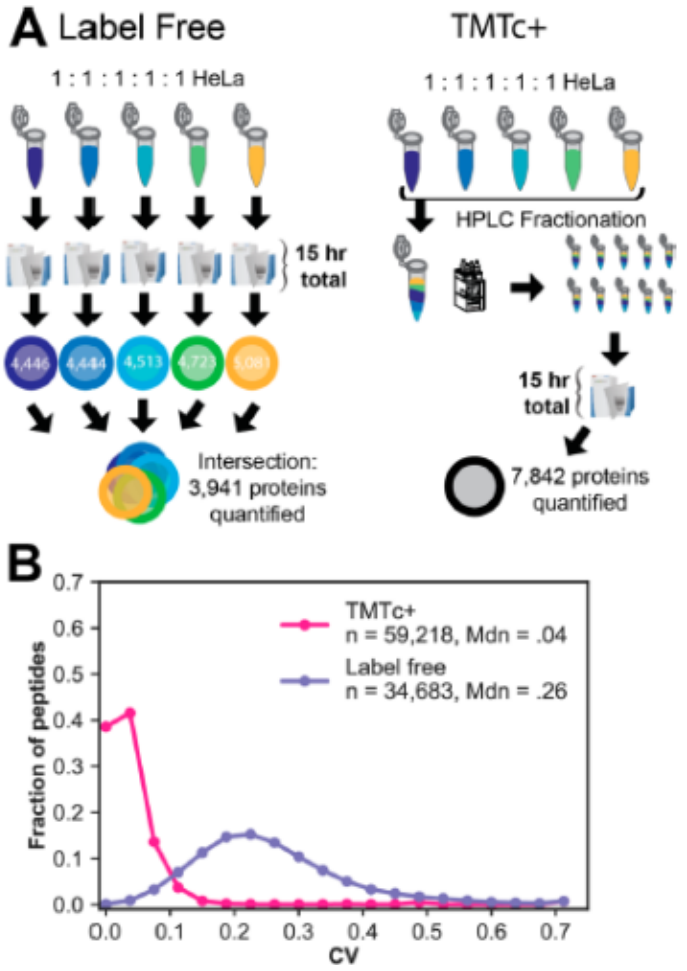
Approach

- We have developed a new quantification strategy called TMTc+, that makes use of so-called "complement reporter ions".

Results

- TMTc+ permits the simultaneous measurement of thousands of proteins among multiple conditions with unprecedented sensitivity and quality.

- TMTc+ is compatible with comparatively simple instrumentation, thereby reducing cost and increasing access for researchers.



Significance

- TMTc+ advances quantitative proteomics and will enable us to more accurately measure protein-abundances in yeast strains. This information will help us to better understand metabolic regulation and inform engineering strategies.

Sonnett M., Young, E., Wühr, M. 2018. "Accurate, Sensitive, and Precise Multiplexed Proteomics Using the Complement Reporter Ion Cluster." ***Analytical Chemistry****. https://pubs.acs.org/doi/abs/10.1021/acs.analchem.7b04713*

CABBI
CENTER FOR ADVANCED BIOENERGY AND BIOPRODUCTS INNOVATION

U.S. DEPARTMENT OF ENERGY