

Robust Sample Preparation for Label-free or Tandem Mass Tag (TMT) LC-MS with Adaptive Focused Acoustics® (AFA®)

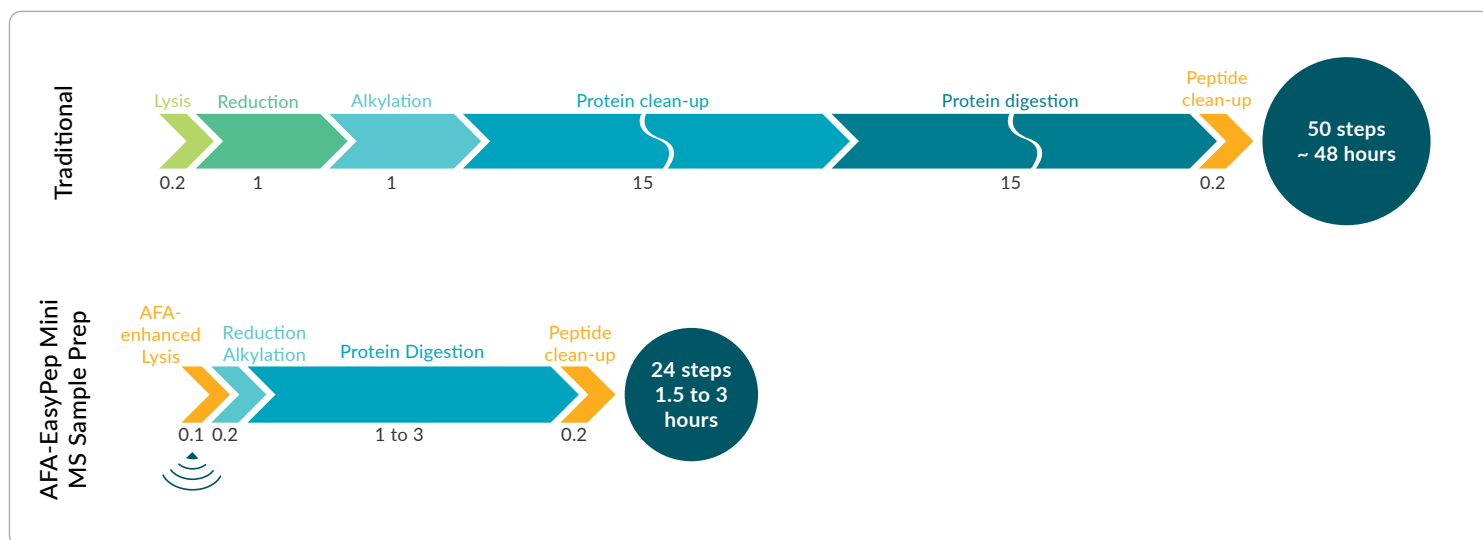
Scientific Relevance

Data quality is significantly impacted by the efficiency, reproducibility and reliability of sample preparation workflows. Proteomics analytical methods require robust, reproducible and streamlined protocols using precise instruments and high quality reagents.

Challenges

- Efficient and reproducible lysis
- Hands-on time/number of steps
- Sample viscosity

Workflow



Advantages of the Covaris Workflow

- Adaptive Focused Acoustic treatment is compatible with challenging samples (fresh tissues [1], LCM [2], FFPE scrolls [3]), and efficiently restores sensitive proteins (phosphoproteins, membrane proteins) [4,5]
- Established protocols are available and automatable in 8-Strip, 96-well and 384-well plates
- Compatible with TMT labeling

Suggested Products

- Covaris Instruments: [ML230](#), [LE220Rsc](#), and [R230](#)
- Covaris Consumables: [8 AFA-TUBE TPX Strip](#), [96 AFA-TUBE TPX Plate](#), and [384 AFA-TUBE 20 PP Plate](#)
- Thermo Scientific™ EasyPep™ Mini MS Sample Prep Kit PN A40006
- Thermo Scientific™ Orbitrap Tribrid Fusion Lumos™

References

1. Automated sample preparation with SP3 for low-input clinical proteomics, Mueller et al., Mol Syst Biol (2020)16:e9111 DOI: [10.15252/msb.20199111](https://doi.org/10.15252/msb.20199111)
2. Laser capture microdissection coupled mass spectrometry (LCM-MS) for spatially resolved analysis of formalin-fixed and stained human lung tissues. Herrera et al., Clin Proteom (2020) 17:24. DOI: [10.1186/s12014-020-09287-6](https://doi.org/10.1186/s12014-020-09287-6)
3. Schweitzer et al., AFA-sonication Followed by Modified Protein Aggregation Capture (APAC) Enables Direct, Reproducible and Non-toxic Sample Preparation of FFPE Tissue for Mass Spectrometry based Proteomics. [Covaris Application Note M020141](#)
4. Multi-level proteomics reveals host-perturbation strategies of SARS-CoV-2 and SARS-CoV. Stukalov et al., bioRxiv 2020 – DOI: [10.1101/2020.06.17.156455](https://doi.org/10.1101/2020.06.17.156455)
5. A paired liver biopsy and plasma proteomics study reveals circulating biomarkers for alcohol-related liver disease, Niu et al., bioRxiv 2020 - DOI: [10.1101/2020.10.16.337592](https://doi.org/10.1101/2020.10.16.337592)

EasyPep™ and Orbitrap Tribrid Fusion Lumos™ are registered trademark of Thermo Scientific.

Information subject to change without notice. For research only. Not for use in diagnostic procedures.

Stay Connected!