

Histone Modification Screening using Liquid Chromatography, Trapped Ion Mobility Spectrometry, and Time-Of-Flight Mass Spectrometry

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Materials

| Name | Company | Catalog Number | Comments |
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| -80 °C Freezer | | | |
| 1x Phosphate Buffered Saline (PBS), pH 7.4 | Thermo Fisher Scientific | 10010023 | Animal Origin-Free |
| 1 mL Pipette Tips | Thermo Fisher Scientific | 94060710 | Finntip Flex 1000 µL, nonsterile, nonfiltered, racked tips |
| 1.5 mL Microcentrifuge Tubes | Thermo Fisher Scientific | 14-282-300 | Use these tubes for the simple and safe processing of sample volumes up to 1.5 mL |
| 10 µL Pipette Tips | Thermo Fisher Scientific | 94060100 | Finntip Flex, 10 µL, nonsterile, non-filtered, racked |
| 10% NP-40 | Thermo Fisher Scientific | 28324 | NP-40 Surfact-Amps Detergent Solution |
| 10x Dulbecco's PBS without Ca ²⁺ /Mg ²⁺ | (Mediatech) | MT21031CM | |
| 15 mL Conical Tubes | Corning | 352196 | Falcon Conical Centrifuge Tubes |
| 200 µL Gel-Loading Pipette Tips | Thermo Fisher Scientific | 02-707-138 | Fisherbrand Gel-Loading Tips, 1–200 µL |
| 200 µL Pipette Tips | Thermo Fisher Scientific | 94060310 | Finntip Flex 200µL, nonsterile, nonfiltered, racked tips |
| 2x Laemmli Sample Buffer | Bio-Rad | 1610737 | Premixed protein sample buffer for SDS-PAGE |
| 50 mL Conical Tubes | Corning | 352070 | Falcon Conical Centrifuge Tubes |
| 96-well flat bottom plate | Thermo Fisher Scientific | 12565501 | |
| 96-well plate, V-Bottom 600 µL | Axygen | P-DW-500-C-S | |
| Acetone | Sigma Aldrich | 179124 | ACS reagent, ≥99.5% |
| Acetonitrile (ACN) | Thermo Fisher Scientific | A998 | HPLC, Fisher Chemical |

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| Acetonitrile with 0.1% Formic acid (v/v), LC/MS Grade | Thermo Fisher Scientific | LS120 | Optima LC/MS Grade, Thermo Scientific |
| AEBSF | Thermo Fisher Scientific | 328110500 | AEBSF hydrochloride, 98% |
| Ammonium bicarbonate, NH ₄ HCO ₃ | Sigma Aldrich | 09830 | BioUltra, ≥99.5% (T) |
| Ammonium hydroxide solution, NH ₄ OH | Sigma Aldrich | AX1303 | Meets ACS Specifications, Meets Reagent Specifications for testing USP/NF monographs GR ACS |
| Argon (Ar) | Airgas | AR HP 300 | |
| BEH C ₁₈ HPLC column | Waters | 186003625 | XBridge Peptide BEH C ₁₈ Column, 300 Å, 5 µm, 4.6 mm X 250 mm, 1K-15K |
| Bovine Serum Albumin (BSA) | Sigma Aldrich | A7906 | Heat shock fraction, pH 7, ≥98% |
| Calcium chloride, CaCl ₂ | Sigma Aldrich | C4901 | Anhydrous, powder, ≥97% |
| Cell dissociation buffer | Thermo Fisher Scientific | 13151014 | |
| Ceramic scoring wafer | Restek | 20116 | |
| Compass DataAnalysis 6.0 | Bruker Daltonics | | |
| Compass HyStar 6.2 | Bruker Daltonics | | |
| Compass IsotopePattern | Bruker Daltonics | | |
| Compass timsControl 4.1 | Bruker Daltonics | | |
| Coomassie Brilliant Blue R-250 | Bio-Rad | 1610436 | |
| Deep Well, 96-Well Microplate, 2.0 mL | Thermo Fisher Scientific | 89237526 | |
| Disposable Cell Lifters | Thermo Fisher Scientific | 08100240 | Fisherbrand Cell Lifters; Disposable lifters quickly remove cell layers |
| Disposable Pellet Pestles | Thermo Fisher Scientific | 12-141-363 | Fisherbrand Pellet Pestles; Resuspend protein and DNA pellets or grind soft tissue in microcentrifuge tubes |
| Dithiothreitol (DTT) | Thermo Fisher Scientific | P2325 | 1 M |
| Formic acid (FA) | Sigma Aldrich | 695076 | ACS reagent, ≥96% |
| Fused silica capillary 75 µm ID x 363 µm OD | (Molex (Polymicro)) | TSP075375 | |
| Glacial Acetic Acid | Thermo Fisher Scientific | A38S | Acetic Acid, Glacial (Certified ACS), Fisher Chemical |
| Glass Pasteur Pipettes | Sigma Aldrich | BR747725-1000EA | |
| High-Performance Liquid Chromatograph | Shimadzu | | Shimadzu Prominence 20 HPLC UFLC System |
| Hydrochloric acid, HCl | Sigma Aldrich | 258148 | ACS reagent, 37% |
| Hypercarb 30-40 µm Carbon 150-300 Å | Thermo Fisher Scientific | 60106-402 | |
| Hypersep cartridge | Thermo Fisher Scientific | 60109-404 | |
| LC/MS Calibration Standard, for ESI-ToF | Agilent | G1969-85000 | TuningMix |
| Magnesium chloride, MgCl ₂ | Sigma Aldrich | M8266 | Anhydrous, ≥98% |
| Methanol, for HPLC | Thermo Fisher Scientific | A454 | Optima for HPLC, Fisher Chemical |
| Microcentrifuge Tube Adapters | GL Sciences | 501021514 | |
| Microcystin | Thermo Fisher Scientific | 50-200-8727 | Enzo Life Sciences Microcystin-LA |
| MS sample vial, LaPhaPack, Snap, 12 mm x 32 mm | LEAP PAL Parts | LAP.11190933 | |
| Nanodrop | Thermo Fisher Scientific | model: ND3300 | |
| Nitrogen (N ₂) | Airgas | NI UHP300 | |
| PEAKS Studio X+ | Bioinformatic Solutions | | |

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| pH indicator strips, Instachek | Micro Essential Lab | JR-113 | Model: Hydrion |
| Potassium chloride, KCl | Sigma Aldrich | P3911 | ACS reagent, 99.0%–100.5% |
| Pressure Injection Cell | Next Advance | model: PC77 | |
| Propionic Anhydride | Sigma Aldrich | 8.00608 | For synthesis |
| Refrigerated Centrifuge (700–18,000 x g) | NuAire, model: Nuwind | NU-C200V | |
| Reposil-Pur 120 C18-AQ 3 µm, 3 g | ESI Source Solutions | r13.aq.0003 | |
| SDS-PAGE Gels | Bio-Rad | 4569035 | Any kD precast polyacrylamide gel, 8.6 cm × 6.7 cm (W × L), for use with Mini-PROTEAN Electrophoresis Cells |
| Sodium butyrate | Thermo Fisher Scientific | A11079.06 | 98+% |
| Sodium chloride, NaCl | Sigma Aldrich | S9888 | ACS reagent, ≥99.0% |
| SPE disk, C18 | VWR | 76333-134 | Empore SPE disk, C18, CDS Analytical, 90 mm x 0.5 mm, 12 µm |
| SpeedVac+ vacuum pump and plate rotor | Savant | model: SC210A | |
| Sucrose | Millipore | 1.07651 | suitable for microbiology |
| Sulfuric acid, H ₂ SO ₄ | Sigma Aldrich | 339741 | 99.999% |
| TIMS-ToF Mass Spectrometer | Bruker Daltonics | | model Tims tof ms |
| Trichloroacetic acid solution, TCA | Sigma Aldrich | T0699 | 6.1 N |
| Trifluoroacetic acid (TFA) | Sigma Aldrich | 302031 | Suitable for HPLC, ≥99.0% |
| Triversa Nanomate | Advion | model: TR263 | |
| TrypsinProtease, MS Grade | Thermo Fisher Scientific | 90057 | |
| Tube rotator | Thermo Fisher Scientific | 88881001 | |
| Vortex Mixer | Thermo Fisher Scientific | 88880017 | |
| Water with 0.1% Formic acid (v/v), LC/MS Grade | Thermo Fisher Scientific | LS118 | Optima LC/MS Grade, Thermo Scientific |