

Microsampling in Targeted Mass Spectrometry-Based Protein Analysis of Low-Abundance Proteins

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Materials

Name	Company	Catalog Number	Comments
Acetic acid N-hydroxysuccinimide ester	Carbosynt (Staad, Switzerland)	FA33719	Store in freezer below -20 °C
ALGNQQPSWDESSNF[K_13C6_15N2] (≥ 95%)	Innovagen (Lund, Sweden)	Not applicable	Store in freezer below -20 °C
Ammonium bicarbonate BioUltra (≥ 99.5%)	Sigma Aldrich (St. Louis, MO, USA)	09830-500G	
Aquasil C18 column, 3 µm, 50 mm x 1 mm	Thermo scientific (Waltham, MA, USA)	77503-051030	Analytical column compatible with 100% aqueous mobile phase
Benzamidine (≥ 95.0%)	Sigma Aldrich (St. Louis, MO, USA)	12072	Store in fridge at 2-6 °C
Calcium chloride dihydrate (≥ 99%)	Sigma Aldrich (St. Louis, MO, USA)	223506-500G	
Centrifuge 5804	Eppendorf (Hamburg, Tyskland)	5804000010	
Cloned ProGRP isoform 1	Radium hospital, Oslo University Hospital (Oslo, Norway)	Not applicable	Store in freezer below -20 °C
Disodium hydrogenphosphate dihydrate (pro analysis)	Sigma Aldrich (St. Louis, MO, USA)	30435-500G	
Disodium hydrogenphosphate dodecahydrate (pro analysis)	Merck (Darmstadt, Tyskland)	1.06579.0500	
Dynabeads M-280 tosylactivated 10 mL	Invitrogen (Carlsbad, USA)	14204	Store in fridge at 2-6 °C
DynaMag-2	Invitrogen (Carlsbad, USA)	123-21D	
Ethanolamine (pro analysis, ≥ 99%)	Sigma Aldrich (St. Louis, MO, USA)	#02400	
Formic acid (≥ 99%) for LC-MS	VWR International (Radnor, PA, USA)	84865.260	
FTA DMPK-C cellulose card	Whatman (Kent, UK)	WB129243	DBS card
HPLC vials, clear glass, 1.5 mL, 32 x 11.6 mm, Clean Pack	Nerliens Meszansky (Oslo, Norge)	LPP 11 09 0519	
Hulamixer sample mixer	Invitrogen (Carlsbad, USA)	101561503016	Sample mixer with end-over-end mixing and reciprocal rotation and vibration
Human serum from healthy blood donors	Bloodbank, Ullevål, Oslo University Hospital (Oslo, Norway)	Not applicable	Store in freezer below -20 °C

Hydrochloric acid fuming 37% (Emsure for analysis)	Merck (Darmstadt, Tyskland)	1.00317.1000	
LC-MS/MS system: Ultimate 3000 system (Autosampler, WPS-3000TRS; Micropump, LPG-3400M; Flow manager, FLM-3300, MIC, 1X2P-10P) and TSQ Quantum access. Controlled by Xcalibur 2.2 SP1.48	Thermo scientific (Waltham, MA, USA)	Not applicable	
LiChrosolv Acetonitrile hypergrade for LC-MS	Merck (Darmstadt, Tyskland)	1.00029.2500	
LL Biotrode, Combined glass electrode	Metrohm (Herisau, Sveits)	6.0224.100	
Magnetic stirrer, Type M10	Franz Morat KG (Eisenbach, Germany)	10236	
Micro inserts, glass (31 x 6 mm, 0.1 mL)	VWR International (Radnor, PA, USA)	548-0006	
MilliQ integral 3 with Q-POD	Merck Millipore (Molsheim, France)	ZRXQ003T0	For production of Type 1 water
monoclonal antibody M18	Radium hospital, Oslo University Hospital (Oslo, Norway)	Not applicable	Store in fridge at 2-6 °C
Neoteryx Mitra micro sampler (10 µL) 4 sampler Clamshell	Fisher Scientific (Waltham, MA, USA)	NC1382947	
NHS-activated sepharose beads 4 fast flow	Sigma Aldrich (St. Louis, MO, USA)	GE17-0906-01	Agarose beads, store in fridge at 2-6 °C
Optifit, Refill pipet tips, 10 mL	Sartorius Biohit (Helsinki, Finland)	613-2911	
Optifit, Refill pipet tips, 10 µL	Sartorius Biohit (Helsinki, Finland)	790012	
Optifit, Refill pipet tips, 1,000 µL	Sartorius Biohit (Helsinki, Finland)	791002	
Optifit, Refill pipet tips, 200 µL	Sartorius Biohit (Helsinki, Finland)	790202	
pH glass electrode	Metrohm (Herisau, Sveits)	6.0233.100	
pH meter 744	Metrohm (Herisau, Sveits)	8.744.1003	
Pipet 10 mL	Sartorius Biohit (Helsinki, Finland)	725090	
Pipet m10 µL	Sartorius Biohit (Helsinki, Finland)	725020	
Pipet m100 µL	Sartorius Biohit (Helsinki, Finland)	725050	
Pipet m1,000 µL	Sartorius Biohit (Helsinki, Finland)	725070	
Pipet m20 µL	Sartorius Biohit (Helsinki, Finland)	725030	
Potassium chloride (KCl ≥ 99.9%)	Sigma Aldrich (St. Louis, MO, USA)	P-3911	
Potassium dihydrogenphosphate (pro analysis)	Merck (Darmstadt, Tyskland)	1.04873.0250	
Protein LoBind Eppendorf tube 0.5 mL	Eppendorf (Hamburg, Tyskland)	525-0133 (0030 108.094)	
Protein LoBind Eppendorf tube 1.5 mL	Eppendorf (Hamburg, Tyskland)	525-0132 (0030 108.116)	
Protein LoBind Eppendorf tube 2.0 mL	Eppendorf (Hamburg, Tyskland)	525-0134 (0030 108.450)	
Protein LoBind Eppendorf tube 5.0 mL	Eppendorf (Hamburg, Tyskland)	525-0792 (0030108.302)	
Scissors	Sigma Aldrich (St. Louis, MO, USA)	Z186716-1EA	
Sodium azide (BioUltra; ≥ 99.5%)	Sigma Aldrich (St. Louis, MO, USA)	71289-5G	
Sodium chloride (for analysis)	Merck (Darmstadt, Tyskland)	1.06404.1000	
Sodium dihydrogenphosphate monohydrate (pro analysis)	Merck (Darmstadt, Tyskland)	1.06346.0500	
Sodium hydroxide (AnalaR NORMAPUR)	VWR International (Radnor, PA, USA)	28244.295	
Sodium tetraborate decahydrate (≥ 99. %))	Sigma Aldrich (St. Louis, MO, USA)	S9640-500G	

Spectrafuge Mini Centrifuge	LABNET International (Edison, NJ, USA)	C1301	
Stirring magnet, 25 mm x 6 mm Ø, circular	Leybold (Cologne, Germany)	666 851	
Stuart Scientific SA8 vortex mixer	Stuart (Staffordshire, UK)	Z648531-1EA	
SuperClear centrifuge tubes (15 mL)	VWR International (Radnor, PA, USA)	525-0150	
SuperClear centrifuge tubes (50 mL)	VWR International (Radnor, PA, USA)	525-0155	
Thermomixer comfort 1.5 mL	Eppendorf (Hamburg, Tyskland)	53,55,27,831	Temperature controlled mixer
Trizma base (reagent grade, ≥ 99.0 %)	Sigma Aldrich (St. Louis, MO, USA)	T6066	Tris(hydroxymethyl)aminometan (tris)
Trizma HCl (reagent grade, ≥ 99.0%)	Sigma Aldrich (St. Louis, MO, USA)	T3253-100G	Tris(hydroxymethyl)aminometan HCl (tris HCl)
Trypsin (TCPK-treated from bovine pancreas, 10,000-15,000 BAEE units/mg Protein)	Sigma Aldrich (St. Louis, MO, USA)	T8802	Store in freezer below -20 °C
Tween 20	Sigma Aldrich (St. Louis, MO, USA)	P7949-500ML	polysorbate 20
Tweezers	Sigma Aldrich (St. Louis, MO, USA)	TEM-78511-27	
Vial caps, white, 9 mm	Nerliens Meszansky (Oslo, Norge)	LPP 09 15 0981	
Mitra micro sampler with VAMS (Volumetric adsorptive micro sampling) technology, 10 µL, 4-sampler clamshell	Neoteryx (Torrance, CA, USA)		