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Product Information

ProteoMass™ MALDI Calibration Kit for Exactive™ Series MS, LTQ XL™ and LTQ™ Hybrids

Catalog Number **MSCAL4**
Storage Temperature 2–8 °C

Product Description

This kit provides a range of standard peptides for mass calibration and tuning of LTQ XL™ and LTQ™ Orbitrap hybrid mass spectrometers, and mass calibration of Exactive™ Series instruments equipped with MALDI ion sources. This kit also provides a recrystallized matrix and high-purity, low-alkali metal solvents. All kit components have been packaged in materials tested for their compatibility with mass spectrometry.

Reagents

All standards have been tested on Exactive Series mass spectrometers equipped with an atmospheric pressure MALDI ion source, and found to meet certain performance criteria in selected modes of positive and negative ionization. This does not preclude the use of these standards with platforms made by the full range of instrument manufacturers. Note these criteria are provided only as a guideline and are not a guarantee of performance on a given manufacturer's system. Performance varies depending on the age and maintenance of the instrument, in addition to the manufacturer's own specifications.

Matrix and Solvents

Recrystallized α-cyano-4-hydroxycinnamic acid is supplied in 1.7 ml microcentrifuge tubes (5 mg per tube). The TFA solution and the ethanol are supplied in high-density polyethylene bottles. The acetonitrile is supplied in a glass bottle.

Catalog Number [CAS Number]	Product	Amount
C2742 [28166-41-8]	α-cyano-4-hydroxycinnamic acid	5 × 5 mg
T3693 [76-05-1]	1% Trifluoroacetic acid (TFA) solution	4 ml
A8596 [75-05-8]	Acetonitrile	30 ml
E7023 [64-17-5]	Ethanol, 200 Proof	10 ml

ProteoMass™ Angiotensin II, Signal to Noise Test (Catalog Number A9854): The kit contains two clear 0.5 ml vials with yellow caps. Each vial contains 500 pmol of Angiotensin II sensitivity standard.

ProteoMass Normal Mass Calibration Mix (Catalog Number C9241): The kit contains five clear 0.5 ml vials with green caps. Each vial contains optimal quantities of the standard peptides indicated in the following chart.

Peptide [CAS Number]	Amount per vial (pmol)	Monoisotopic Mass $(M+H)^+$
MRFA [67368-29-0]	1,217	524.27
Bradykinin 1-7 [23815-87-4]	435	757.40
Bradykinin [5979-11-3]	680	1060.57
Angiotensin I [70937-97-2]	924	1,296.69
Neurotensin [58889-67-1]	667	1672.92
Renin Substrate [20845-02-7]	868	1758.93

ProteoMass High Mass Calibration Mix (Catalog Number C9366): The kit contains five clear 0.5 ml vials with blue caps. Each vial contains optimal quantities of the standard peptides indicated in the following chart.

Peptide [CAS Number]	Amount per vial (pmol)	Monoisotopic Mass $(M+H)^+$
MRFA [67368-29-0]	8,823	524.27
Bradykinin [5979-11-3]	1,701	1,060.57
ACTH 1-16 [5576-42-1]	2,931	1,936.99
Melittin [20449-79-0]	3,845	2,845.75
ACTH 7-38 [68563-24-6]	2,178	3,657.93

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

It is recommended that the entire Data Sheet be read prior to use.

Preparation Instructions
Preparation of Solvent Mixtures
Solvent 1 (80% HPLC grade water and 20% acetonitrile):
1. Add 800 µl of HPLC grade (or 18 MΩ•cm) water into a 1.7 ml microcentrifuge tube.
2. Add 200 µl of acetonitrile to the tube and mix well.

Solvent 2 (0.003% TFA, 13% ethanol, and 84% acetonitrile):
1. Prepare a 0.1% TFA solution by mixing 100 µl of 1% TFA solution with 900 µl of HPLC grade (or 18 MΩ·cm) water in a 1.7 ml microcentrifuge tube.
2. Mix 30 µl of the prepared 0.1% TFA solution (step 1) with 130 µl of 200 proof ethanol and 840 µl of acetonitrile.

Solvent 3 (0.05% TFA and 50% acetonitrile):
1. Mix 100 µl of prepared 0.1% TFA solution (Solvent 2, step 1) with 100 µl of acetonitrile.

Preparation of Matrix Solutions
1. 10 mg/ml Matrix Solution: Dissolve one tube (5 mg) of α-cyano-4-hydroxycinnamic acid with 0.5 ml of Solvent 2. Vortex or sonicate the mixture until the matrix is completely dissolved.
2. 3.5 mg/ml Matrix Solution: Mix 35 µl of the prepared 10 mg/ml Matrix Solution with 65 µl of Solvent 2. Vortex briefly.

Preparation of the Calibration Mix Solutions
1. Reconstitute one vial of the Normal Mass Calibration Mix with 58 µl of Solvent 1.
2. Reconstitute one vial of the High Mass Calibration Mix with 150 µl of Solvent 1.
3. Incubate both vials for 30 minutes at room temperature.
4. Separately add 45 µl of the 3.5 mg/ml Matrix Solution to 5 µl of each reconstituted mass calibration mix. Vortex each sample briefly.

Spotting of the Calibration Mixes
1. Spot 1.5 µl of each prepared Calibration Mix Solution (normal and high) onto a separate well of the MALDI target. Gently use the pipette tip to spread each Calibration Mix Solution out to the edges of the sample well. The Calibration Mix Solutions must touch the edges of the well engraving to ensure even drying and uniform distribution.
   Note: The solutions can be spread slightly outside of the sample well, if necessary.
2. Allow the sample spots to dry at room temperature for 1–2 minutes.

Preparation of Test Samples
1. Reconstitute one vial (500 pmol) of Angiotensin II with 625 µl of HPLC grade (or 18 MΩ•cm) water (final Angiotensin II concentration of 800 fmol/µl).
2. Incubate the vial for 30 minutes at room temperature.
3. Mix 5 µl of the 800 fmol/µl Angiotensin II solution (step 2) with 95 µl of HPLC grade (or 18 MΩ•cm) water and vortex briefly (final Angiotensin II concentration of 40 fmol/µl).
4. Mix 5 µl of the 40 fmol/µl Angiotensin II solution (step 3) with 45 µl of HPLC grade (or 18 MΩ•cm) water and vortex briefly (final Angiotensin II concentration of 4 fmol/µl).
5. Mix 10 µl of the 10 mg/ml Matrix Solution with 90 µl of Solvent 3 and vortex (final matrix concentration of 1 mg/ml).
6. Mix 5 µl of the 40 fmol/µl Angiotensin II solution (step 3) with 5 µl of the 1 mg/ml matrix solution (step 5). Vortex briefly and spot 0.5 µl (10 fmol) onto a well of the MALDI target.
7. Mix 5 µl of the 4 fmol/µl Angiotensin II solution (step 4) with 5 µl of the 1 mg/ml matrix solution (step 5). Vortex briefly and spot 0.5 µl (1 fmol) onto a separate well of the MALDI target.

Storage/Stability
The kit is shipped at ambient temperature and should be stored at 2–8 °C. Matrix solutions are stable for approximately one week at room temperature, if protected from light.

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