

## Product Information

### ProteoMass™ MALDI Calibration Kit for LTQ XL™ and LTQ Hybrids

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

#### Product Description

This kit provides a range of standard peptides for the purpose of calibrating and testing LTQ XL™ and LTQ™ hybrid mass spectrometers equipped with MALDI ion sources. The 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 LTQ mass spectrometers equipped with MALDI ion based and LTQ based hybrid sources, 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 that these criteria are only provided 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  $\alpha$ -cyano-4-hydroxycinnamic acid is supplied in 1.7 ml microcentrifuge tubes (5 mg per tube). Solvents are supplied in high-density polyethylene bottles.

Catalog Number [CAS Number]	Product	Amount
C2742 [28166-41-8]	$\alpha$ -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) <sup>+</sup>
MRFA [67368-29-0]	1217	524.27
Bradykinin 1-7 [23815-87-4]	435	757.40
Bradykinin [5979-11-3]	680	1060.57
Angiotensin I [70937-97-2]	924	1296.69
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) <sup>+</sup>
MRFA [67368-29-0]	8823	524.27
Bradykinin [5979-11-3]	1701	1060.57
ACTH 1-16 [5576-42-1]	2931	1936.99
Melittin [20449-79-0]	3845	2845.75
ACTH 7-38 [68563-24-6]	2178	3657.93

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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  $\mu\text{l}$  of HPLC grade (or 18 M $\Omega$ -cm) water into a 1.7 ml microcentrifuge tube.
2. Add 200  $\mu\text{l}$  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  $\mu\text{l}$  of 1% TFA solution with 900  $\mu\text{l}$  of HPLC grade (or 18 M $\Omega$ -cm) water in a 1.7 ml microcentrifuge tube.
2. Mix 30  $\mu\text{l}$  of the prepared 0.1% TFA solution (step 1) with 130  $\mu\text{l}$  of 200 proof ethanol and 840  $\mu\text{l}$  of acetonitrile.

Solvent 3 (0.05% TFA and 50% acetonitrile):

1. Mix 100  $\mu\text{l}$  of prepared 0.1% TFA solution (Solvent 2, step 1) with 100  $\mu\text{l}$  of acetonitrile.

#### Preparation of Matrix Solutions

1. 10 mg/ml Matrix Solution - Dissolve one tube (5 mg) of  $\alpha$ -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  $\mu\text{l}$  of the prepared 10 mg/ml Matrix Solution with 65  $\mu\text{l}$  of Solvent 2. Vortex briefly.

#### Preparation of the Calibration Mix Solutions

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

#### Spotting of the Calibration Mixes

1. Spot 1.5  $\mu\text{l}$  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 that 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  $\mu\text{l}$  of HPLC grade (or 18 M $\Omega$ -cm) water (final Angiotensin II concentration of 800 fmol/ $\mu\text{l}$ ).
2. Incubate the vial for 30 minutes at room temperature.
3. Mix 5  $\mu\text{l}$  of the 800 fmol/ $\mu\text{l}$  Angiotensin II solution (step 2) with 95  $\mu\text{l}$  of HPLC grade (or 18 M $\Omega$ -cm) water and vortex briefly (final Angiotensin II concentration of 40 fmol/ $\mu\text{l}$ ).
4. Mix 5  $\mu\text{l}$  of the 40 fmol/ $\mu\text{l}$  Angiotensin II solution (step 3) with 45  $\mu\text{l}$  of HPLC grade (or 18 M $\Omega$ -cm) water and vortex briefly (final Angiotensin II concentration of 4 fmol/ $\mu\text{l}$ ).
5. Mix 10  $\mu\text{l}$  of the 10 mg/ml Matrix Solution with 90  $\mu\text{l}$  of Solvent 3 and vortex (final matrix concentration of 1 mg/ml).
6. Mix 5  $\mu\text{l}$  of the 40 fmol/ $\mu\text{l}$  Angiotensin II solution (step 3) with 5  $\mu\text{l}$  of the 1 mg/ml matrix solution (step 5). Vortex briefly and spot 0.5  $\mu\text{l}$  (10 fmol) onto a well of the MALDI target.
7. Mix 5  $\mu\text{l}$  of the 4 fmol/ $\mu\text{l}$  Angiotensin II solution (step 4) with 5  $\mu\text{l}$  of the 1 mg/ml matrix solution (step 5). Vortex briefly and spot 0.5  $\mu\text{l}$  (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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