

# Instructions for Use

## Oligonucleotide Calibration Standard LMW

**Oligonucleotide mixture for calibration of matrix-assisted laser desorption and ionization time-of-flight mass spectrometers (MALDI-TOF MS)**

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## 1 Product Description

Oligonucleotide Calibration Standard LMW is a mixture of five oligonucleotides which is designed for calibration of method parameter files of MALDI-TOF mass spectrometers in a low mass range between ~1000 and 4000 Da.

Oligonucleotide Calibration Standard LMW is supplied in five tubes per package. The quantity of substance allows 5x100 calibration spots.

The following table lists the five oligonucleotides and their molecular masses.

Oligonucleotide	[M+H] <sup>+</sup> Average	[M] Average
Oligo 4 (4mer)	1174.8	1173.8
Oligo 5 (5mer)	1488.0	1487.0
Oligo 7 (7mer)	2106.4	2105.4
Oligo 9 (9mer)	2723.8	2722.8
Oligo 11 (11mer)	3342.2	3341.2

### Ordering Information

Product	Part No.
Oligonucleotide Calibration Standard LMW, 5 tubes	# 8217028

## 2 Storage and Stability

Oligonucleotide Calibration Standard LMW is shipped at ambient temperatures. After arrival, we recommend storing Oligonucleotide Calibration Standard LMW at 0°C or below.

Dissolved samples should be aliquoted and frozen. We do not recommend refreezing samples after thawing.

**Note** Do not apply repeated freeze-thaw cycles to the material.

## 3 Risk and Safety Information

Oligonucleotide Calibration Standard LMW is not classified according to Regulation (EC) No. 1272/2008 and is therefore not classified according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). In the manufacturer's experience, the product has no harmful effect when used and handled according to specifications.

Additional chemicals may be required for procedures described in these Instructions for Use. Carefully read the Material Safety Data Sheet provided by the supplier and follow general safety regulations when handling chemicals or biohazardous material.

## 4 Sample Preparation Procedure

### Preliminary remarks

Poor sample preparation will degrade sensitivity, yield low resolution and poor reproducibility. The generation of ions through MALDI depends on the production of a suitable composite material, consisting of the matrix substance and the analyte. For best results use only chemicals of highest purity available.

### Chemicals and materials required

- 3-Hydroxypicolinic acid (3-HPA) (# 8201224, Bruker Daltonik GmbH)
- Diammonium hydrogen citrate in ultra pure water (100 mg/mL) (AHC solution)

### Equipment and tools required

- Centrifuge
- Vortex mixer or shaker
- Ultrasonic device
- Pipettes and pipette tips
- MALDI target plate

### 1. Preparation of Oligonucleotide Calibration Standard LMW solution

Dissolve the content of one tube of Oligonucleotide Calibration Standard LMW in 100  $\mu$ L ultrapure water and vortex/shake for several seconds.

### 2. Preparation of 3-HPA matrix solution

#### *For AnchorChip targets:*

Dissolve 10 mg 3-HPA in 990  $\mu$ L ultrapure water and add 10  $\mu$ L AHC solution. Assist solution process by using an ultrasonic device.

### 3. Preparation of a sample onto a MALDI target plate

Apply 1  $\mu$ L 3-HPA matrix solution onto a MALDI target plate position and let the sample spot dry at room temperature. Add 1  $\mu$ L Oligonucleotide Calibration Standard LMW solution and let the sample spot dry at room temperature

## 5 Result of Measurement of Oligonucleotide Calibration Standard LMW

Oligonucleotide Calibration Standard LMW is optimized on a Bruker Daltonics autoflex MALDI-TOF mass spectrometer. Figure 1 shows a typical MALDI-TOF mass spectrum of Oligonucleotide Calibration Standard LMW obtained from a MALDI target preparation with 3-HPA matrix.

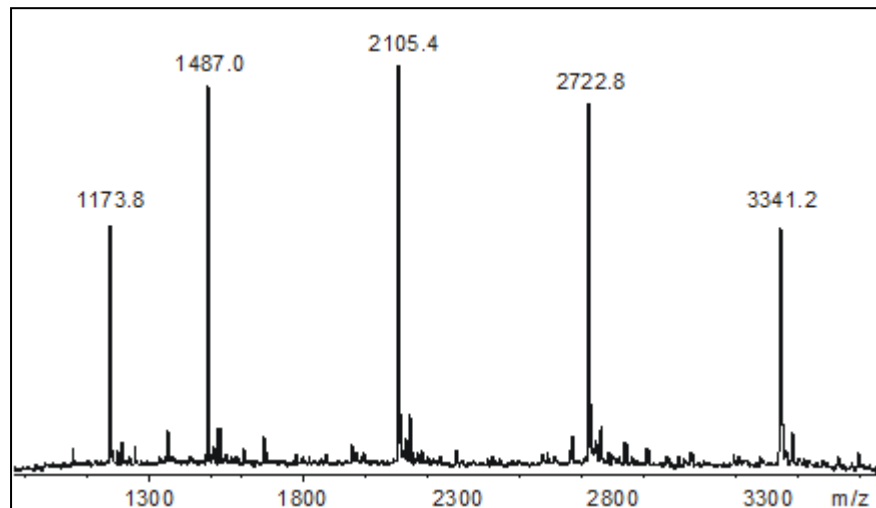


Figure 1 MALDI-TOF mass spectrum of Oligonucleotide Calibration Standard LMW

## 6 Manufacturer



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