

MassPREP BSA Digestion Standard

CONTENTS

- I. INTRODUCTION
- II. STORAGE AND STABILITY
- III. RECONSTITUTION OF MassPREP PROTEIN DIGESTION STANDARD FOR HPLC
- IV. RECONSTITUTION OF MassPREP PROTEIN DIGESTION STANDARD FOR MALDI-MS
- V. ORDERING INFORMATION

I. INTRODUCTION

The MassPREP™ Protein Digestion Standard was prepared by digesting bovine serum albumin (BSA, UniProt P02769) with sequencing grade trypsin. The sample was reduced and alkylated (iodoacetamide) prior to digestion. The resulting digest does not contain any undigested protein, trypsin, alkylation/reduction agents, or very hydrophilic components. Each batch of BSA digestion standard is prepared under strict quality control criteria confirmed on the included certificate of analysis. Protein digestion standards may be used for a variety of applications, including evaluation of HPLC columns, evaluation of mass spectrometry and chromatography instrumentation performance, mass spectrometer calibration, or as an HPLC standard.

II. STORAGE AND STABILITY

The lyophilized powder is stable at room temperature until the expiration date printed on the label. Once reconstituted in high purity water or in 0.1% trifluoroacetic acid in water, the solution is stable for one week when stored at 8 °C. Stability can be extended by freezing samples at -20 °C.

Note: The contamination of sample with endo- and exo-peptidase enzymes may cause rapid sample degradation.

MassPREP™

III. RECONSTITUTION OF MassPREP PROTEIN DIGESTION STANDARD FOR HPLC

The protein digestion standards were prepared by digesting 1 nmole of protein. For HPLC column evaluation, the recommended sample dilution is 100 μ L of 0.1% trifluoroacetic acid in water, or 0.1–1% formic acid in water. Injection volumes and mass loads are shown in Table 1.

Table 1. Recommended mass load for HPLC column evaluation

Reconstitution volume (μ L)	Column I.D. (mm)	Injection volume (μ L)	Avg. injected mass per peptide (pmole)
100	4.6	75.0	750.0
100	2.1	15.6	156.3
100	1.0	3.5	35.4
100	0.32	0.4	3.6
100	0.18	0.1	1.1
100	0.075	0.02	0.2

*Calculated for peptide with molecular weight of 1500 g/mol.

IV. RECONSTITUTION OF MassPREP PROTEIN DIGESTION STANDARD FOR MALDI-MS

1. Dissolve protein digestion standard in 1.0 mL of 0.1% trifluoroacetic acid/10% acetonitrile (v/v). The concentration of peptides in this stock solution is \sim 1 pmol/ μ L.
2. Dispense 20 μ L aliquots in 0.5 mL eppendorf tube and store at -20 $^{\circ}$ C prior to use.
3. Thaw the content of a tube and add 180 μ L of deionized water. The concentration of this working solution is 100 fmol/ μ L.
4. Mix 1 μ L of standard with 1 μ L of MALDI matrix. Deposit 1 μ L on the MALDI target for analysis.

Note: Each MassPREP Digestion Standard is sufficient for 1000 or more MALDI MS analyses.

SDS and Certificate of Analysis (COA) information can be found at www.waters.com/sds and www.waters.com/COA.

V. ORDERING INFORMATION

Description	Qty.	P/N
MassPREP Digestion Standard, Enolase	1	186002325
MassPREP Digestion Standard, Phosphorylase b	1	186002326
MassPREP Digestion Standard, Bovine Hemoglobin	1	186002327
MassPREP Digestion Standard, Alcohol Dehydrogenase	1	186002328
MassPREP Digestion Standard, Bovine Serum Albumin	1	186002329
MassPREP Digestion Standard Kit (includes one of each of the above digestion standards)	5	186002330
MassPREP E.Coli Digest Standard	1	186003196
Cytochrome c Digestion Standard	1	186006371

Waters

THE SCIENCE OF WHAT'S POSSIBLE.®

Waters and The Science of What's Possible are registered trademarks of Waters Corporation. MassPREP is a trademark of Waters Corporation. All other trademarks are the property of their respective owners.