Datasheet for ABIN1721083

MagSi-proteomics C18 beads

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Overview

Quantity:	2 mL
Target:	Alkyl
Application:	Purification (Purif), Separation (Sep), Concentration (Conc), Protein Digestion (PD)

Product Details

Purpose:	MagSi-proteomics beads are magnetic beads that are an ideal tool for the purification, concentration and desalting of peptides and protein digests. The surface of the beads has been modified with C4, C8 and C18 -alkyl groups that are typical for reversed phase applications.
Characteristics:	MagSi-proteomics beads are magnetic silica beads coated with C4, C8 or C18 alkyl groups, providing a reversed phase (RP) surface chemistry. The beads are an ideal tool for protein and peptide sample concentration, desalting and fractionation, and reduce sample complexity. The different versions of MagSi-proteomics beads are intended for: **MagSi-proteomics C4:** capture, concentration and purification of proteins from protein mixtures in general, cell lysates, culture supernatant (e.g. secreted proteins). **MagSi-proteomics C8:** capture and purification of peptides and proteins from the following clinical samples: urine, saliva and CSF **MagSi-proteomics C18:** Desalting of peptides or protein tryptic digest prior to mass spectrometry, concentration of peptides (e.g. secreted peptides into media), capture and purification of peptides and proteins

Product Details

	from the following clinical samples: serum and plasma Note: For tissue samples we recommend to use MagSi-WCX or MagSi-WAX instead. MagSi-proteomics C18 beads are an ideal tool for the purification, concentration and desalting of peptides and protein digests. MagSi-proteomics C8 beads represent an intermediate hydrophobicity (less hydrophobic than C18 and more hydrophobic than C4) and are suitable for sample preparation for proteomic profiling and biomarker research. The relatively low hydrophobicity of MagSi-proteomics C4 is most suitable for purification and fractionation of larger biomolecules like proteins. MagSi-proteomics beads are ideally suited for use in 96 well microplates on automated liquid handling platforms
Components:	Magnetic silica particles with reversed phase chemistry on the surface (C18).
Material not included:	Depending on the application, some buffers and materials are needed: Mixer/vortex to mix samples and resuspend beads Magnetic separator for bead separation/collection Solvents and reagents like ACN and TFA We recommend to use the following buffers with the MagSi-proteomics beads and only use HPLC grade reagents. Adsorption solution: 0.1% trifluoroacetic acid (TFA), NaCl up to 200 mM can be added using MagSi-proteomics C4 and C8 beads Washing solution: 0.1% trifluoroacetic acid (TFA) Desorption solution: Typically 50% can in 0.1% TFA. Note: Fractionation of proteins/peptides is possible by using different concentrations of ACN (e.g. 20%, 50%, 80%)
Bead Ligand:	C18 alkyl group
Bead Matrix:	Magnetic Silica particles
Bead Size:	Bead size: 1.2 µm

Target Details

Target:	Alkyl

Application Details

Application Notes:	For better handling, detergents like 0.01% Tween 20 or 0.01% TX-100 can be used. However, please note that detergents may interfere with downstream applications like mass spectrometry. We recommend to use up to 8 mM n-octylglucoside for serum analysis. MagSi-proteomics beads are compatible with common solvents used in mass spectrometry applications. No degradation or decrease of functionality could has been measured after incubation of beads in ACN concentrations up to 80%, several alcohols like MeOH or EtOH, and TFA up to 0.5%.
Comment:	Peptides and proteins bind to MagSi-proteomics beads via hydrophobic interactions between the protein/peptide and the hydrophobic surface of the beads. The higher the hydrophobic character of the proteins and peptides the stronger the binding towards the reversed phase surface. Proteins and peptides are eluted under organic solvent conditions, e.g. acetonitrile (ACN). Proteins and peptides can therefore be separated according to their relative hydrophobicities using stepwise desorption in increasing concentrations of organic solvents.
Assay Procedure:	**Washing procedure:** 1.Resuspend the beads 2.Transfer 20 µL to a tube 3.Place the tube on the magnet for 2 minutes. 4.Remove the supernatant by aspiration with a pipette while the tube remains on the magnet. 5.Remove the tube from the magnet. 6.Add 100 µL Adsorption solution and resuspend the beads. 7.Repeat steps 3 to 5 twice, for a total of three washes. 8.Add 10 µL adsorption solution and resuspend. **Peptide/protein adsorption:** 1.Add your peptide sample to the vial containing the washed MagSi beads in Adsorption solution. Add TFA to a final concentration of 0.1% while adjusting the total volume to 25 µL. Mix using a pipette. 2.Leave at room temperature for 5-10 minutes to allow peptides/proteins to adsorb to the beads. 3.Place the tube on the magnet. When the beads are at the tube wall and the liquid is clear, discard the supernatant. 4.Remove the tube from the magnet, add 50 µL Washing Solution and mix. 5.Separate the beads from the buffer using the magnet and discard the supernatant. 6.Repeat steps 4 and 5 twice, for a total of 3 washes.

Application Details

	Peptide/protein desorption: 1.Resuspend the beads in 10 µL Desorption solution and incubate for 5 - 8 minutes at room temperature. 2.Place the tube on the magnet and transfer the eluate containing the peptides or proteins to a new tube. MALDI analysis: Typically, 1 µL of the eluate and 1 µL of a saturated solution of a proper MALDI-MS matrix is mixed (typically, alpha-cyano-4-hydroxy-cinnamic acid is used for peptides < 4000 Da, for proteins > 4000 Da, sinapinic acid is used). Spotting of 1 µL of the mixture on a MALDI target generates reliable spectra.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	10 mg/mL
Buffer:	25% ethanol in filtered demineralized water
Handling Advice:	Store beads in well closed vial and in upright position to prevent drying of the beads. Do not freeze the product! Vortex bead suspension well before use.
Storage:	4 °C
Expiry Date:	12 months

Publications

Product cited in:	Rizk, Sharaki, Meleis, Younan, Elkial, Moez: "Detection of Epithelial Ovarian Cancer using C8Magnetic Bead Separation and MALDI-TOF Plasma Proteome Profiling in Egyptian Females." in: **Asian Pacific journal of cancer prevention : APJCP**, Vol. 20, Issue 12, pp. 3603-3609, (2020) (PubMed).

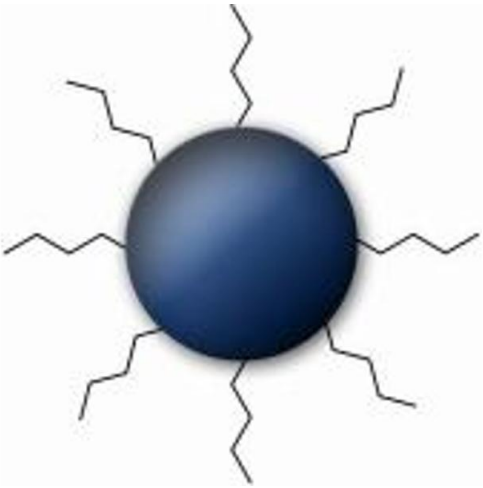

Image 1.

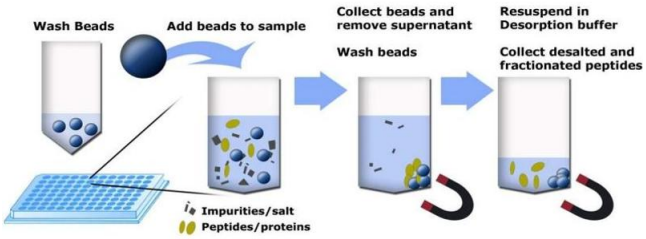

Image 2. Principle using MagSi-proteomics reversed phase beads.