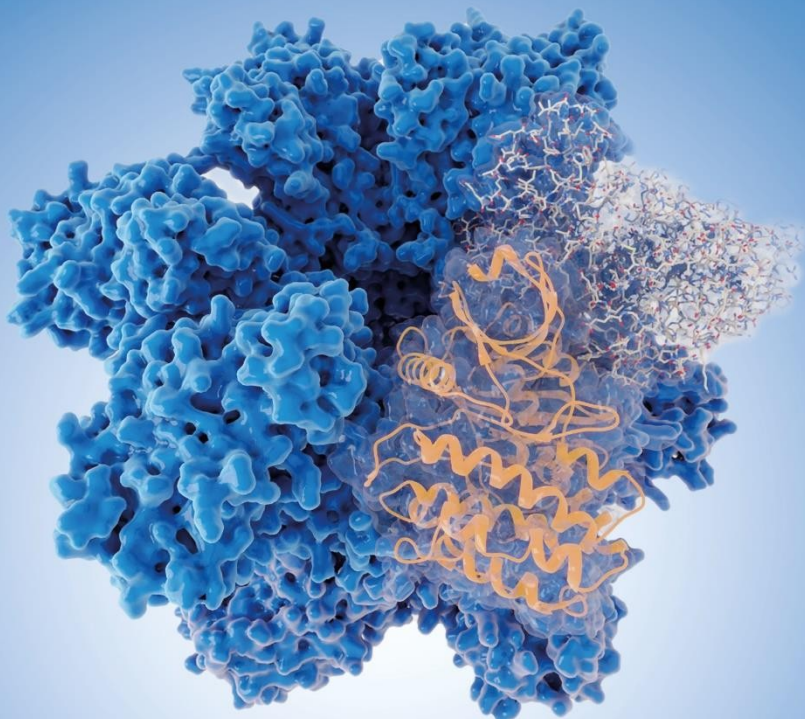




affinisep

The Art of making sample preparation easier

BioSPE™ Ready-to-use SPE kits for **PROTEOMICS**



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Information

This brochure gives **technical information about our SPE kits** for sample preparation in proteomic workflows.

To have access to our **products references and prices**, or to **request a quote**, please:



Create an account on our website:
www.affinisep.com



Send us an email at **contact@affinisep.com**

We are looking forward working with you!

Affinisep SPE membrane technology for microelution

Our innovative SPE membranes are made with **small sorbent beads**, that are much smaller than the particles used in traditional powder-based SPE products. These beads are tightly embedded, thus leading to **thin, dense, soft and uniform membranes** with **high capacity** for extraction/separation, purification and concentration of molecules.

These SPE membranes offer **outstanding sample preparation efficiency and reproducibility** of results. The sorbent particles being densely packed, the diffusion distance is minimized. Therefore, adsorption is more efficient, and extraction can be accomplished using **very low sorbent mass** and **very small elution volumes**. **The time-consuming evaporation step** is thus **considerably reduced**, and the **molecules of interest are highly concentrated** to improve the detection sensitivity.

These properties are giving to our SPE membranes a **significant improvement of mass transfer kinetics** compared to traditional packed SPE particles. As monoliths, our SPE membranes are self stand and require **no frits to immobilize the column bed** (unlike traditional SPE products), allowing **100% recovery of the original sample volume**.

ADVANTAGES OF SPE MEMBRANES

- No need of frits or filters
- Reduced dead volume
- Small elution volumes
- High sample recovery
- Reduced time for eluate evaporation
- Higher throughput
- Channeling effects eliminated
- Excellent reproducibility
- Concentration of analytes of interest

Thanks to their unique advantages, our SPE membranes are useful for purification of very small sample volumes in diverse biological applications. Affinisep offers **two ranges of products** for proteomics and biomolecular applications, **both based on our innovative SPE membrane technology**.

Our product ranges based on SPE membrane

BioSPE™

A new range of **ready-to-use kits** specially developed and designed for **various applications in:**

- **BOTTOM-UP PROTEOMICS:** peptide desalting, peptide fractionation, removal of magnetic beads after SP3 procedure, enrichment of N-glycans or glycopeptides
- **TOP-DOWN PROTEOMICS:** purification of intact proteins in biological matrices, food matrices (milk) or plant samples
- **METABOLOMICS:** purification of metabolites and small molecules from various matrices (plasma, urine, culture medium...)

AttractSPE® Disks

A comprehensive product range based on sorbent chemistries, with a **wide variety of silica-based (C18, C8, C4, HILIC...)** and **polymeric sorbents (SAX, SCX, PS-DVB, SDB-RPS...)**, for extraction and purification of analytes in biological samples such as urine, plasma, serum, saliva....



GOOD TO KNOW!

This brochure will only present our BioSPE™ kits for bottom-up and top-down proteomics applications. **Don't hesitate to visit our website or contact us if you want more information about our BioSPE™ kits for metabolomics or our AttractSPE® Disks range!**

Focus on SPE membrane microelution tools

Our SPE membranes can be used to miniaturize SPE for small operating volume of fluid samples. In order to give the most exhaustive applications, **4 formats** are **available** for microelution, for both BioSPE™ and AttractSPE®Disks product ranges: **StageTips or SPE Tips**, **SPE Spin columns**, **96 SPE well plates** and **SPE cartridges**.

Thanks to the use of the SPE membranes for all formats, **the change of format or the scale up of the process is easy to implement.**

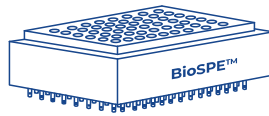
Formats



SPE Tips
StageTips



SPE Spin
columns



96 SPE well plates
for microelution



SPE Cartridges





Capacity

Each format (SPE Tips, SPE Spin columns, 96 SPE well plates and SPE Cartridges) is available with **different capacities**, that is to say different layer thicknesses of the SPE membrane immobilized inside the microelution tool, to better adapt to your needs. For a more reproducible product, each tool contains only **ONE** layer of SPE membrane.

Illustration of the different capacities available for our SPE Tips

BioSPE™ product range consists of **ready-to-use kits** for the most common applications in proteomics and metabolomics workflows.

Supplied as **turnkey solutions**, these kits are composed of:


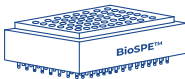


-  SPE columns for a given application such as desalting, enrichment, fractionation...
-  Instructions of use and detailed protocol specific to a given application
-  Adapters and/or collection tools (each kit contains collection tools for the conditioning/loading/washing fractions and for the elution fraction)
-  Some reagents

BioSPE™ 96 well plates are supplied with **1mL collection plates** and **BioSPE™ Spin columns** are supplied with **2mL collection tubes**.

As our SPE Tips were specifically developed for an optimal use by centrifugation, **BioSPE™ Tips** are supplied with **spin adapters and collection tubes** for their centrifugation. Very easy to use, these adapters are compatible with any 1.5 and 2mL centrifugation tube (in the case of 10µL and 200µL tips) and 15mL centrifugation tube (in the case of 1mL tips).

BioSPE™ tools - Capacity

To help you select the formats that are the most adapted to your applications based on your sample amounts, the following table lists the **loading capacities** (maximal peptide/protein) amounts that can be retained) of our different **BioSPE™** formats available.

Products		Capacity (µg)	
		Standard (S)	High (H)
	BioSPE™ Tips - 10µL	7	25
	BioSPE™ Tips - 200µL	15	50
	BioSPE™ Tips - 1mL	35	105
	BioSPE™ 96 well plate for microelution	35	105
	BioSPE™ 96 well plate 1mL	500	1500
	BioSPE™ Spin - Micro	200	600
	BioSPE™ Spin - Mini	300	900
	BioSPE™ Spin - 15mL	1500	4500
	BioSPE™ Spin - 50mL	3000	9000
	BioSPE™ Cartridges – 1mL	250	750
	BioSPE™ Cartridges – 3mL	700	2100
	BioSPE™ Cartridges – 6mL	1500	4500



Application: Clean-up of **peptide mixtures** after **enzymatic digestion** in bottom-up proteomics to **remove salts** that can interfere with peptide ionization/detection and damage mass spectrometers



- **Up to 97% proteins identified** after desalting of HeLa digest on BioSPE™ PurePep
- **Good recovery of peptides on a wide polarity range**
- **Efficient purification of TMT-labeled peptides with high recovery yields (> 98%)**



GOOD TO KNOW!

If you:



Need to desalt **small hydrophilic peptides**



Work under **extreme pH conditions** (pH < 2 or pH > 10)



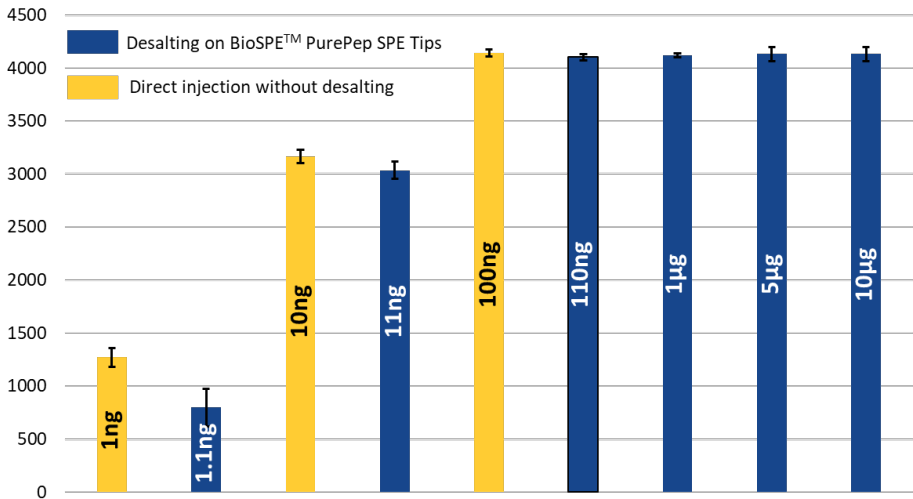
Need a **sorbent that can run dry** during SPE process

Then we recommend using **BioSPE™ PurePep Broad** for your desalting applications.



Application note: Estimation of the working range on BioSPE™ PurePep SPE Tips 200µL – Standard capacity

Identified proteins - Mean value (n=3)



Number of identified proteins very close to reference sample, even for small peptide amounts (10ng and below)



BioSPE™ PurePep SPE Tips 200µL – Standard capacity can be used for **single cell-like analysis**



Excellent repeatability (RSD < 3%)

GOOD TO KNOW!



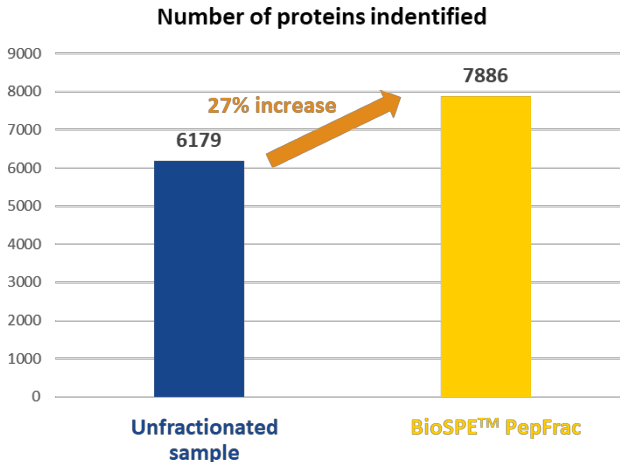
Video on the use of BioSPE™ PurePep SPE Tips by centrifugation for peptide desalting available on our website!



Application: Reduction of sample complexity with peptide fractionation at basic pH for deep proteome sequencing and quantitative analysis



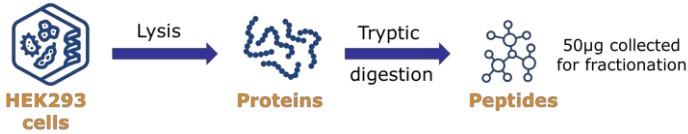
- Increased number of identified proteins
- Fractionation of unlabeled or TMT-labeled peptides
- No desalting step required prior to LC-MS analysis
- No storage constraints (dry at room temperature) with long shelf life
- Real flexibility of format and capacity to adapt to all samples



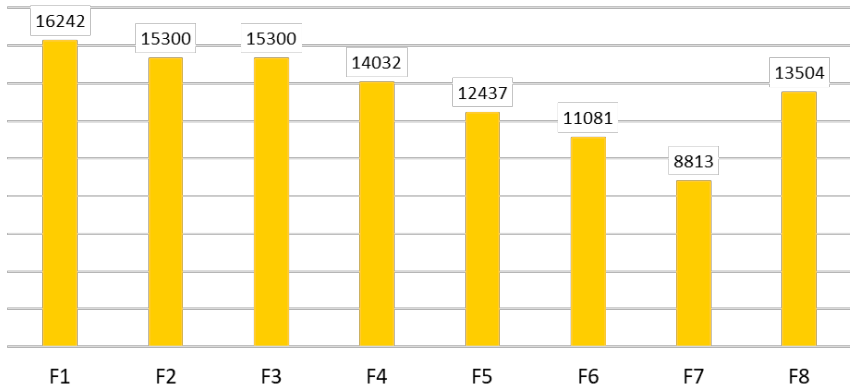
DID YOU KNOW?

BioSPE™ PepFrac ready-to-use kits are supplied with **0.1% triethylamine (TEA) solution**. Up to 8 fractions can be performed thus the kits are supplied with **nine collection tools** (one for conditioning/loading/washing fractions and one for each of the eight fractions).

Application: Fractionation of peptides on BioSPE™ PepFrac SPE Tips – High capacity

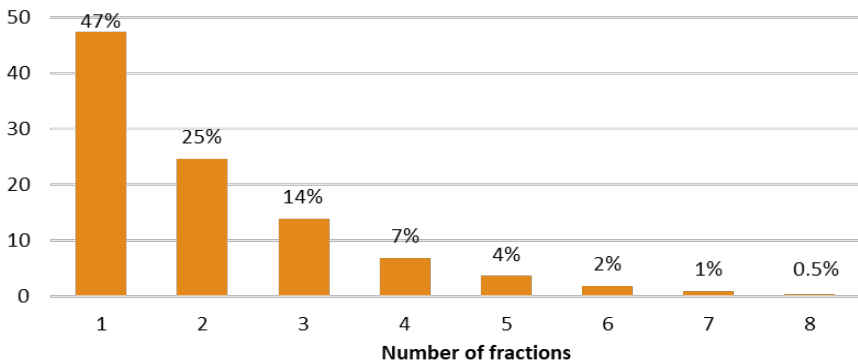


Peptide distribution in each fraction



Good distribution of peptides over the eight fractions

Percentage of peptides eluting in several fractions



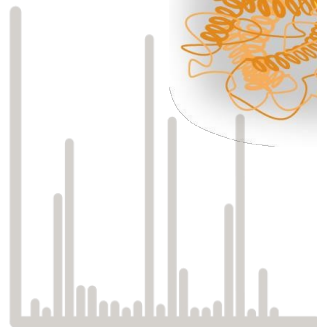
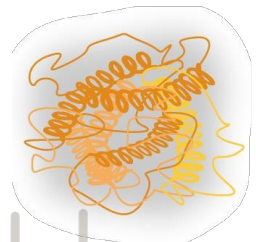
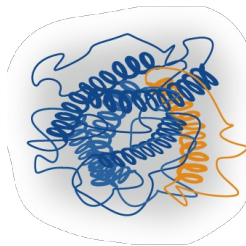
Efficient fractionation with minimized fraction overlapping



Application: Purification of protein mixtures in top-down proteomics to remove salts and contaminants that can affect mass spectrometry or capillary electrophoresis data.



- Purification and desalting of intact proteins and large peptides (MW > 10kDa)
- Compatible with various matrices: **biological matrices (blood), plant samples or food matrices (milk)**
- High recovery yields of proteins of interest (> 90%)
- Compatible with MS analysis, capillary electrophoresis...



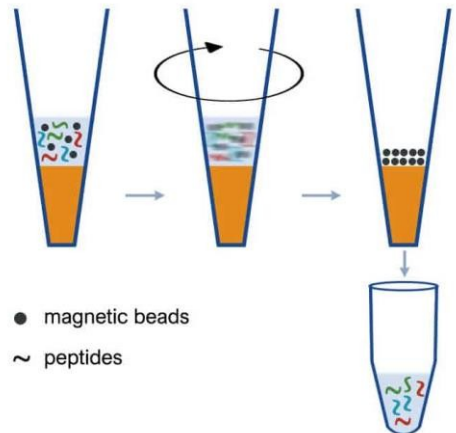
BioSPE™ BeadRem is used to easily and quickly filter-out magnetic beads remaining in peptide or protein samples after Single-Pot, Solid-Phase enhanced Sample Preparation (SP3) procedure, and that could plug the chromatographic column during LC-MS/MS analysis.

BioSPE™ BeadRem is available in two different versions, depending on the nature of your sample:

- **BioSPE™ BeadRem Aqua** for aqueous peptide samples containing less than 5% of organic solvent
- **BioSPE™ BeadRem Orga** for peptide samples containing more than 5% of organic solvent



- **Efficient removal of magnetic beads** as small as **1µm diameter**
- **Fast and easy 3-step pass-through process**
- **High peptide/protein recovery**
- Possibility to **filter-out non-magnetic beads** such as **agarose beads**





Application: Selective enrichment of N-glycans or glycopeptides in glycoproteomics



- Same sorbent can be used to enrich both glycopeptides or N-glycans (labeled or not)
- High recovery yields
- No storage constraints (dry at room temperature) with long shelf life
- Real flexibility of format and capacity to adapt to all samples

What about us?



**THE ART OF MAKING SAMPLE
PREPARATION EASIER**



Affinisep is an innovative company having **world class technology portfolio** for **sample preparation solution** to solve bioanalytical scientists' challenges and to impact life, environment and health with science.



Affinisep R&D and production facilities are located in Normandy. All of our products are developed and manufactured in France.

Affinisep is the winner of the France Relance prize and is supported by the Normandy region.



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