Viva Wide Pore HPLC Columns

Exceptional Performance for Large Biomolecules!



- Largest available surface area in 250-350Å pores—for maximum retention and resolution of proteins, peptides, and other larger biomolecules.
- Excellent PEGylation reaction monitoring.
- Restek manufactured, from base silica to final packed columns—ensures excellent lot-to-lot reproducibility.

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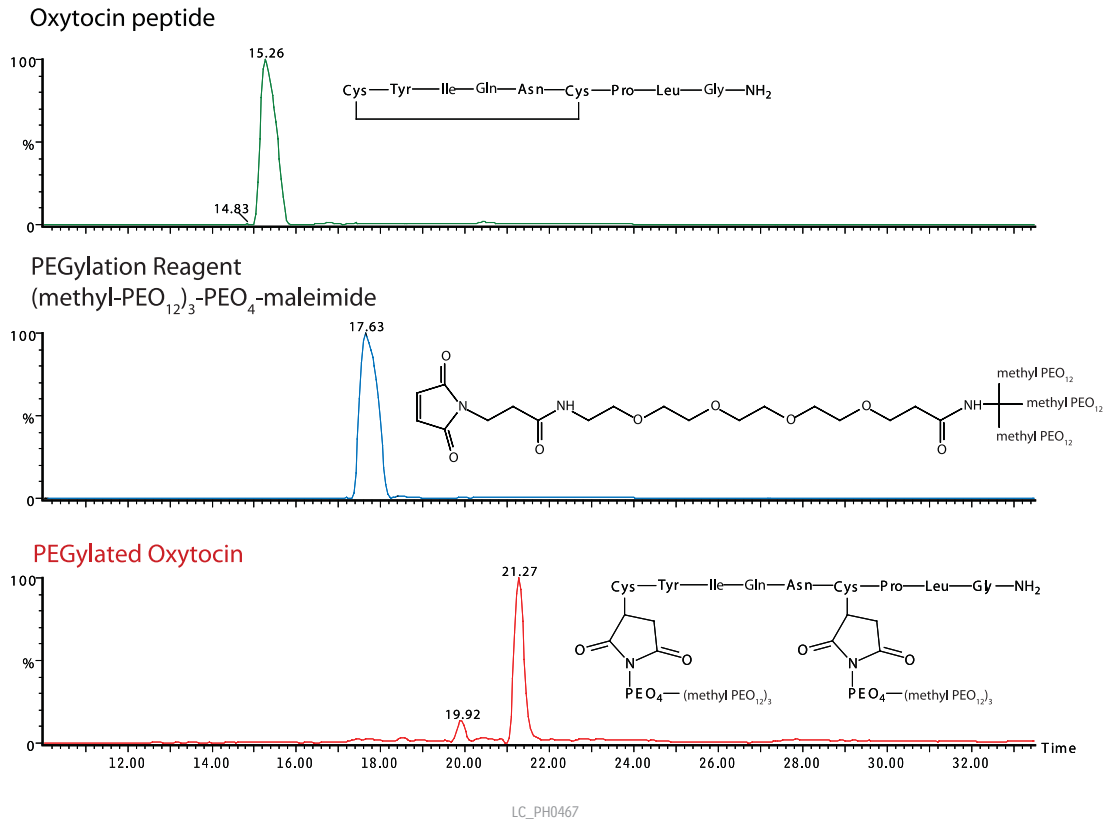
Viva Wide Pore HPLC Columns

Conventional reversed phase HPLC packing materials with 60-150Å pore sizes are not generally suitable for large biomolecule separations, as the analytes are not able to access the surface area within these pores. As well, the smaller pores can become fouled with strongly retained large molecular weight compounds. Silicas with wider pores address this need for increased retention, and thus more resolving power. Larger analytes can enter the wider pores and access more of the surface area, increasing retention and overall resolution. For analytes with molecular weights larger than 3000, pore diameters of 250-350Å offer the best combination of retention and pressure stability (note that pressure stability decreases as pore diameter increases). Viva wide pore silica has the greatest available surface area in 250-350Å pores of all materials tested and the tightest distribution of pores around the mean diameter.

PEGylation of Oxytocin

PEGylation is the covalent attachment of polyethylene glycol (PEG) units to therapeutic proteins and peptides and is an important tool in drug discovery. PEGylation is used to enhance drug delivery while maintaining the therapeutic function of the active compound. The PEG moieties added typically are large and result in very high molecular weight compounds. Viva Wide Pore HPLC columns are ideal for separation of these large molecules. PEGylation reactions can be easily monitored by taking advantage of the retentive power of Viva Wide Pore HPLC columns. The chromatograms in Figure 1 are extracted ion chromatograms for the peptide oxytocin, a PEGylation reagent, and the resulting PEGylated oxytocin. Excellent resolution is achieved for these compounds demonstrating the effectiveness of Viva Wide Pore HPLC columns in monitoring PEGylation reactions.

Figure 1 Easily monitor PEGylation reactions using Viva Wide Pore HPLC columns.



The data in Figure 1 were produced by LC/MS (positive electrospray) analysis using isocratic elution on a Viva C18 column, 1mm x 150mm, 5µm (cat # 9514561). The mobile phase consisted of 60:40 deionized water:acetonitrile, each with 0.1% formic acid and flowing at 0.100 mL/minute. The reaction mixture consisted of oxytocin with an excess of reducing agent tris(2-carboxyethyl)phosphine and (methyl-PEO12)3-PEO4-maleimide. 20µL of 300pmol/µL oxytocin in deionized water with 0.1% formic acid was injected.

Viva C18 Columns (USP L1)

Physical Characteristics:

particle size: 3µm or 5µm, spherical
pore size: 300Å
carbon load: 9%
endcap: yes
pH range: 2.5 to 10
temperature limit: 80°C

Chromatographic Properties:

Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds. Excellent general-purpose column for analyzing large molecules and biomolecules.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
3µm Columns				
30mm	9514331	9514332	9514333	9514335
50mm	9514351	9514352	9514353	9514355
100mm	9514311	9514312	9514313	9514315
150mm	9514361	9514362	9514363	9514365
5µm Columns				
30mm	9514531	9514532	9514533	9514535
50mm	9514551	9514552	9514553	9514555
100mm	9514511	9514512	9514513	9514515
150mm	9514561	9514562	9514563	9514565
200mm	9514521	9514522	9514523	9514525
250mm	9514571	9514572	9514573	9514575

Viva C8 Columns (USP L7)

Physical Characteristics:

particle size: 5µm, spherical
pore size: 300Å
carbon load: 5%
endcap: yes
pH range: 2.5 to 7.5
temperature limit: 80°C

Chromatographic Properties:

Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds. Less retention in reversed phase assays than Viva C18.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
5µm Columns				
30mm	9513531	9513532	9513533	9513535
50mm	9513551	9513552	9513553	9513555
100mm	9513511	9513512	9513513	9513515
150mm	9513561	9513562	9513563	9513565
200mm	9513521	9513522	9513523	9513525
250mm	9513571	9513572	9513573	9513575

To order a 2.1mm, 3.2mm, or 4.6mm ID column with a Trident Integral Inlet Fitting, add "-700" to the catalog number for the column.
Example: 100mm x 4.6mm ID Ultra C18 column with Trident Integral Inlet Fitting: 9174315-700
Nominal additional charge

For guard cartridges for these columns, see www.restek.com.

Viva C4 Columns (USP L26)

Physical Characteristics:

particle size: 5µm, spherical
pore size: 300Å
carbon load: 3.5%
endcap: yes
pH range: 2.5 to 7.5
temperature limit: 80°C

Chromatographic Properties:

Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds. Less retention in reversed phase assays than Viva C18 or Viva C8.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
5µm Columns				
30mm	9512531	9512532	9512533	9512535
50mm	9512551	9512552	9512553	9512555
100mm	9512511	9512512	9512513	9512515
150mm	9512561	9512562	9512563	9512565
200mm	9512521	9512522	9512523	9512525
250mm	9512571	9512572	9512573	9512575

Viva Biphenyl Columns (USP L11)

Physical Characteristics:

particle size: 5µm
pore size: 300Å
carbon load: 6.7%
endcap: yes
pH range: 2.5 to 7.5
temperature limit: 80°C

Chromatographic Properties:

Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds; ideal for large molecule and biomolecule assays. Highly retentive and selective phase for aromatic and unsaturated compounds, with increased retention, relative to phenyl phases.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
5µm Columns				
30mm	9516531	9516532	9516533	9516535
50mm	9516551	9516552	9516553	9516555
100mm	9516511	9516512	9516513	9516515
150mm	9516561	9516562	9516563	9516565
200mm	9516521	9516522	9516523	9516525
250mm	9516571	9516572	9516573	9516575

To order a 2.1mm, 3.2mm, or 4.6mm ID column with a Trident Integral Inlet Fitting, add "-700" to the catalog number for the column.
Example: 100mm x 4.6mm ID Ultra C18 column with Trident Integral Inlet Fitting: 9174315-700
Nominal additional charge

For guard cartridges for these columns, see www.restek.com.

Viva PFP Propyl Columns (USP L43)

Physical Characteristics:

particle size: 5µm, spherical
pore size: 300Å
carbon load: 5%
endcap: yes
pH range: 2.5 to 7.5
temperature limit: 80°C

Chromatographic Properties:

A pentafluorophenyl phase with a propyl spacer. Highly retentive for basic analytes. Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds, including nucleosides, nucleotides, and halogenated compounds.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
5µm Columns				
30mm	9519531	9519532	9519533	9519535
50mm	9519551	9519552	9519553	9519555
100mm	9519511	9519512	9519513	9519515
150mm	9519561	9519562	9519563	9519565
200mm	9519521	9519522	9519523	9519525
250mm	9519571	9519572	9519573	9519575

Viva Silica Columns (USP L3)

Physical Characteristics:

particle size: 5µm, spherical
pore size: 300Å
pH range: 2.5 to 7.5
temperature limit: 80°C

Chromatographic Properties:

Highly base-deactivated wide pore packing that exhibits excellent peak shape for a wide range of compounds in normal phase separations.

	1.0mm ID	2.1mm ID	3.2mm ID	4.6mm ID
Length	cat.#	cat.#	cat.#	cat.#
5µm Columns				
30mm	9510531	9510532	9510533	9510535
50mm	9510551	9510552	9510553	9510555
100mm	9510511	9510512	9510513	9510515
150mm	9510561	9510562	9510563	9510565
200mm	9510521	9510522	9510523	9510525
250mm	9510571	9510572	9510573	9510575

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Lit. Cat.# PHTS1008
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Restek U.S. • 110 Benner Circle • Bellefonte, PA 16823 • 814-353-1300 • 800-356-1688 • fax: 814-353-1309 • **www.restek.com**
Restek France • phone: 33 (0)1 60 78 32 10 • fax: 33 (0)1 60 78 70 90 • e-mail: restek@restekfrance.fr
Restek Ireland • phone: 44 2890 814576 • fax: 44 2890 814576 • e-mail: restekeurope@aol.com
Thames Restek U.K. LTD • phone: 44 1494 563377 • fax: 44 1494 564990 • e-mail: sales@thamesrestek.co.uk
Restek GmbH • phone: +49 (0) 6172 2797 0 • fax: +49 (0) 6172 2797 77 • e-mail: info@restekgmbh.de

ISO 9001:2000 cert.# FM80397