

Xtimate® Series HPLC Column

---Next generation beyond mid-range priced Ultisil™ series

X features of Xtimate® column

eXtra pH range: wide pH range from 1.0 to 12.5, excellent peak shape for strong bases

eXtra column lifetime: 5 times of similar product such as Gemini

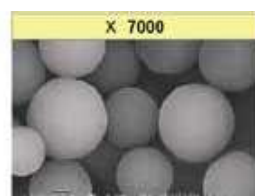
eXtra performance: column efficiency of 5µm columns is high to 90000/m, 2-3 times of Xterra

eXtra care from Welch: enjoy good pre-sales and after-sales service from Welch

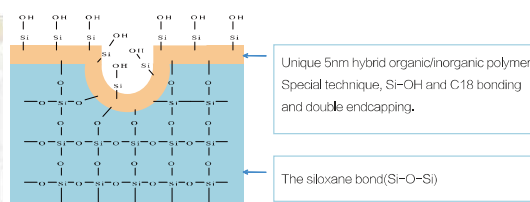
Xtimate® Silica Based HPLC Column

Xtimate® HPLC column applied special hybrid particles based technique, which coat a unique 5nm organic/inorganic polymer on the surface of the silica, so the pH range is extended to 1.0-12.5.

Xtimate® column is designed for HPLC method development, no matter in variety of mobile phases or high temperature, Xtimate® HPLC column also has stable performance and longer lifetime.

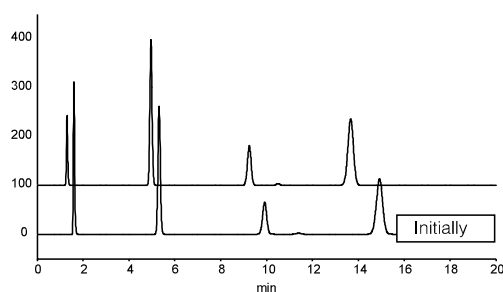


SEM of Hybrid particle

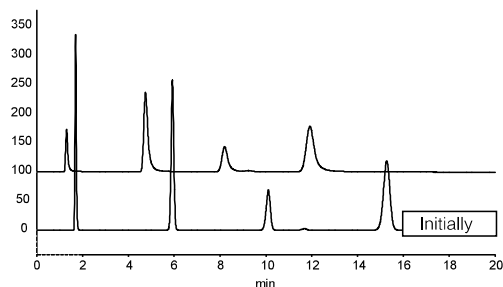


Hybrid Particles Based Xtimate® Technology

Comparison of Peak Shape After Soaking In Base



Column:	Xtimate® C18, 5 µm, 150 x 4.6 mm
Mobile Phase:	CH ₃ CN/0.01N NaOH aq. (pH=12)=30/70
Flow Rate:	1.0ml/min
Temperature:	40°C
Soak Time:	4 hours



Column:	Ultisil™ C18, 5 µm, 150 x 4.6 mm
Mobile Phase:	CH ₃ OH/H ₂ O=60/40
Flow Rate:	1.0ml/min
Temperature:	40°C
Detector:	UV 254nm
Samples:	1.Uracil 2.Methyl benzoate 3.Toluene 4.Naphthalene

After test at pH 12 condition for 4h, the peak shape of hybrid particles based Xtimate® column shows shows little difference difference.

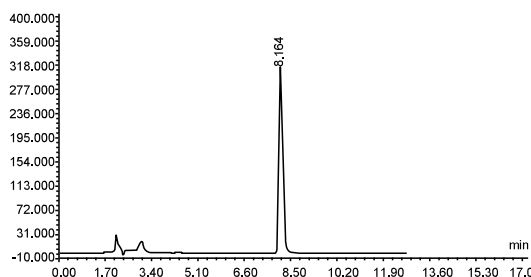
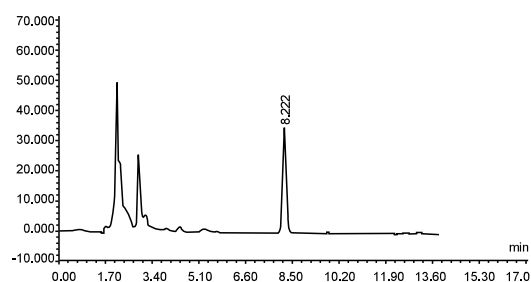
Xtimate[®] HPLC Column Bonded Phases

Beside C18 and C8 bonded phases, Xtimate also provide C4, CN, Phenyl bonded phases.

Xtimate[®] applied new special Smoothpak[™] technique, the bonding method of C18, C8, C4, CN, Phenyl, amino phases is different from other series, providing a different selectivity, stability and reproducibility, specially Phenyl phase Phenyl-Hexyl, is totally different from Ultisil[™] Phenyl, the longer hexyl group provides extra hydrocarbon interaction and longer retention than typical phenylpropyl phase; it also provides phase better chemical stability.

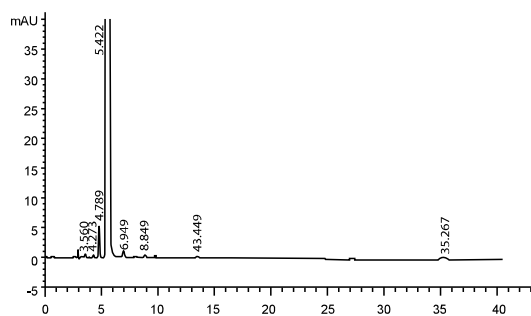
We also have polar polar embedded phase, Polar-RP on Xtimate[®] particles, to further improve peak shape for high polar and strong basic compounds and provide different selectivity than C18 phase.

Solifenacin Succinate



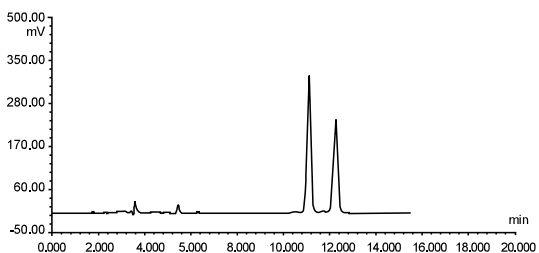
Column:	Xtimate [®] C18, 5μm, 250 x 4.6mm
Mobile Phase:	50mmol/L K ₂ HPO ₄ (pH3.0):ACN=60:40
Flow Rate:	1.0ml/min
Temperature:	40°C
Detector:	UV 210nm
Injection Volume:	20μl

Valaciclovir Hydrochloride



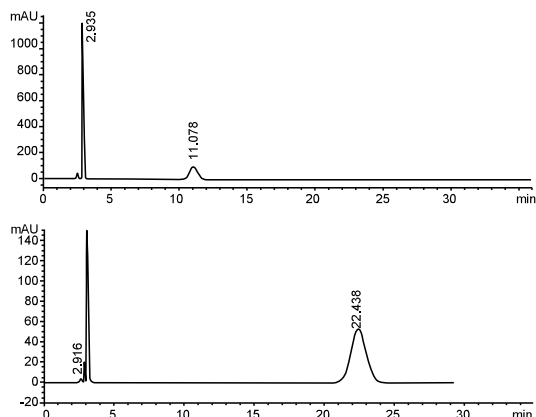
Column:	Xtimate [®] Phenyl-Hexyl, 5μm, 250 x 4.6mm
Mobile Phase:	MeOH:0.01mol/L KH ₂ PO ₄ (pH3.0)=15:85
Flow Rate:	1.0ml/min
Temperature:	35°C
Detector:	251nm
Injection Volume:	20μl

Omeprazole



Column:	Xtimate [®] C8, 5μm, 250 x 4.6mm
Mobile Phase:	10mmol/L Na ₂ HPO ₄ (pH7.4):ACN=70:30
Flow Rate:	1.0ml/min
Temperature:	Ambient
Detector:	280nm
Injection Volume:	20μl

Enalapril Maleate



Column:	Xtimate® C8, 5µm, 250 x 4.6mm
Mobile Phase:	Phosphate buffer:ACN=75:25
Flow Rate:	1.0ml/min
Temperature:	50°C
Detector:	280nm
Injection Volume:	20µl

Ordering Information

3µm Minibore Column

	C18	C8	C4	Phenyl-Hexyl	CN	NH ₂	SiO ₂
2.1×30	00101-21009	00102-21009	00107-21009	00104-21009	00105-21009	00103-21009	00100-21009
2.1×50	00101-21010	00102-21010	00107-21010	00104-21010	00105-21010	00103-21010	00100-21010
2.1×100	00101-21012	00102-21012	00107-21012	00104-21012	00105-21012	00103-21012	00100-21012
2.1×150	00101-21041	00102-21041	00107-21041	00104-21041	00105-21041	00103-21041	00100-21041

5µm Minibore Column

	XB-C18	XB-C8	XB-C4	XB-Phenyl	XB-CN	XB-NH ₂	SiO ₂
2.1×30	00101-31009	00102-31009	00107-31009	00104-31009	00105-31009	00103-31009	00100-31009
2.1×50	00101-31010	00102-31010	00107-31010	00104-31010	00105-31010	00103-31010	00100-31010
2.1×100	00101-31012	00102-31012	00107-31012	00104-31012	00105-31012	00103-31012	00100-31012
2.1×150	00101-31041	00102-31041	00107-31041	00104-31041	00105-31041	00103-31041	00100-31041

3µm Analytical Column

	XB-C18	XB-C8	XB-C4	XB-Phenyl	XB-CN	XB-NH ₂	SiO ₂
3.0×30	00101-21018	00102-21018	00107-21018	00104-21018	00105-21018	00103-21018	00100-21018
3.0×50	00101-21019	00102-21019	00107-21019	00104-21019	00105-21019	00103-21019	00100-21019
4.6×50	00101-21037	00102-21037	00107-21037	00104-21037	00105-21037	00103-21037	00100-21037
4.6×150	00101-21041	00102-21041	00107-21041	00104-21041	00105-21041	00103-21041	00100-21041

5µm Analytical Column

	XB-C18	XB-C8	XB-C4	XB-Phenyl	XB-CN	XB-NH ₂	SiO ₂
4.6×50	00101-31037	00102-31037	00107-31037	00104-31037	00105-31037	00103-31037	00100-31037
4.6×100	00101-31039	00102-31039	00107-31039	00104-31039	00105-31039	00103-31039	00100-31039
4.6×150	00101-31041	00102-31041	00107-31041	00104-31041	00105-31041	00103-31041	00100-31041
4.6×250	00101-31043	00102-31043	00107-31043	00104-31043	00105-31043	00103-31043	00100-31043

Not find the size you want? Contact Welch or your local distributor for other dimensions.

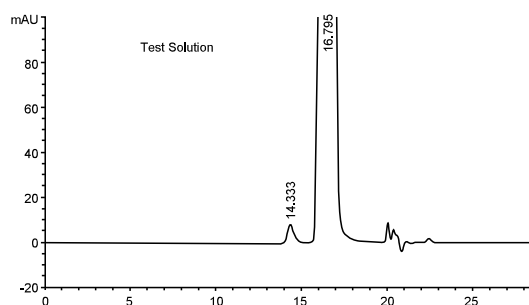
Xtimate® SEC

Xtimate® SEC (size exclusion chromatography), can also be named "global protein hydrophilic modified silica column", is made from ultra high purity, stable silica bonding hydrophilic polymer and diol functional groups. This double bonding mechanism, made nonspecific adsorption of high polymer, protein, biological enzyme, polypeptide and other biological samples, could be applied in separating water-soluble polymer and biomacromolecule. Ultra high purity, stable silica bonding hydrophilic polymer and diol functional groups.

- 5µm or 3µm silica microsphere, high separation efficiency
- 120Å minibore columns is fit for polar compounds like cephalosporins, 300Å is fit for biomacromolecule like protein and polypeptide
- Four pore sizes: 120 Å, 300 Å, 500 Å and 1000 Å

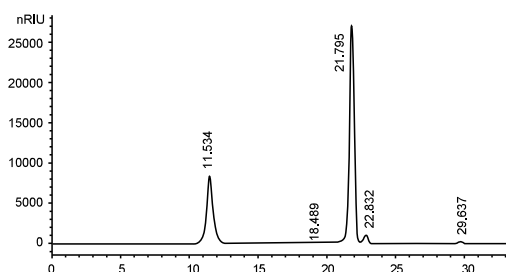
Phase	Xtimate® SEC-120	Xtimate® SEC-300	Xtimate® SEC-700	Xtimate® SEC-1000
Materials	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer
Particle Size(µm)	5	5	5	5
Pore Size(Å)	120	300	700	1000
Protein Molecule Range	500-150000	5000-1250000	15000-5000000	50000-7500000
Soluble Polymer Molecule Mass Range	500-25000	1000-100000	2500-500000	5000-1500000
Maximum Pressure	~4500	~3500	~3000	~3000
pH Range	2-7.5, 8.5-9.5 for short time	2-7.5, 8.5-9.5 for short time	2-7.5, 8.5-9.5 for short time	2-7.5, 8.5-9.5 for short time
Range of Salt Concentration	20mM~2.0M	20mM~2.0M	20mM~2.0M	20mM~2.0M
Highest Temperature(°C)	~80°C	~80°C	~80°C	~80°C
Mobile Phase	Aqueous or organic phase	Aqueous or organic phase	Aqueous or organic phase	Aqueous or organic phase

Sex Hormone in Cosmetics



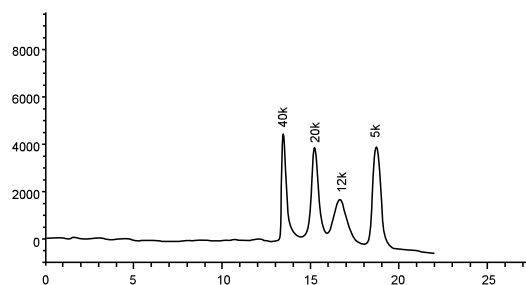
Column:	Xtimate® SEC-120, 3µm, 300 x 7.8mm
Mobile Phase:	HAC:ACN:0.1%Arginine=15:20:65
Flow Rate:	0.5ml/min
Temperature:	35°C
Detector:	276nm
Injection Volume:	100µl

Iron Dextran



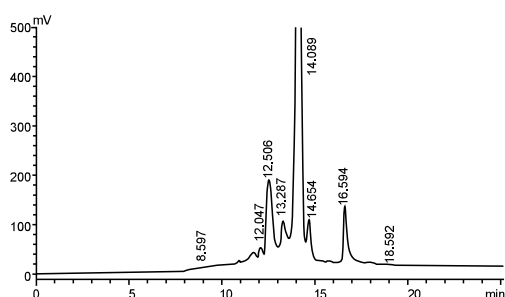
Column:	Xtimate® SEC-300, 5µm, 300 x 7.8mm
Mobile Phase:	Dissolve 7.1g Na ₂ SO ₄ to 1000mL water, filter
Flow Rate:	0.5ml/min
Temperature:	Ambient
Detector:	RID
Injection Volume:	20µl

Analysis of Molecular Weight of Polyethylene Glycol



Column:	Xtimate® SEC-300, 5µm, 300 x 7.8mm
Mobile Phase:	Ultrapure Water
Flow Rate:	1.0ml/min
Temperature:	40°C, RID: 40°C
Detector:	RID
Injection Volume:	20µl

Cefoxitin Sodium



Column:	Xtimate® SEC-120, 5µm, 300 x 7.8mm
Mobile Phase:	Phosphate buffer:ACN=95:5
Flow Rate:	0.9ml/min
Temperature:	30°C,
Detector:	232nm
Injection Volume:	20µl

Ordering Information

Dimension	SEC-120	SEC-300	SEC-700	SEC-1000
4.6×250	00237-31043	00237-33043	00237-34043	00237-35043
7.8×300	00237-31052	00237-33052	00237-34052	00237-35052

Xtimate® Polymer Based Column

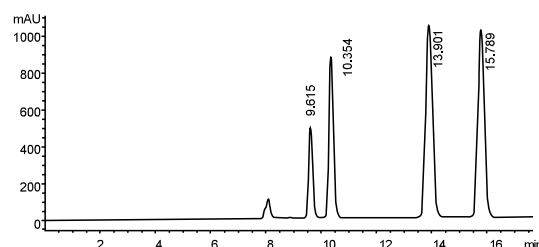
Xtimate® Sugar-H is a special column design for Ribavirin. This column is packed with H⁺ modified low-linking polystyrene-divinylbenzene spheres (PS-DVB), can be applied for the analysis of organic acids and mixed alcohols.

Xtimate® Sugar-Ca is a strong cation exchange column packed with Ca²⁺ modified PS-DVB resins, can be used for the analysis of sugar products.

Xtimate® PS/DVB is based on polystyrene-divinylbenzene. This kind of column can used in extreme condition(pH 1-14).

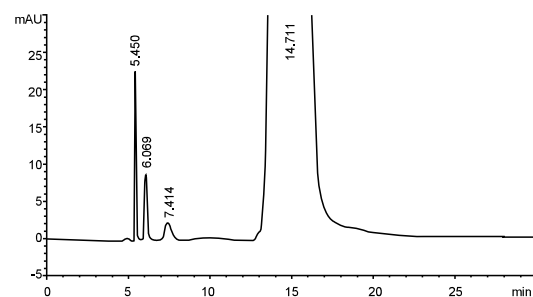
Xtimate® G-10 glucan gel chromatographic column which is applied with GE Healthcare Sephadex G-10 glucan gel, is a special column developed for analysis of ceftazidime, ceftriaxone sodium, cefoperazone sodium, cefotaxime sodium and any other cephalosporins polymers.

Separation of Organic Acids



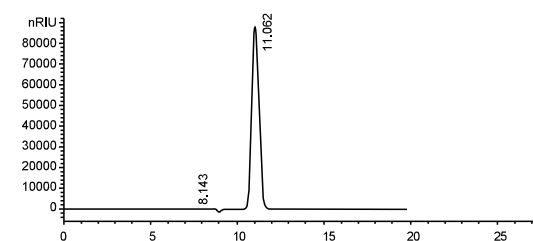
Column:	Xtimate® Sugar-H, 5µm, 300 x 7.8mm
Mobile Phase:	H ₂ SO ₄ water solution (pH 2.0)
Flow Rate:	0.5ml/min
Temperature:	60°C,
Detector:	RID
Injection Volume:	20µl
Organic Acids:	Maleic acid, L-malic acid, fumaric acid, sodium acetate trihydrate

Ketophenylalanine Calcium



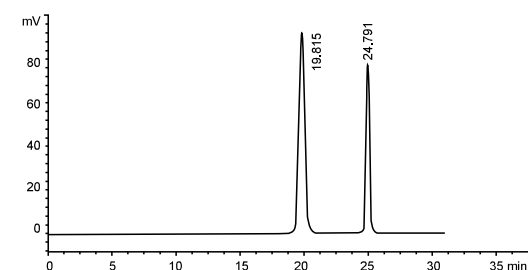
Column:	Xtimate® Sugar-H, 8µm, 300 x 7.8mm
Mobile Phase:	0.025mol/L H ₂ SO ₄ water solution
Flow Rate:	0.8ml/min
Temperature:	20°C,
Detector:	205nm
Injection Volume:	20µl

Xylose



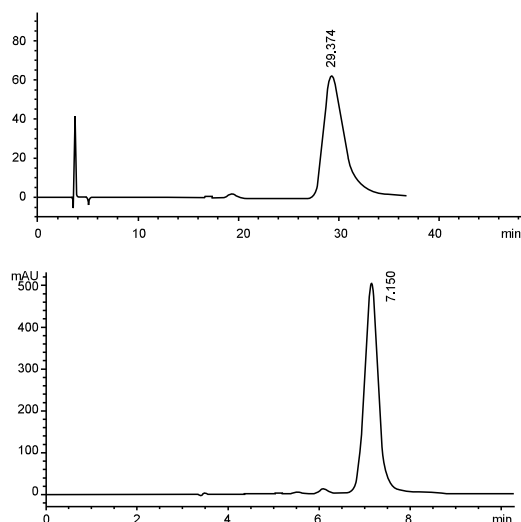
Column:	Xtimate® Sugar-Ca, 5µm, 300 x 7.8mm
Mobile Phase:	Ultra-pure water
Flow Rate:	0.6ml/min
Temperature:	85°C
Detector:	RID 55°C
Injection Volume:	20µl

Mannitol



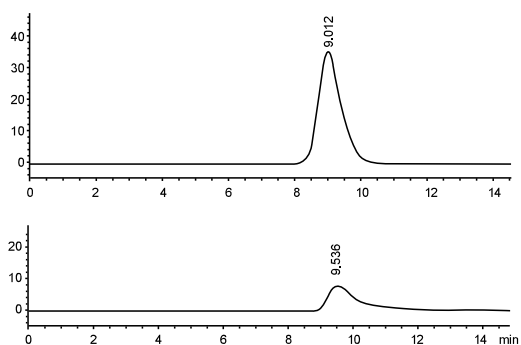
Column:	Xtimate® Sugar-Ca, 8µm, 300 x 7.8mm
Mobile Phase:	Ultra-pure water
Flow Rate:	0.5ml/min
Temperature:	80°C
Detector:	RID 55°C
Injection Volume:	20µl
System suitability test:	R of mannitol and Sorbitol >2

Doxycycline HCl



Column:	Xtimate® PS/DVB, 8µm, 250 x 7.8mm
Mobile Phase:	50g TBA with 100mL water, 200mL buffer(pH 8.0), 25mL TBAHS(10g/L, pH 8.0, adjust with NaOH), 5mL EDTA(40 g/L, pH 8.0, adjust with NaOH), dilute to 500mL with water
Flow Rate:	2.0ml/min
Temperature:	75°C
Detector:	254nm
Injection Volume:	20µl
Notes:	Be sensitive to column temperature

Cefradine Polymer



Column:	Xtimate® G-10, 300x15.0mm
Mobile Phase:	A: 0.2M Na ₂ HPO ₄ :0.2MNaH ₂ PO ₄ =95:5 B: water
Flow Rate:	1.5ml/min
Temperature:	30°C
Detector:	254nm
Injection Volume:	50µl

Ordering Information:

	Sugar-H	Sugar-Ca
8µm, 7.8x50mm	00109-43048	00108-43048
8µm, 7.8x100mm	00109-43049	00108-43049
8µm, 7.8x150mm	00109-43050	00108-43050
8µm, 7.8x250mm	00109-43051	00108-43051
8µm, 7.8x300mm	00109-43052	00108-43052
8µm, 4.6x250mm	00109-43053	00108-43053
5µm, 4.6x250mm	00109-41043	00108-41043
5µm, 4.6x300mm	00109-41044	00108-41044
5µm, 7.8x150mm	00109-41050	00108-41050
5µm, 7.8x250mm	00109-41051	00108-41051
5µm, 7.8x300mm	00109-41052	00108-41052