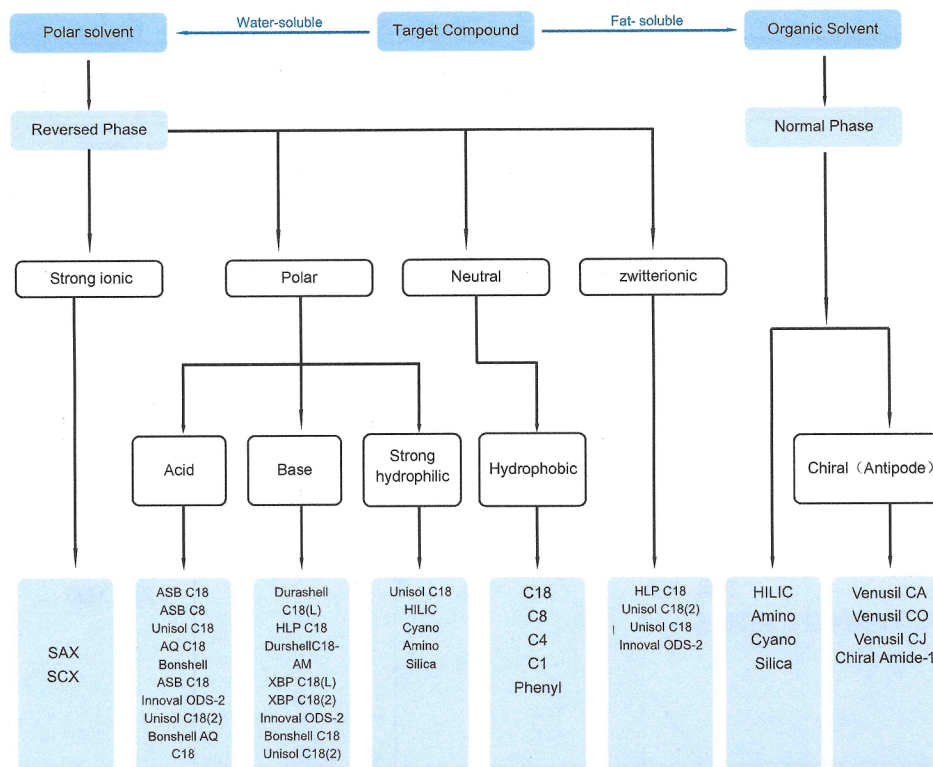


Bonna-Agela HPLC Column Selection Guide

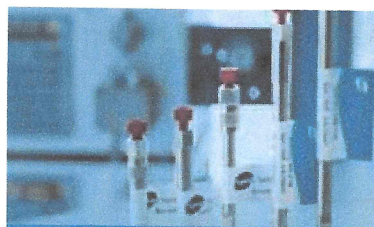


Comparison of Technical Properties for C18 Phases

Stationary Phase	Particle (µm)	Pore (Å)	Surface (m ² /g)	Carbon load(%)	End Capping	ultra Pure Silica
Unisol C18	5	100	380	17	double	yes
Unisol C18(2)	5	110	340	14	Single	yes
Venusil XBP C18	5	100	380	22	double	yes
Venusil AQ C18	5	100	380	18	yes	yes
Venusil XBP C18(2)	5	100	380	18	yes	yes
Venusil XBP C18(L)	5	150	200	15	double	yes
Venusil ASB C18	5	150	200	12	no	yes
Promosil C18	5	100	320	18	double	yes
ZORBAX SB C18	5	80	180	10	no	yes
ZORBAX XDB C18	5	80	180	12	yes	yes
Waters SunFire C18	5	100	340	16	yes	yes
Waters Symmetry C18	5	100	335	19	yes	yes
Waters XTerra MS C18	5	125	—	15.5	yes	—
Hypersil BDS C18	5	130	175	11	yes	no
Hypersil ODS	5	120	170	10	yes	no
Inertsil ODS	5	100	350	14	yes	no
Inertsil ODS3	5	100	450	15	yes	yes
Kromasil C18	5	100	340	19	yes	special
Supelco Discovery C18	5	180	200	12	yes	yes
Luna C18(2)	5	100	400	17.5	yes	yes

Cross-reference for Bonna-Agela HPLC Columns

Contrastive Columns		Bonna-Agela Columns
Manufacture	Columns	Columns
Waters GL Sciences	Atlantis T3 Insertsil ODS-4	Unisol C18(2) 1. Good separation for polar compounds, 100 % aqueous compatibility 2. Good peak shape for basic compounds 3. Resistant for basic biological matrix
Waters Phenomenex GL Sciences GL Sciences YMC Grace Grace Grace	Atlantis-(d)C18 Synergi Hydro RP Insertsil ODS-3 Insertsil ODS-3V YMC Pack ODS-AQ Alltima HP C18 AQ Prevail C18 Prevail OA(organic acid)	Unisol C18 1. 100 % aqueous compatibility 2. Great inertness and efficiency for basic compound
Waters Supelco Grace Thermo	Spherisorb ODS-2 Discovery-C18 Alltima HP C18 Hypersil BDS	Venusil XBP C18 (L) 1. Low surface area, anti-contaminate 2. Good choice for sample with complex matrix which will contaminate stationary phase.
Phenomenex Supelco	Luna-C18 Asentics-C18	Venusil XBP C18 1. high surface area, high C % (23 %) 2. high hydrophobicity 3. good choice for polar or neutral compounds. not suitable for high polar compounds
Phenomenex	Luna-C18(2)	Venusil XBP C18(2) 1. C % (18 %) 2. avoid the strong retention of lipophilic compound
Waters Waters GL Sciences YMC	Symmetry C18 Sunfire C18 Insertsil ODS-2 YMC Pack PRO	Venusil XBP C18(A) 1. Pore size: 120 Å area: 340 m ² /g. 2. Universal column
Phenomenex GL Sciences	Jupiter 300-C18 Insertsil WP 300-C18	Venusil XBP C18(T) 1. Pore size: 300 Å 2. Good choice for polypeptide and protein samples (M>3000)
Waters Agilent	Xterra Extend	Durashell RP 1. Multi function group bonded 2. Wide pH range(1.5-12.0) 3. Large sample loading in high pH situation, suitable for basic compounds separation
Waters	Xbridge	Durashell C18(L) 1. Hybrid surface 2. Wide pH range (1.5-12.0) 3. Long life time in high pH environment 4. High loading capacity for basic compounds for preparative applications
Phenomenex	Gemini	Durashell C18 1. Wide pH range (1.5-12.0) 2. High loading capacity for basic compounds for preparative applications
Waters Agilent Grace Merck	Resolve C18 SB-C18 Prevail OA(organic acid) LiChrospher RP C18	Venusil ASB C18 1. Good choice for the separation of polar compounds in low or mid pH environment. 2. 100 % aqueous compatibility



Contrastive Columns		Bonna-Agela Columns
Manufacture	Columns	Columns
Agilent	SB-Aq	Venusil ASB C8 1. Good choice for the separation of polar compounds in low or mid pH environment. 2. 100 % aqueous compatibility
Agilent Thermo	XDB-C18 Hypersil ODS2	Innoval ODS-2 1. High stability and extended lifetime 2. Contamination tolerance 3. Excellent dispersion and high recovery
Agilent Waters Supelco	Bonus-RP Shield RP 18 Discovery RP-Amide C16	Venusil HLP 1. Greatly improved peak shape for basic compounds. 2. Enhanced retention and separation of polar compounds and steric isomers. 3. High loading capacity for polar compounds
Phenomenex	Luna NH ₂	Venusil XBP NH₂ 1. Can be used as reversed phase or normal phase. 2. Good choice for the separation of carbohydrates.
Waters Phenomenex	Spherisorb CN Luna CN	Venusil XBP CN 1. Can be used as reversed phase or normal phase. 2. Good choice for the polar compounds
Waters Phenomenex	Spherisorb Si Luna silica	Venusil XBP Silica low metal content
Waters Merck Kromasil	Spherisorb ODS-2 LiChrospher RP C18 Endcapped Kromasil C18	Promosil C18 1. High price ratio 2. pH range 1.5-9.0
Waters	Spherisorb Si	Promosil Silica NP column with high cost efficiency
Phenomenex	Luna SCX	Venusil SCX 1. Bonded with sulfo group. 2. Good choice for basic compounds, water soluble polar compounds and bio-molecular
Agilent	SAX	Venusil SAX 1. Bonded with quaternary amine group 2. Good choice for basic compounds, water soluble polar compounds and bio-molecular
Phenomenex	Luna PFP	Venusil PFP 1. Excellent performance in the separation of aromatic, a heterocyclic compound, halides, 2. Widely used in Chinese pharmaceutical.
Waters	ACQUITY HSS C18	UHP Innoval C18 Pressure: 600 bar (9000 psi)
Waters Agilent	ACQUITY HSS C18 SB SB-C18 1.8 μm	UHP ASB C18 1. Pressure: 600 bar (9000 psi) 2. Good choice for the separation of polar compounds in low or mid pH environment. 3. 100 % aqueous compatibility
Agilent	Poreshell 120SB-C18	Bonshell ASBC18 1. Narrow particle size distribution 2. Long life time 3. Large sample loading 4. Contamination-resistant 5. Solvent saving 6. High efficiency

Contrastive Columns		Bonna-Agela Columns
Manufacture	Columns	Columns
Phenomenex	Synergi Polar-Phenyl	Venusil XBP Polar-Phenyl Good choice for high polar and aromatic compounds
Phenomenex	Synergi Max-RP	Venusil XBP C12 Good choice for basic compounds in mid pH environment
Daicel Chiral	CHIRALCEL AD-H	Venusil CA For the compounds with amide group, aromatic group, carbonyl group, nitro group, sulfonyl group, cyano group and hydroxyl group, as well as amine and carboxylic acid
Daicel Chiral	CHIRALCEL OD-H	Venusil CO For β blockers and steroids
Daicel Chiral	CHIRALCEL OJ-H	Venusil CJ For the compounds with amide group, aromatic group, carbonyl group, nitro group, sulfonyl group, cyano group and hydroxyl group, as well as amine and carboxylic acid