



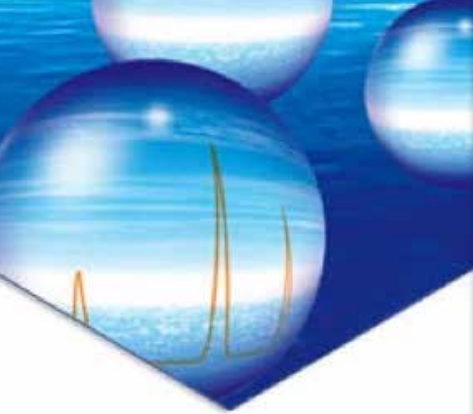
# MacroSep™ BIO-Gold HPLC Columns

pharmaceutical • environmental • chemical • biochemical  
separation & purification



ES Industries • 701 S. Route 73 • West Berlin, NJ 08091 USA  
856-753-8400 • 800-356-6140 • Fax 856-753-8484

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# MacroSep BIO-Gold Stationary Phases & Columns

- *A Recognized Supplier of Quality HPLC Columns*
- *Available in 1.9, 3, 5 and 10  $\mu\text{m}$  for Analytical and Preparative*
- *Comprehensive Technical and Method Development Assistance*
- *A Premium HPLC Column Manufacturer Producing Highly Efficient Columns with Superior Reproducibility*
- *Extensive Capabilities to Produce State-of-the-Art Bonded Phase Chemistries*
- *The Experience to Provide the HPLC Chromatographer with the Best in Column Technology*

**MacroSep™ BIO-Gold** packings are based on ultra-high purity spherical silica, state-of-the-art high density bonding and full endcapping produces the separation or purification of high molecular weight bio compounds such as proteins and peptides.

Significant improvements in acidic and alkaline resistance has been achieved, so MacroSep BIO-Gold materials can be used for extended periods of time in acidic mobile phase condition and rinsed for recovery with NaOH containing buffer.

MacroSep BIO - Gold columns are manufactured utilizing tight process control of the silica, bonding and column packing processes. The reproducible column packing method control provides exceptional efficiency, symmetry and reproducibility.

There are eight phases (see below) all available in 1.9 $\mu\text{m}$ , 3 $\mu\text{m}$ , 5 $\mu\text{m}$  and 10 $\mu\text{m}$  particle sizes. The 10 $\mu\text{m}$  material is available in bulk. For your convenience all these materials are available in either 400 angstrom and 1200 angstrom pore diameters.

## Available MacroSep BIO-Gold products:

**MacroSep BIO-Gold C4**  
**MacroSep BIO-Gold C8**  
**MacroSep BIO-Gold C18**  
**MacroSep BIO-Gold PFP**  
**MacroSep BIO-Gold Naphthyl**  
**MacroSep BIO-Gold BiPhenyl**  
**MacroSep BIO-Gold DiPhenyl**  
**MacroSep BIO-Gold HPR**  
**1.9  $\mu\text{m}$  MacroSep BIO-Gold Phenyl kits**  
**3  $\mu\text{m}$  MacroSep BIO-Gold kits**

**All available in 1.9, 3, 5 and 10  $\mu\text{m}$  for Analytical and Preparative Chromatography**

## The MacroSep BIO-Gold Family

**MacroSep BIO - Gold C18** - a hydrophobic phase ideal for the separation of high molecular weight peptides and oligonucleic acids.

**MacroSep BIO - Gold C8** - less hydrophobic and may yield faster separations when compared to C18 and is used to separate many classes of compounds including bio-pharmaceuticals and biologicals.

**MacroSep BIO - Gold C4** - least hydrophobic of all the alkyl MacroSep BIO phases (ODS & C8) and may be used for hydrophilic proteins and BIO-polymers.

**MacroSep BIO - Gold PFP** - strongest pi-pi interaction of all the BIO-Gold phases. The most hydrophilic of the BIO-Gold phenyl phases and may be used for fluorine modified biologicals based upon a fluorophilicity interaction.

**MacroSep BIO - Gold Naphthyl** - highest bonding density resulting in an inert and stable phase, very high hydrophobicity and a significant pi-pi interaction. Ideal for the separation of high MW peptides and oligonucleic acids.

**MacroSep BIO - Gold Biphenyl** - very good bonding density, less hydrophobic than the Naphthyl and provides excellent pi-pi interactions. Used to separate bio-pharmaceuticals and biologicals.

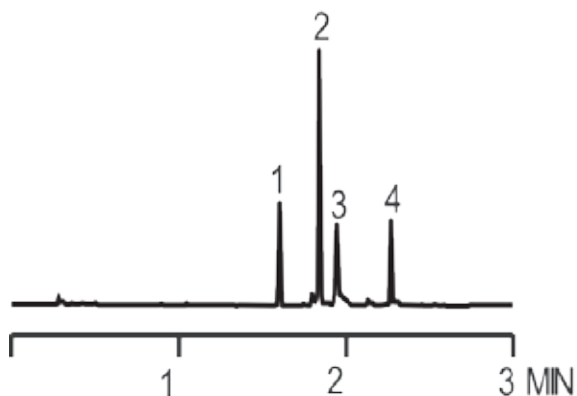
**MacroSep BIO - Gold Diphenyl** - the lowest bonding density and one of the lowest hydrophobicities of any BIO-Gold phenyl phases. Provides some site specific phenyl interactions dependant on the molecular configuration of the target. Resolves many classes of proteins and bio-polymers.

**MacroSep BIO - Gold HPR** significantly reduces the hydrophobic interaction of the stationary phase. This reduced interaction can yield less retention of hydrophobic biological molecules yielding better recoveries and quicker separations. HPR is the most hydrophilic of the MacroSep BIO-Gold phases and may be useful for fluorine modified biologicals based upon a fluorophilicity interaction.

## MacroSep BIO - Gold C18

MacroSep BIO - Gold C18 takes bio selectivity to the next level of selective separation performance by utilizing ultra high purity silica and state-of-the-art bonding technology. Designed for bio-pharmaceutical and bio-chemical applications and ideal for the separation of proteins, high molecular weight peptides and oligonucleic acids. It is specifically engineered to deliver high recoveries and excellent peak shapes for even the most difficult separations.

MacroSep BIO-Gold C18 250 X 4.6 mm 5  $\mu$ m  
Catalog # 1552G1-MSP-GLC18



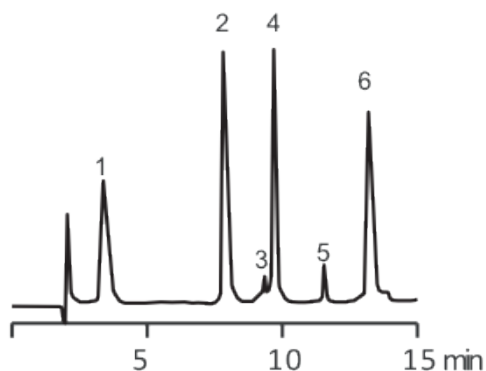
Column: MacroSep BIO - Gold C18  
Dimensions: 4.6 x 250 mm  
Mobile Phase: A: 0.1% TFA in H<sub>2</sub>O  
B: 0.1% TFA in MeCN  
Gradient: Time/%B: 0/5, 30/70  
Flow Rate: 1.0mL/min  
Detection: UV280nm

1. Ribonuclease A  
2. Cytochrome C  
3. Holo-transferrin  
4. Apomyoglobin

## MacroSep BIO - Gold C4

Columns are designed for bio-pharmaceutical and bio-chemical applications and are ideal for the separation of hydrophilic proteins and high molecular weight peptides and may also be used to reduce analysis times.

MacroSep BIO-Gold C4 50 X 4.6 mm 5  $\mu$ m  
Catalog # 1552G1-MSP-GLC4



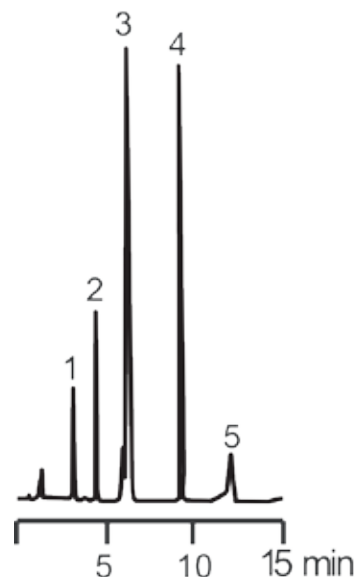
Column: MacroSep BIO - Gold C4 5 $\mu$ m  
Column Dimensions: 4.6x150mm  
Mobile Phase: A: 0.15% TFA  
B: 0.13% TFA in ACN:H<sub>2</sub>O (95:5)  
Gradient Time: %B: 0:30, 15:60  
Flow Rate: 1.0mL/min  
Detection: UV220nm

1. Ribonuclease A  
2. Cytochrome C  
3. Lysozyme Impurity  
4. Lysozyme  
5. Myoglobin Impurity  
6. Myoglobin

## MacroSep BIO - Gold C8

MacroSep BIO - Gold C8 columns are ideal for the separation of less hydrophobic proteins and high molecular weight peptides and are designed for bio-pharmaceutical and bio-chemical applications. As with MacroSep BIO - Gold C18 columns MacroSep BIO - Gold C8 columns are specifically engineered to deliver high recoveries and excellent peak shapes for even the most difficult separations and for a variety of biological molecules

MacroSep BIO-Gold C8 250 X 4.6 mm 5  $\mu$ m  
Catalog # 1552G1-MSP-GLC8

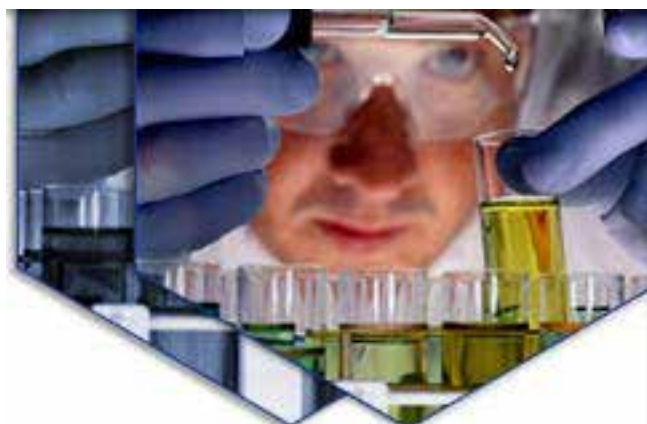


Column: MacroSep BIO - Gold C8 5 $\mu$ m Column  
Dimensions: 4.6x250mm  
Mobile Phase: A: 0.1% TFA in H<sub>2</sub>O  
B: 0.1% TFA in ACN  
Gradient Time %B: 0 mins:25% to 30 mins:100%  
Flow Rate: 1.5 mL/min  
Detection: UV 254 nm

1. Ribonuclease A  
2. Insulin  
3. Lysozyme  
4. Myoglobin  
5. Ovalbumin

**All available in 400 Å and 1200 Å for Analytical and Preparative Chromatography**

For ordering information please see Pages 6 & 7.



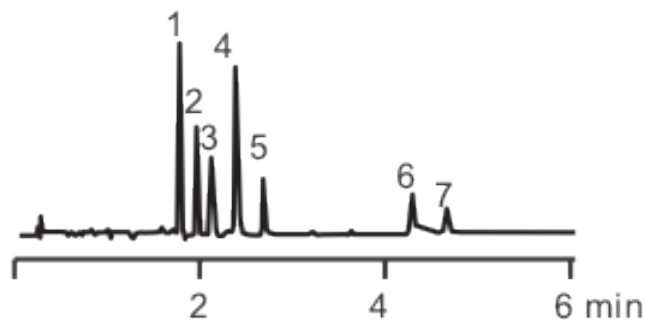
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## MacroSep BIO - Gold Naphthyl

MacroSep BIO - Gold Naphthyl is based upon bonded planar naphthalene groups. It has the highest bonding density and surface coverage of all the MacroSep Bio-Gold phases providing maximum hydrophobic interaction and superior inertness. It is suitable for variety of solute interactions including pi-pi and hydrophobic.

MacroSep BIO-Gold Naphthyl 250 X 4.6 mm 5  $\mu$ m  
Catalog # 1552G1-MSP-GLNAP



Column: MacroSep BIO-Gold Naphthyl 5 $\mu$ m  
Dimensions: 4.6x250mm  
Mobile Phase: A: 0.05% Formic Acid  
(0.05% Formic Acid in Solvent B)  
B: ACN:Water (90:10)  
Gradient: Time:%B: 0:10, 60:40  
Flow Rate: 1.0mL/min  
Detection: UV280nm

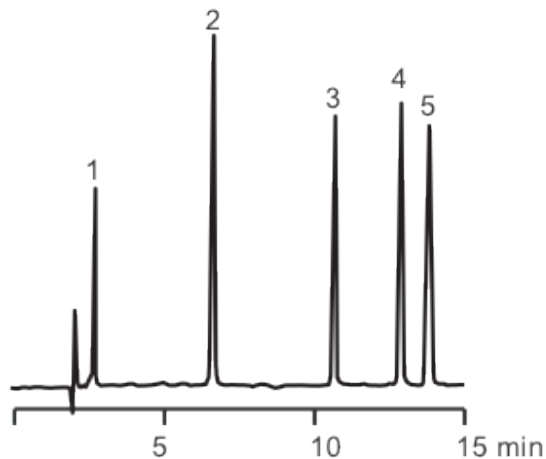
1. Methionin Enkephalin
2. Oxytocin
3. Leucin Enkephalin
4. Angiotensin II
5. Angiotensin I
6. Insulin
7. Insulin Chain B

## MacroSep BIO - Gold PFP

Fluorinated phases such as pentafluorophenyl (PFP) with the highest pi-pi interaction of any the MacroSep BIO series stationary phases are of great importance in HPLC because their selectivity is orthogonal to the selectivity of traditional alkyl phases (C18, C8, C4 etc.). In addition it may be useful for fluorine modified biologics based upon a fluorophilicity interaction. Notably in the separation of closely related compounds such as natural compounds and their metabolites in biological matrices, where separation is often difficult or not possible at all on C18 phases.

The alternative retention mechanism PFP phases exhibit are therefore increasingly important for method development in bio-pharmaceuticals and the analysis of natural compounds.

MacroSep BIO-Gold PFP 150 X 4.6 mm 5  $\mu$ m  
Catalog # 1252G1-MSP-GLPFP



Column: MacroSep BIO - Gold PFP 5 $\mu$ m  
Dimensions: 4.6x150mm  
Mobile Phase: A: 0.15% TFA in H<sub>2</sub>O  
B: 0.13% TFA in ACN  
Gradient: Time:%B: 0:10, 15:30  
Flow Rate: 1.0mL/min  
Detection: UV220nm

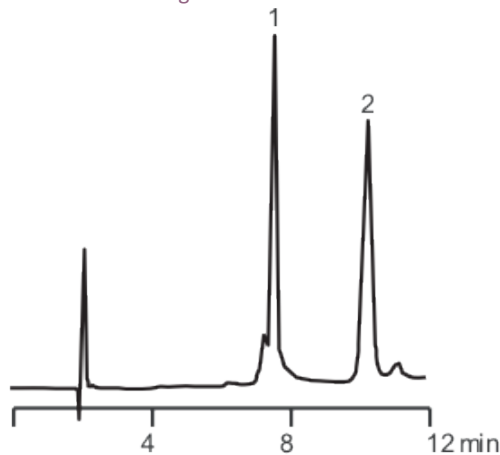
1. GLY-TYR
2. VAL-TYR-VAL
3. Methionine Enkephalin
4. Leucine Enkephalin
5. Angiotensin II

**All available in 400 Å and 1200 Å for Analytical and Preparative Chromatography**

## MacroSep BIO - Gold Biphenyl

Is based upon bonded biphenyl groups with a high bonding density and suitable for variety of solute interactions including pi-pi and hydrophobic. MacroSep BIO - Gold Biphenyl is designed for bio-pharmaceutical and bio-chemical applications.

MacroSep BIO-Gold Biphenyl 250 X 4.6 mm 5  $\mu$ m  
Catalog # 1252G1-MSP-GLBPH



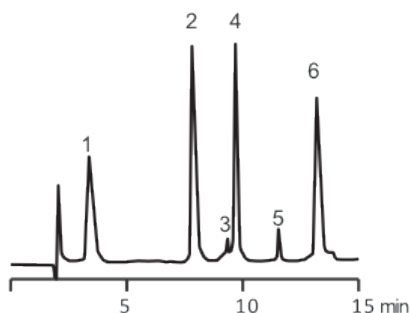
Column: MacroSep BIO - Gold Biphenyl 5 $\mu$ m  
Dimensions: 4.6x150mm  
Mobile Phase: A: 0.15% TFA in H<sub>2</sub>O  
B: 0.13% TFA in ACN  
Gradient: Time:%B: 0:40, 15:55  
Flow Rate: 1.0mL/min  
Detection: UV220nm

1. D-Chymotrypsinogen
2. Carbonic Anhydrase

## MacroSep BIO - Gold Diphenyl

Has a unique phenyl ring configuration and may provide some site specific interactions and a variety of solute interactions including pi-pi and hydrophobic going well beyond the simple hydrophobic interaction of MacroSep BIO – Gold alkyl phases. BIO - Gold Biphenyl is designed for bio-pharmaceutical and bio-chemical applications.

MacroSep BIO-Gold Diphenyl 250 X 4.6 mm 5 µm  
Catalog # 1252G1-MSP-GLDPH



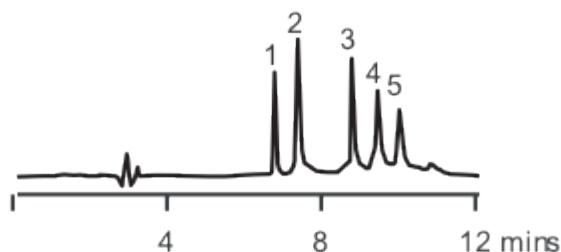
Column: MacroSep BIO - Gold Diphenyl 5µm  
Column Dimensions: 4.6x150mm  
Mobile Phase: A: 0.15% TFA  
                  B: 0.13% TFA in ACN:H<sub>2</sub>O (95:5)  
Gradient Time: %B: 0:30, 15:60  
Flow Rate: 1.0mL/min

1. Ribonuclease A
2. Cytochrome C
3. Lysozyme Impurity
4. Lysozyme
5. Myoglobin Impurity
6. Myoglobin

## MacroSep BIO - Gold HPR

Consists of unique perfluorinated aliphatic bonded groups which are highly hydrophilic and reduce the hydrophobic interaction of the stationary phase resulting in less retention of hydrophobic biological molecules with better recoveries and faster separations. Specially engineered for analysis of hydrophobic proteins, lipid peptides, polypeptides with aliphatic side chains and membrane-spanning peptides. In addition HPR may be useful for fluorine modified biologics based upon a fluorophilicity interaction.

MacroSep BIO-Gold HPR 250 X 4.6 mm 5 µm  
Catalog # 1552G1-MSP-GLHPR



Column: MacroSep BIO - Gold HPR 5µm  
Dimensions: 4.6x250mm  
Mobile Phase: A: 0.01% TFA in H<sub>2</sub>O  
                  B: 0.01% TFA in ACN  
Gradient: Time:%B: 0:25, 20:95  
Flow Rate: 1.0mL/min  
Detection: UV214nm

1. Insulin
2. Trypsinogen
3. Lactalbumin
4. Myoglobin
5. Carbonic anhydrase

**All available in 1.9, 3, 5 and 10 µm for Analytical and Preparative Chromatography**

## Column Packing and Hardware

One of the most important parts of the whole column production sequence is the packing of the column. Over the last 35 years of column production, we have developed and refined techniques for packing columns and now utilize the most advanced column packing technology in the industry. This technology enables us to pack the finest columns available. A significant part of our superior packing technology resides in unsurpassed column hardware where only end fittings and column tubing of the highest quality and performance are acceptable. Stainless steel column tubing with highly polished, mirrored finished internal bores are used. As a result, the chromatographer can be confident that they are receiving the highest quality column hardware in the industry.

## Testing

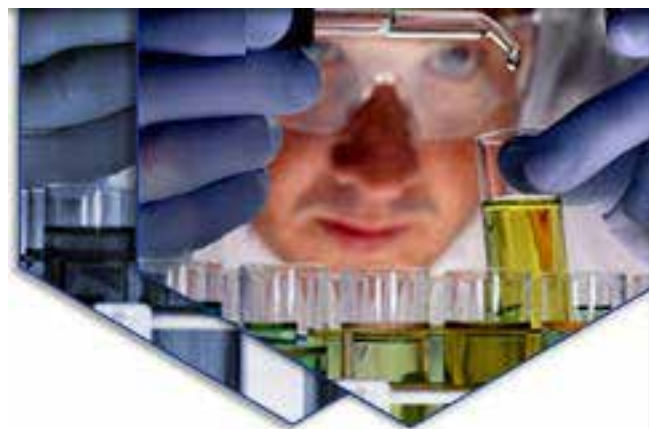
Every step of our column production sequence is strictly monitored and controlled by an extensive battery of tests which are applied to all steps including silica particle formation, bonding reagents and reactions, column hardware, and packing which ensure the quality of the final product - with each test designed to measure a customer-critical parameter.

The final batch test for each product has been carefully designed and tailored to test the performance standard set for each phase and each column is tested individually to check the integrity and performance of the packed bed.

## Guaranteed Performance

Every ES Industries column is guaranteed to deliver the highest plate counts and most symmetrical peaks for even the most difficult analysis. We are confident the MacroSep BIO-Gold line of products will deliver the highest quality and most reliable bio-separation columns available to you.

For ordering information please see Pages 6 & 7



## MacroSep Gold-BIO 400 Å column screening kits

The MacroSep Bio-Gold 1.9 and 3 µm column screening kits, with five phases included, are available in convenient column dimensions for optimal bio-chromatography phase selection on a screening panel.

The 3 µm MacroSep Bio-Gold Column Screening Kit Contains one (1) 100 X 2.1mm column of each of the following phases:

MacroSep BIO-Gold C4  
 MacroSep BIO-Gold C18  
 MacroSep BIO-Gold HPR  
 MacroSep BIO-Gold PFP  
 MacroSep BIO-Gold Biphenyl

The 1.9 µm MacroSep BIO-Gold Phenyl Column Screening Kit Contains one (1) 100 X 2.1mm column of each of the following phases:

MacroSep BIO-Gold Phenyl  
 MacroSep BIO-Gold Naphthyl  
 MacroSep BIO-Gold Biphenyl  
 MacroSep BIO-Gold Diphenyl  
 MacroSep BIO-Gold PFP

For ordering information please see below

<b>MacroSep BIO-Gold 400 Å Columns-Ordering Information</b>				
Description	Part Number			
Kit				
MacroSep Bio-Gold Column Kit 1.9 µm	522AG1-MSP-GLKIT			
MacroSep Bio-Gold Column Kit 3 µm	1221G1-MSP-GLKIT			
Description	Analytical (4.6 mm)	Analytical (4.0 mm)	SmallBore (3.0 mm)	Small Bore(2.1 mm)
3 micron				
MacroSep BIO-Gold C4 50 mm	1151G1-MSP-GLC4	1141G1-MSP-GLC4	11G131-MSP-GLC4	1121G1-MSP-GLC4
MacroSep BIO-Gold C4 100 mm	1251G1-MSP-GLC4	1241G1-MSP-GLC4	1231G1-MSP-GLC4	1221G1-MSP-GLC4
MacroSep BIO-Gold C4 150 mm	1351G1-MSP-GLC4	1341G1-MSP-GLC4	1331G1-MSP-GLC4	1321G1-MSP-GLC4
MacroSep BIO-Gold C8 50 mm	1151G1-MSP-GLC8	1141G1-MSP-GLC8	11G131-MSP-GLC8	1121G1-MSP-GLC8
MacroSep BIO-Gold C8 100 mm	1251G1-MSP-GLC8	1241G1-MSP-GLC8	1231G1-MSP-GLC8	1221G1-MSP-GLC8
MacroSep BIO-Gold C8 150 mm	1351G1-MSP-GLC8	1341G1-MSP-GLC8	1331G1-MSP-GLC8	1321G1-MSP-GLC8
MacroSep BIO-Gold C18 50 mm	1151G1-MSP-GLC18	1141G1-MSP-GLC18	11G131-MSP-GLC18	1121G1-MSP-GLC18
MacroSep BIO-Gold C18 100 mm	1251G1-MSP-GLC18	1241G1-MSP-GLC18	1231G1-MSP-GLC18	1221G1-MSP-GLC18
MacroSep BIO-Gold C18 150 mm	1351G1-MSP-GLC18	1341G1-MSP-GLC18	1331G1-MSP-GLC18	1321G1-MSP-GLC18
MacroSep BIO-Gold PFP 50 mm	1151G1-MSP-GLPFP	1141G1-MSP-GLPFP	11G131-MSP-GLPFP	1121G1-MSP-GLPFP
MacroSep BIO-Gold PFP 100 mm	1251G1-MSP-GLPFP	1241G1-MSP-GLPFP	1231G1-MSP-GLPFP	1221G1-MSP-GLPFP
MacroSep BIO-Gold PFP 150 mm	1351G1-MSP-GLPFP	1341G1-MSP-GLPFP	1331G1-MSP-GLPFP	1321G1-MSP-GLPFP
MacroSep BIO-Gold Naphthyl 50 mm	1151G1-MSP-GLNAP	1141G1-MSP-GLNAP	11G131-MSP-GLNAP	1121G1-MSP-GLNAP
MacroSep BIO-Gold Naphthyl 100 mm	1251G1-MSP-GLNAP	1241G1-MSP-GLNAP	1231G1-MSP-GLNAP	1221G1-MSP-GLNAP
MacroSep BIO-Gold Naphthyl 150 mm	1351G1-MSP-GLNAP	1341G1-MSP-GLNAP	1331G1-MSP-GLNAP	1321G1-MSP-GLNAP
MacroSep BIO-Gold Biphenyl 50 mm	1151G1-MSP-GLBPH	1141G1-MSP-GLBPH	11G131-MSP-GLBPH	1121G1-MSP-GLBPH
MacroSep BIO-Gold Biphenyl 100 mm	1251G1-MSP-GLBPH	1241G1-MSP-GLBPH	1231G1-MSP-GLBPH	1221G1-MSP-GLBPH
MacroSep BIO-Gold Biphenyl 150 mm	1351G1-MSP-GLBPH	1341G1-MSP-GLBPH	1331G1-MSP-GLBPH	1321G1-MSP-GLBPH
MacroSep BIO-Gold Diphenyl 50 mm	1151G1-MSP-GLDPH	1141G1-MSP-GLDPH	11G131-MSP-GLDPH	1121G1-MSP-GLDPH
MacroSep BIO-Gold Diphenyl 100 mm	1251G1-MSP-GLDPH	1241G1-MSP-GLDPH	1231G1-MSP-GLDPH	1221G1-MSP-GLDPH
MacroSep BIO-Gold Diphenyl 150 mm	1351G1-MSP-GLDPH	1341G1-MSP-GLDPH	1331G1-MSP-GLDPH	1321G1-MSP-GLDPH
MacroSep BIO-Gold HPR 50 mm	1151G1-MSP-GLHPR	1141G1-MSP-GLHPR	11G131-MSP-GLHPR	1121G1-MSP-GLHPR
MacroSep BIO-Gold HPR 100 mm	1251G1-MSP-GLHPR	1241G1-MSP-GLHPR	1231G1-MSP-GLHPR	1221G1-MSP-GLHPR
MacroSep BIO-Gold HPR 150 mm	1351G1-MSP-GLHPR	1341G1-MSP-GLHPR	1331G1-MSP-GLHPR	1321G1-MSP-GLHPR

Columns are also available in 1.9 and 10 micron material and 1200 Å pore diameter.  
 Visit our web site at [www.esind.com](http://www.esind.com) or call 1-856-753-8400  
 for pricing and ordering information

<b>MacroSep BIO-Gold 400 Å Columns - Ordering Information</b>					
<b>Description</b>	<b>Analytical (4.6 mm)</b>	<b>Analytical (4.0 mm)</b>	<b>SmallBore (3.0 mm)</b>	<b>Small Bore(2.1 mm)</b>	
5 micron					
MacroSep BIO-Gold C4 50 mm	1152G1-MSP-GLC4	1142G1-MSP-GLC4	1132G1-MSP-GLC4	1122G1-MSP-GLC4	
MacroSep BIO-Gold C4 100 mm	1252G1-MSP-GLC4	1242G1-MSP-GLC4	1232G1-MSP-GLC4	1222G1-MSP-GLC4	
MacroSep BIO-Gold C4 150 mm	1352G1-MSP-GLC4	1342G1-MSP-GLC4	1332G1-MSP-GLC4	1322G1-MSP-GLC4	
MacroSep BIO-Gold C4 250 mm	1552G1-MSP-GLC4	1542G1-MSP-GLC4	1532G1-MSP-GLC4	1522G1-MSP-GLC4	
MacroSep BIO-Gold C4 300 mm	1652G1-MSP-GLC4	1642G1-MSP-GLC4	1632G1-MSP-GLC4	1622G1-MSP-GLC4	
MacroSep BIO-Gold C8 50 mm	1152G1-MSP-GLC8	1142G1-MSP-GLC8	1132G1-MSP-GLC8	1122G1-MSP-GLC8	
MacroSep BIO-Gold C8 100 mm	1252G1-MSP-GLC8	1242G1-MSP-GLC8	1232G1-MSP-GLC8	1222G1-MSP-GLC8	
MacroSep BIO-Gold C8 150 mm	1352G1-MSP-GLC8	1342G1-MSP-GLC8	1332G1-MSP-GLC8	1322G1-MSP-GLC8	
MacroSep BIO-Gold C8 250 mm	1552G1-MSP-GLC8	1542G1-MSP-GLC8	1532G1-MSP-GLC8	1522G1-MSP-GLC8	
MacroSep BIO-Gold C8 300 mm	1652G1-MSP-GLC8	1642G1-MSP-GLC8	1632G1-MSP-GLC8	1622G1-MSP-GLC8	
MacroSep BIO-Gold C18 50 mm	1152G1-MSP-GLC18	1142G1-MSP-GLC18	1132G1-MSP-GLC18	1122G1-MSP-GLC18	
MacroSep BIO-Gold C18 100 mm	1252G1-MSP-GLC18	1242G1-MSP-GLC18	1232G1-MSP-GLC18	1222G1-MSP-GLC18	
MacroSep BIO-Gold C18 150 mm	1352G1-MSP-GLC18	1342G1-MSP-GLC18	1332G1-MSP-GLC18	1322G1-MSP-GLC18	
MacroSep BIO-Gold C18 250 mm	1552G1-MSP-GLC18	1542G1-MSP-GLC18	1532G1-MSP-GLC18	1522G1-MSP-GLC18	
MacroSep BIO-Gold C18 300 mm	1652G1-MSP-GLC18	1642G1-MSP-GLC18	1632G1-MSP-GLC18	1622G1-MSP-GLC18	
MacroSep BIO-Gold PFP 50 mm	1152G1-MSP-GLPFP	1142G1-MSP-GLPFP	1132G1-MSP-GLPFP	1122G1-MSP-GLPFP	
MacroSep BIO-Gold PFP 100 mm	1252G1-MSP-GLPFP	1242G1-MSP-GLPFP	1232G1-MSP-GLPFP	1222G1-MSP-GLPFP	
MacroSep BIO-Gold PFP 150 mm	1352G1-MSP-GLPFP	1342G1-MSP-GLPFP	1332G1-MSP-GLPFP	1322G1-MSP-GLPFP	
MacroSep BIO-Gold PFP 250 mm	1552G1-MSP-GLPFP	1542G1-MSP-GLPFP	1532G1-MSP-GLPFP	1522G1-MSP-GLPFP	
MacroSep BIO-Gold PFP 300 mm	1652G1-MSP-GLPFP	1642G1-MSP-GLPFP	1632G1-MSP-GLPFP	1622G1-MSP-GLPFP	
MacroSep BIO-Gold Naphthyl 50 mm	1152G1-MSP-GLNAP	1142G1-MSP-GLNAP	1132G1-MSP-GLNAP	1122G1-MSP-GLNAP	
MacroSep BIO-Gold Naphthyl 100 mm	1252G1-MSP-GLNAP	1242G1-MSP-GLNAP	1232G1-MSP-GLNAP	1222G1-MSP-GLNAP	
MacroSep BIO-Gold Naphthyl 150 mm	1352G1-MSP-GLNAP	1342G1-MSP-GLNAP	1332G1-MSP-GLNAP	1322G1-MSP-GLNAP	
MacroSep BIO-Gold Naphthyl 250 mm	1552G1-MSP-GLNAP	1542G1-MSP-GLNAP	1532G1-MSP-GLNAP	1522G1-MSP-GLNAP	
MacroSep BIO-Gold Naphthyl 300 mm	1652G1-MSP-GLNAP	1642G1-MSP-GLNAP	1632G1-MSP-GLNAP	1622G1-MSP-GLNAP	
MacroSep BIO-Gold Biphenyl 50 mm	1152G1-MSP-GLBPH	1142G1-MSP-GLBPH	1132G1-MSP-GLBPH	1122G1-MSP-GLBPH	
MacroSep BIO-Gold Biphenyl 100 mm	1252G1-MSP-GLBPH	1242G1-MSP-GLBPH	1232G1-MSP-GLBPH	1222G1-MSP-GLBPH	
MacroSep BIO-Gold Biphenyl 150 mm	1352G1-MSP-GLBPH	1342G1-MSP-GLBPH	1332G1-MSP-GLBPH	1322G1-MSP-GLBPH	
MacroSep BIO-Gold Biphenyl 250 mm	1552G1-MSP-GLBPH	1542G1-MSP-GLBPH	1532G1-MSP-GLBPH	1522G1-MSP-GLBPH	
MacroSep BIO-Gold Biphenyl 300 mm	1652G1-MSP-GLBPH	1642G1-MSP-GLBPH	1632G1-MSP-GLBPH	1622G1-MSP-GLBPH	
MacroSep BIO-Gold Diphenyl 50 mm	1152G1-MSP-GLDPH	1142G1-MSP-GLDPH	1132G1-MSP-GLDPH	1122G1-MSP-GLDPH	
MacroSep BIO-Gold Diphenyl 100 mm	1252G1-MSP-GLDPH	1242G1-MSP-GLDPH	1232G1-MSP-GLDPH	1222G1-MSP-GLDPH	
MacroSep BIO-Gold Diphenyl 150 mm	1352G1-MSP-GLDPH	1342G1-MSP-GLDPH	1332G1-MSP-GLDPH	1322G1-MSP-GLDPH	
MacroSep BIO-Gold Diphenyl 250 mm	1552G1-MSP-GLDPH	1542G1-MSP-GLDPH	1532G1-MSP-GLDPH	1522G1-MSP-GLDPH	
MacroSep BIO-Gold Diphenyl 300 mm	1652G1-MSP-GLDPH	1642G1-MSP-GLDPH	1632G1-MSP-GLDPH	1622G1-MSP-GLDPH	
MacroSep BIO-Gold HPR 50 mm	1152G1-MSP-GLHPR	1142G1-MSP-GLHPR	1132G1-MSP-GLHPR	1122G1-MSP-GLHPR	
MacroSep BIO-Gold HPR 100 mm	1252G1-MSP-GLHPR	1242G1-MSP-GLHPR	1232G1-MSP-GLHPR	1222G1-MSP-GLHPR	
MacroSep BIO-Gold HPR 150 mm	1352G1-MSP-GLHPR	1342G1-MSP-GLHPR	1332G1-MSP-GLHPR	1322G1-MSP-GLHPR	
MacroSep BIO-Gold HPR 250 mm	1552G1-MSP-GLHPR	1542G1-MSP-GLHPR	1532G1-MSP-GLHPR	1522G1-MSP-GLHPR	
MacroSep BIO-Gold HPR 300 mm	1652G1-MSP-GLHPR	1642G1-MSP-GLHPR	1632G1-MSP-GLHPR	1622G1-MSP-GLHPR	

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