

# HIS-Select™ Quick Reference Guide



COMING SOON!

Product	Nickel Affinity Gel	Nickel High Flow (HF) Affinity Gel	Cobalt Affinity Gel	EZview™ Red Nickel Affinity Gel	Nickel Affinity Gel Cartridges	Nickel High Flow (HF) Affinity Gel Cartridge, 1.25 ml	Nickel High Flow (HF) Affinity Gel Cartridge, 6.4 ml	Nickel Spin Columns	Nickel Magnetic Beads	High Sensitivity (HS) Nickel Coated Plates	High Capacity (HC) Nickel Coated Plates 96-well	Filter Plates 96-well	iLAP™ High Capacity (HC) Nickel Coated Plates 96-well	HIS-Select™ iLAP columns	HIS-Select Ni-ABC-HRP
<b>Product Number</b>	<b>P6611</b>	<b>H0537</b>	<b>H8162</b>	<b>E3528</b>	<b>H8286</b>	<b>H7788</b>	<b>H7163</b>	<b>H7787</b>	<b>H1786</b>	<b>S5688 &amp; S9191</b>	<b>S5563</b>	<b>H0413</b>	<b>H9412</b>	<b>H9913</b>	<b>N1412</b>
<b>Package Sizes</b>	5 ml, 25 ml, 100 ml, 500 ml	10 ml, 25 ml, 100 ml, 500 ml	5 ml, 25 ml, 100 ml	1 ml, 5 x 1 ml	5 ea	1 ea, 5 ea	1 ea, 5 ea	10 ea, 50 ea	2 x 1 ml, 5 x 1 ml	1 ea, 5 ea	1 ea, 5 x 1 ea	1 ea, 5 ea	1 ea, 5 x 1 ea	1 ea, 25 ea	250 µg protein (HRP)
<b>Application</b>	<ul style="list-style-type: none"> <li>Gravity Flow Column</li> <li>Small-Med. Scale</li> </ul>	<ul style="list-style-type: none"> <li>FPLC®</li> <li>Production Scale</li> </ul>	<ul style="list-style-type: none"> <li>Gravity Flow Column</li> <li>Small-Med. Scale</li> </ul>	<ul style="list-style-type: none"> <li>Mini Prep Pull-Downs</li> </ul>	<ul style="list-style-type: none"> <li>LPLC</li> <li>MPLC</li> <li>Syringe Purification</li> <li>Small Scale</li> </ul>	<ul style="list-style-type: none"> <li>LPLC</li> <li>MPLC</li> <li>FPLC</li> <li>Syringe purification</li> </ul>	<ul style="list-style-type: none"> <li>LPLC</li> <li>MPLC</li> <li>FPLC</li> <li>Syringe purification</li> </ul>	<ul style="list-style-type: none"> <li>Mini Prep</li> <li>Process by Centrifugation or Vacuum</li> </ul>	<ul style="list-style-type: none"> <li>Rapid Mini Prep Magnetic Pull-Downs</li> <li>High Throughput Screening</li> <li>Compatible with Robotics when Used in 96-Well Plates</li> </ul>	<ul style="list-style-type: none"> <li>High Throughput Screening (ELISA)</li> <li>Compatible with Robotics</li> </ul>	<ul style="list-style-type: none"> <li>High Throughput, High Capacity Screening</li> <li>Multi-Sample Mini Prep</li> <li>In-Well Protein Assays</li> <li>Compatible with Robotics</li> </ul>	<ul style="list-style-type: none"> <li>Small Scale</li> <li>High Throughput Screening</li> <li>Process by Centrifugation or Vacuum</li> <li>Compatible with Robotics</li> </ul>	<ul style="list-style-type: none"> <li>Direct Cell Lysis and Purification of Target Protein in Well</li> <li>High Throughput, High Capacity Screening</li> <li>Multi-Sample Mini Prep</li> <li>In-Well Protein Assays</li> <li>Compatible with Robotics</li> </ul>	<ul style="list-style-type: none"> <li>Direct Cell Lysis and Purification of Target Protein in Gravity Flow Column</li> </ul>	<ul style="list-style-type: none"> <li>Western Blot</li> <li>Dot Blot</li> <li>ELISA</li> </ul>
<b>Scale per Sample</b>	100 µg – 10 g	100 µg – 100 g	100 µg – 10 g	10 – 500 µg per pull-down	15 – 20 mg	Up to 18 mg per sample	Up to 96 mg per sample	• 150 µg • 600 µl/load	10 µg – 15 mg per pull-down	• 1 ng – 1 µg/well • 96-well: 200 µl/well	• 1 – 4 µg/well • 200 µl/well	• 1 mg/well • 1 ml/load	• 1 – 4 µg/well • 96-well: 200 µl/well	Up to 1 mg	Up to 100 blots or 10,000 wells
<b>Binding Capacity</b>	15 mg/ml	15 mg/ml	15 mg/ml	15 mg/ml	15 mg/cartridge	15 mg/ml	15 mg/ml	150 µg/column	15 mg/ml	Sensitivity: ≤1 ng/well	≥4 µg/well	1 mg/well	≥4 µg/well	1 mg per 5 ml culture	Detection limit of 5 ng by dot blot
<b>Matrix</b>	6% Beaded Agarose	6% Beaded Agarose, Highly Cross-linked	6% Beaded Agarose	6% Beaded Agarose	6% Beaded Agarose	6% Beaded Agarose, Highly cross-linked	6% Beaded Agarose, Highly cross-linked	Silica Particles (Porous, Spherical)	Paramagnetic Iron Impregnated 6% Beaded Agarose	Clear Polystyrene Plate; Proprietary Coating	Clear Polystyrene Plate; Proprietary Coating	Silica Particles (Porous, Spherical)	Clear Polystyrene Plate; Proprietary Coatings for lysis and purification	Proprietary resin and buffers for lysis and purification	Nickel Avidin-Biotin-Complex Peroxidase Congugate
<b>Bead Size</b>	45 – 165 µm	45 – 165 µm	45 – 165 µm	45 – 165 µm	45 – 165 µm	45-165 µm	45-165 µm	Approx. 20 µm	20 – 75 µm	N/A	N/A	Approx. 20 µm	N/A	45-165 µm	N/A
<b>Exclusion Limit (MW) or Pore Size</b>	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	4 x 10 <sup>6</sup> Da	0.1 µm (approx. 10 x 10 <sup>6</sup> Da)	4 x 10 <sup>6</sup> Da	N/A	At least 300 kDa	0.1 µm (approx. 10 x 10 <sup>6</sup> Da)	At least 300 kDa	4 x 10 <sup>6</sup> Da	N/A
<b>Max. Linear Flow Rate (Max. pressure)</b>	150 cm/hr (5 psi)	3,000 cm/hr (200 psi)	150 cm/hr (5 psi)	N/A	150 cm/hr (5 psi)	4 ml/min	20 ml/min	N/A	N/A	N/A	N/A	N/A	N/A	150 cm/hr (5 psi)	N/A
<b>Recommended Flow Rate for 1 x 2 cm Column</b>	1 ml/min	5 ml/min	1 ml/min	N/A	1 ml/min	1 ml/min	5 ml/min	N/A	N/A	N/A	N/A	N/A	N/A	1 ml/min	N/A
<b>Recommended Binding Time/Speed</b>	N/A	N/A	N/A	1 hr @ 4 °C	N/A	N/A	N/A	Equivalent to approx. 80 x g Centrifugation	0.5 hr @ 25 °C	1 hr @ 25 °C	4 hr @ 25 °C	Equivalent to approx. 270 x g Centrifugation	1-4 hr @ 25 °C	N/A	Blot: 1.75 hr, Plate: 1.5 hr
<b>Optimal pH Stability</b>	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	3-10	N/A
<b>Physical Form</b>	50% suspension in 30% ethanol	50% suspension in 30% ethanol	50% suspension in 30% ethanol	50% suspension in 30% ethanol	1.25 ml pre-packed cartridge in 30% ethanol	Pre-packed cartridge in 30% ethanol	Pre-packed cartridge in 30% ethanol	Pre-packed dry matrix in spin column	50% suspension in 30% ethanol	Clear 96-well-flat bottom, polystyrene strip plate (S 5688) or solid plate format (S 9191)	Clear 96-well polystyrene plates	Pre-packed dry matrix in 96-well filter plate	Clear 96-well flat bottom, polystyrene plates	Pre-packed cartridge containing lyophilized powder/dry resin	Lyophilized powder
<b>Antimicrobial Agent</b>	30% ethanol	30% ethanol	30% ethanol	30% ethanol	30% ethanol	30% ethanol	30% ethanol	N/A	30% ethanol	N/A	chlorhexidine	N/A	N/A	N/A	N/A
<b>Storage</b>	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C	-20 °C	-20 °C as supplied, 2-8 °C after reconstitution
<b>Recommended Imidazole Conc. for Load/Wash</b>	0-10 mM	0-10 mM	0-10 mM	0-10 mM	0-10 mM	0-10 mM	0-10 mM	0-5 mM	0-10 mM	0-5 mM	0-1 mM	0-5 mM	0-1 mM	5 mM	40 mM
<b>Recommended Imidazole Conc. for Elution</b>	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	250 mM (H 5413)	N/A	200 mM	250 mM (H 5413)	200 mM	250 mM (H 5413)	500 mM

For more information, please visit our web site at [sigma-aldrich.com/HISselect](http://sigma-aldrich.com/HISselect)

## HIS-Select™ Purification Kits

Product	HIS-Select™ M Affinity Capture Kit	HIS-Select M Purification Kit	HIS-Select Y Purification Kit
Product Number	<b>EHM1</b>	<b>HMP1</b>	<b>HPY1</b>
Package Sizes	1 Kit, sufficient for 50 samples	1 Kit, 5 individual columns	1 Kit, 5 individual columns
Application	Provides all the components needed for the extraction and rapid small-scale affinity capture of histidine-tagged proteins from mammalian cells	Complete kit for lysis, protein extraction, and affinity purification of histidine-tagged proteins from mammalian cells	Complete kit for lysis, extraction, and purification of histidine-tagged proteins from yeast
Scale per Sample	40 µl of gel suspension (20 µl of packed gel)	1 ml per column	1 ml per column
Binding Capacity	≥15 mg/ml	≥15 mg/ml	≥15 mg/ml
Affinity Gel Type *see respective resin product number for additional information	<b>E3528</b>	<b>P6611</b>	<b>P6611</b>
Components	<ul style="list-style-type: none"> <li>• Cellytic™ M Lysis Buffer (<b>C2978</b>)</li> <li>• 5X Phosphate Buffer: 250 mM Sodium Phosphate, pH 8, with 1.5.M NaCl</li> <li>• 2.5% CTAB</li> <li>• 2.5 M Imidazole, pH 8.0</li> <li>• 5% TWEEN® 20</li> <li>• EZview™ Red HIS-Select HC Nickel Affinity Gel (<b>E3528</b>)</li> <li>• Protease Inhibitor Cocktail (<b>P8340</b>)</li> </ul>	<ul style="list-style-type: none"> <li>• Cellytic M Lysis Buffer (<b>C2978</b>)</li> <li>• 5X Phosphate Buffer: 250 mM Sodium Phosphate, pH 8, with 1.5.M NaCl;</li> <li>• 2.5% CTAB</li> <li>• 2.5 M Imidazole, pH 8.0</li> <li>• 5% TWEEN 20</li> <li>• HIS-Select Nickel HC Affinity Gel (<b>P6611</b>)</li> <li>• 5 Polypropylene Chromatography Columns</li> </ul>	<ul style="list-style-type: none"> <li>• Cellytic Y Lysis Buffer (<b>C4482</b>)</li> <li>• 5X Phosphate Buffer: 250 mM Sodium Phosphate, pH 8, with 1.5.M NaCl</li> <li>• 2.5% CTAB</li> <li>• 2.5 M Imidazole, pH 8.0</li> <li>• 5% TWEEN 20</li> <li>• HIS-Select Nickel HC Affinity Gel (<b>P6611</b>)</li> <li>• 5 Polypropylene Chromatography Columns</li> </ul>

Description	HIS-Select M Affinity Capture Kit	HIS-Select M Purification Kit	HIS-Select Y Purification Kit
	This kit provides all the components needed for the extraction and rapid, small-scale affinity capture of histidine-tagged proteins from mammalian cells. The Cellytic M lysis buffer allows for quick and effective lysis of both adherent and suspension cells while the EZview Red HIS-Select Nickel Affinity Gel ( <b>E3528</b> ) provides rapid affinity purification of histidine-tagged proteins with high selectivity and very low non-specific binding of other proteins. Plus, the red color allows for less pellet loss during aspiration when performing immunoprecipitation or molecular pull-down experiments. The kit is sufficient for 50 affinity capture purifications.	This kit provides all the components needed for the extraction and rapid affinity purification of histidine-tagged proteins from mammalian cells. The Cellytic M lysis buffer allows for quick and effective lysis of both adherent and suspension cells while the HIS-Select Nickel Affinity Gel ( <b>P6611</b> ) provides rapid affinity purification of histidine-tagged proteins with high selectivity and very low non-specific binding of other proteins. This kit allows for one-step purification of ≥15 mg of histidine-tagged protein per ml of affinity gel. The kit is sufficient for 5 x 1 ml affinity purifications.	This kit provides all the components needed for the extraction and rapid affinity purification of histidine-tagged proteins from yeast cells. The Cellytic Y lysis buffer allows for quick and effective lysis of yeast cells while the HIS-Select Nickel Affinity Gel ( <b>P6611</b> ) provides rapid affinity purification of histidine-tagged proteins with high selectivity and very low non-specific binding of other proteins. This kit allows for one-step purification of ≥15 mg of histidine-tagged protein per ml of affinity gel. The kit is sufficient for 5 x 1 ml affinity purifications.

## HIS-Select™ Buffers

Product	HIS-Select Wash Buffer	HIS-Select Elution Buffer	HIS-Select Wash & Elution Buffer Kit
Product Number	<b>H5288</b>	<b>H5413</b>	<b>HS0100</b>
Package Sizes	500 ml, 1 L	250 ml, 500 ml	500 ml wash buffer, 250 ml elution buffer
Application	Optimized to reduce non-specific binding of proteins during wash steps when purifying histidine-containing proteins	Elute histidine-containing target proteins from HIS-Select purification products or other immobilized metal affinity chromatography (IMAC) products.	Optimized to reduce binding of non-specific proteins during purification and to allow the specific elution of histidine-containing target protein(s).
Components	<ul style="list-style-type: none"> <li>• 10 mM imidazole</li> <li>• 0.3 M sodium chloride</li> <li>• 50 mM sodium phosphate, pH 8.0</li> </ul>	<ul style="list-style-type: none"> <li>• 250 mM imidazole</li> <li>• 0.3 M sodium chloride</li> <li>• 50 mM sodium phosphate, pH 8.0</li> </ul>	<ul style="list-style-type: none"> <li>• Contains a 10 mM Imidazole Wash Buffer and 250 mM Imidazole Elution Buffer.</li> <li>• Both buffers also contain 0.3 M sodium chloride, 50 mM sodium phosphate, pH 8.0</li> </ul>
Description	HIS-Select Wash Buffer is a pre-made solution of 10 mM imidazole (in 0.3 M sodium chloride, and 50 mM sodium phosphate, pH 8.0) that is optimized to reduce non-specific binding of proteins during wash steps when purifying histidine-containing proteins using HIS-Select purification products or other immobilized metal affinity chromatography (IMAC) products.	HIS-Select Elution Buffer is a pre-made solution of 250 mM imidazole (in 0.3 M sodium chloride, and 50 mM sodium phosphate, pH 8.0) that is optimized to elute histidine-containing target proteins from HIS-Select purification products or other immobilized metal affinity chromatography (IMAC) products.	The HIS-Select Buffer Kit contains a 10 mM imidazole Wash Buffer ( <b>H5288</b> ) and a 250 mM imidazole Elution Buffer ( <b>H5413</b> ) for use in procedures for purification of recombinant proteins with histidine or other metal affinity tags. The buffers are designed for use with all HIS-Select Products and other immobilized metal affinity chromatography (IMAC) products. The wash buffer is optimized to reduce binding of non-specific proteins during purification. The elution buffer is optimized for elution of the bound histidine-tagged protein(s). The buffers are sold individually or in this kit. Both the Wash Buffer and Elution Buffer contain 0.3 M sodium chloride, 50 mM sodium phosphate, pH 8.0.

For more information, please visit  
our website at [sigma-aldrich.com/HISselect](http://sigma-aldrich.com/HISselect)

