

# *Integrated Solutions for Recombinant Protein Extraction and Stabilization*

*Reference and Selection Guide*

*BACTERIAL*

*MAMMALIAN*

*PLANT*

*YEAST*

*Efficiently Extract  
Protein*

*Preserve Protein  
Function*

*Prevent Protein  
Degradation*

[sigma-aldrich.com/lysis](http://sigma-aldrich.com/lysis)

 **SIGMA**<sup>®</sup>





Organism


**BACTERIA**

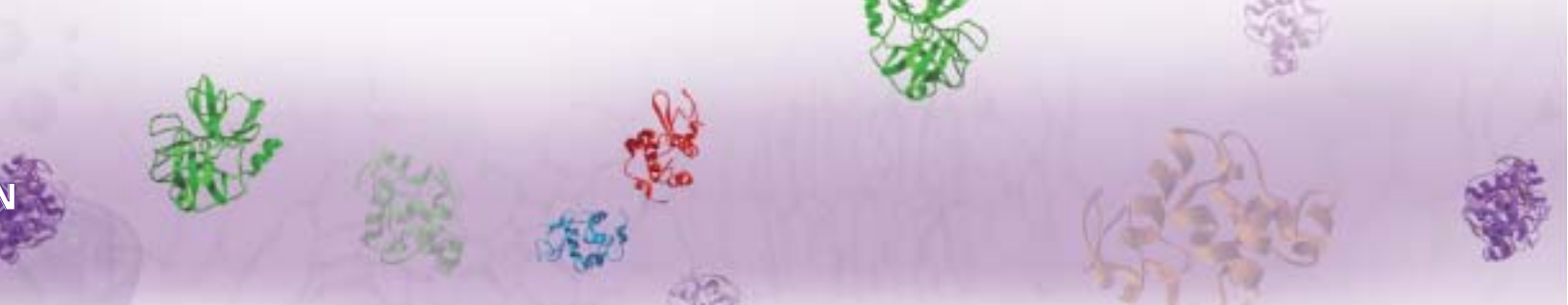
## WHOLE CELL DETERGENT LYSIS

## WHOLE

Product	CellLytic™ B	CellLytic B 2x	CellLytic B 10x	CellLytic Express
<b>Catalog number</b>	<b>B7435</b>	<b>B7310</b>	<b>C8740</b>	<b>C1990</b>
<b>Description</b>	A ready-to-use solution containing 40 mM Tris-HCl, pH 8, and a proprietary, non-denaturing detergent formulation of zwitterionic detergents	A more concentrated (2x), ready-to-use solution containing 40 mM Tris-HCl, pH 8, and a proprietary, non-denaturing formulation detergent	A highly concentrated (10x) solution containing a proprietary, non-denaturing detergent formulation and no buffering components	A ready-to-use, all-in-one, non-denaturing proprietary powder formulation of detergent and enzymes optimized for one-step extraction of proteins from bacterial cells (in-culture cell lysis)
<b>Package sizes</b>	50 ml, 500 ml (Sufficient for processing 5 g and 50 g of wet cell paste, respectively)	50 ml, 250 ml (Sufficient for processing up to 10 g and 50 g of wet cell paste, respectively)	10 ml, 50 ml, 100 ml (Sufficient for processing ~10 g, 50 g, and 100 g of wet cell paste, respectively)	25 ml (1.26 g) 10 x 25 ml 6 x 500 ml (25.2 g)
<b>Sample type</b>	<ul style="list-style-type: none"> <li>Bacterial cell pellets (lysis and protein extraction)</li> <li>Isolation of inclusion bodies</li> </ul>	<ul style="list-style-type: none"> <li>Bacterial cell pellets (concentrated at 2x for more difficult to lyse organisms)</li> <li>Isolation of inclusion bodies</li> </ul>	<ul style="list-style-type: none"> <li>Bacterial cell pellets (concentrated at 10x in water; dilute for use into buffer of choice)</li> <li>Isolation of inclusion bodies</li> </ul>	<ul style="list-style-type: none"> <li>Direct lysis of bacterial cell cultures (without centrifugation)</li> <li>Affinity purification of proteins without the need for special equipment</li> </ul>
<b>Strain/Cell line compatibility</b>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>DH5α</li> <li>JM109</li> <li>Other similar cells</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>DH5α</li> <li>JM109</li> <li>Other similar cells</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>DH5α</li> <li>JM109</li> <li>Other similar cells</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>DH5α</li> <li>JM109</li> <li>Other similar cells</li> </ul>
<b>Usage</b>	<u>Small scale:</u> 0.4 ml of CellLytic B per 1.5 ml culture pellet <u>Large scale:</u> 10-20 ml per g of wet cell paste	<u>Small scale:</u> 0.2 ml of CellLytic B 2x per 1.5 ml of culture pellet <u>Large scale:</u> 5 ml per g of wet cell paste	Test 5, 10, and 20-fold dilutions into the desired buffer; add diluted solution at 10-20 ml per g of wet cell paste	<u>Small scale:</u> one 25 ml bottle per 25 ml of culture <u>Large Scale:</u> one 500 ml bottle for 500 ml of culture *For cultures <25 ml, add 0.05 g of powder per ml of culture
<b>Type of detergent/ Dialyzable?</b>	Zwitterionic/Yes	Zwitterionic/Yes	Zwitterionic/Yes	Zwitterionic/Yes
<b>Protein active?</b>	Yes – Suitable for protein activity assays	Yes – Suitable for protein activity assays	Yes – Suitable for protein activity assays	N/A; typically resin-bound protein-activity dependent on isolation/elution methods
<b>Compatible purification and detection products</b>	<ul style="list-style-type: none"> <li>Antibody/EZview™ Affinity Gels</li> <li>FLAG®</li> <li>HIS-Select™/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/ EZview™ Affinity Gels</li> <li>FLAG®</li> <li>HIS-Select™/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>
<b>Quantitation and staining capabilities</b>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>
<b>Related products containing this reagent</b>	See CB0050 & CB0500 kits	See B7435 & CB0500 kits	See B7435 & CB0500 kits	CellLytic Express Tablets (C5491)
<b>Physical form</b>	Ready-to-use solution	Concentrated solution (2x)	Concentrated solution (10x)	Easy-to-dissolve powder
<b>Storage and stability</b>	Room temperature 2 years	Room temperature 2 years	Room temperature 2 years	–20 °C 2 years



CELL DETERGENT & ENZYMATIC LYSIS		INCLUSION BODY SOLUBILIZATION	INTEGRATED LYSIS & AFFINITY PURIFICATION – WHOLE CELLS		WHOLE CELLS
CellLytic™ Express Tablets	CellLytic B Plus Kit	CellLytic IB	HIS-Select iLAP HC Nickel Coated Plate	HIS-Select iLAP 5 ml Column	CellLytic™ M
C5491	CB0050 & CB0500	C5236	H9412	<b>NEW</b> H9913	C2978
A ready-to-use, all-in-one, non-denaturing proprietary tablet formulation of detergent and enzymes optimized for one-step extraction of proteins from bacterial cells (in-culture cell lysis)	Kits containing CellLytic B Cell Lysis Reagent (B7435), lysozyme, Benzonase®, and a Protease Inhibitor Cocktail to extract soluble proteins and remove cell debris from inclusion bodies	A ready-to-use solution designed to solubilize inclusion bodies formed in bacteria over-expressing recombinant proteins	A single-use integrated lysis and affinity purification plate that combines cell lysis and purification steps into one. Plate contains proprietary coatings for both lysis and affinity purification of histidine-tagged proteins.	A single-use integrated lysis and affinity purification column designed for one-step purification of histidine-tagged proteins directly from a 5 ml bacterial culture	A ready-to-use solution containing a mild detergent in a bicine buffer designed for efficient whole-cell protein extraction from cultured mammalian cells
25 ea 100 ea	1 kit: 50 ml (CB0050) or 500 ml (CB0500) CellLytic B for processing 5 g or 50 g of cell paste, respectively	25 ml 100 ml	1 each 5 x 1 each	1 each 25 each	50 ml 250 ml
<ul style="list-style-type: none"> <li>Direct lysis of bacterial cell cultures (without centrifugation)</li> <li>Affinity purification of proteins without the need for special equipment</li> </ul>	Both Gram-negative and difficult to lyse Gram-positive bacteria	Bacterial inclusion bodies	Bacterial culture (direct lysis, no centrifugation necessary)	Bacterial culture (direct lysis, no centrifugation necessary)	Both suspension and adherent cells (no cell scraping necessary; efficient and rapid cell lysis and protein solubilization)
<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>DH5α</li> <li>JM109</li> <li>Other similar cells</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL21</li> <li>Other similar bacteria</li> </ul>	<ul style="list-style-type: none"> <li>Various <i>E. coli</i> strains</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL 21</li> <li>Other similar bacteria</li> </ul>	<ul style="list-style-type: none"> <li>Optimized for <i>E. coli</i> strain BL 21</li> <li>Other similar bacteria grown in Terrific Broth</li> </ul>	<ul style="list-style-type: none"> <li>HeLa</li> <li>HL-60</li> <li>PC-12</li> <li>CHO</li> <li>Bovine Aorta Endothelial Cells (BAEC)</li> <li>Jurkat</li> <li>COS</li> <li>A431</li> </ul>
Use 1 tablet for 1 ml of culture; for high OD cultures, additional tablets can be used	10 ml per g of wet cell paste (~250 ml culture); dilute 1:10 for inclusion body isolation	8 ml per g of purified inclusion body pellet	200 µl of overnight bacterial culture per well	5 ml of an overnight bacterial culture per column	125 µl for 10 <sup>6</sup> -10 <sup>7</sup> cells; 500-1000 µl for a 100 mm plate; 200-400 µl for a 35 mm plate
Zwitterionic/Yes	Zwitterionic/Yes	N/A (strong denaturant in mild neutral buffer)	Zwitterionic/Yes	Zwitterionic/Yes	Zwitterionic/Yes
N/A; resin-bound protein – activity dependent on isolation/elution methods	Yes – Suitable for protein activity assays	N/A; need to renature, therefore, dependent on the nature of the specific protein	Activity dependent on method used for isolation and elution of plate-bound protein	Activity dependent on method used for isolation and elution of resin-bound protein	Yes – Suitable for protein activity assays
<ul style="list-style-type: none"> <li>Antibody/EZview™ Affinity Gels</li> <li>FLAG®</li> <li>HIS-Select™/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	Dependent on the nature of the recombinant protein after dialysis and refolding	<ul style="list-style-type: none"> <li>HIS-Select/IMAC</li> </ul>	<ul style="list-style-type: none"> <li>HIS-Select/IMAC</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease and Phosphatase Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>
<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay – only after renaturation/dialysis</li> <li>Protein staining – after dialysis</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay – depending on elution method</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay – depending on elution method</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>
<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>Affinity purification</li> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>SDS-PAGE (following dialysis of the denaturant)</li> <li>Protein refolding studies</li> </ul>	<ul style="list-style-type: none"> <li>Western blotting</li> <li>Dot blotting</li> </ul>	<ul style="list-style-type: none"> <li>Western blotting</li> <li>Dot blotting</li> </ul>	<ul style="list-style-type: none"> <li>Reporter gene assays</li> <li>Kinase assays</li> <li>Phosphatase assays</li> <li>Immunoassays</li> <li>DNA-protein interaction assays (gel-shift assays)</li> </ul>
CellLytic Express powder (C1990), Coming soon – HIS-Select iLAP™ 5 ml column (H9913)	N/A	N/A	N/A	N/A; see CellLytic Express Tablet, C5491	CELLMM2, IP0020, IP0010, EHM1, HMP1 (See catalog/web)
Easy-to-dissolve tablets	Solutions ready to mix	Ready-to-use solution	96-well plate coated with proprietary lysis and affinity capture reagents	5 ml chromatography column containing 5 CellLytic Express tablets and 1 HIS-Select resin pellet	Ready-to-use solution
-20 °C 2 years	CellLytic B at room temperature; the rest of the kit at -20 °C 1 year	Room temperature ≥1 year	2-8 °C 4 years	2-8 °C 2 years	Room temperature 2 years



TISSUES	MEMBRANE	NUCLEAR	WHOLE CELLS	
CellLytic™ MT	CellLytic MEM	CellLytic NUCLEAR™ Extraction Kit	RIPA buffer	Mammalian Cell Lysis Kit
C3228	CE0050	NXTRACT	R0278	MCL1
A ready-to-use solution consisting of a dialyzable mild detergent, bicine, and 150 mM NaCl for efficient extraction of tissue proteins for analysis	A kit containing Lysis and Separation Buffer, Wash Buffer, 4 M NaCl Solution, and Protease Inhibitor Cocktail for isolation of hydrophobic and raft-associated proteins	A complete system for preparing nuclear and cytoplasmic protein extracts from mammalian cultured cells or tissues, allowing extraction of functional nuclear proteins	A ready-to-use solution for general cell lysis, which contains 50 mM Tris-HCl, pH 8, 150 mM NaCl, 1% IGEPAL® CA-630, 0.5% sodium deoxycholate, and 0.1% SDS	A kit containing all reagents required for the solubilization of mammalian cells and tissue for subsequent protein analysis. Contains: 5x buffer (Tris-EDTA), 5x NaCl, 5x SDS, 5x deoxycholic acid, 5x IGEPAL® CA-630, and protease inhibitor cocktail
50 ml 500 ml	<u>1 kit:</u> 50 ml of lysis and separation buffer, sufficient for 80 samples	<u>1 kit:</u> 100 extractions of 100 µl of packed cells (~10 <sup>6</sup> -10 <sup>7</sup> cells), or 10 extractions of 1 ml of packed cells (~10 <sup>8</sup> -10 <sup>10</sup> cells)	50 ml 500 ml	<u>1 kit:</u> extraction of 250 ml of total cell suspension, or extraction of cells from 250 plates (100 mm diameter)
<ul style="list-style-type: none"> <li>Mammalian tissues</li> <li>Mammalian cell lines (for efficient extraction of proteins that require higher salt in the lysis buffer)</li> </ul>	Cultured mammalian cells (isolation based on phase separation, not high-speed centrifugation)	Mammalian cells and fresh or frozen tissues (Reagents allow for flexible, application-specific methods of extracting functional nuclear proteins)	Both adherent and suspension cultured mammalian cells (Rapid, efficient cell lysis and solubilization of proteins)	Mammalian cell lines (same application as RIPA buffer (R0278))
<ul style="list-style-type: none"> <li>Rat tissue (brain, liver, muscle, kidney, heart, and spleen)</li> <li>Mouse tissue (brain, kidney, and muscle)</li> </ul>	<ul style="list-style-type: none"> <li>HeLa</li> <li>HEK-293</li> <li>NIH3T3</li> <li>COS</li> <li>CHO</li> </ul>	<ul style="list-style-type: none"> <li>HeLa</li> <li>Jurkat</li> <li>Rat liver</li> <li>Bovine Aorta Endothelial Cells (BAEC)</li> <li>Mouse brain and lung</li> <li>Rabbit muscle</li> <li>CHO</li> <li>PC-12</li> <li>COS</li> </ul>	<ul style="list-style-type: none"> <li>Mammalian cell lines.</li> </ul>	<ul style="list-style-type: none"> <li>HeLa</li> <li>COS</li> <li>PC-12</li> <li>Bovine Aorta Endothelial Cells (BAEC)</li> <li>CHO</li> <li>Jurkat</li> </ul>
20 ml per g of tissue (1:20 ratio)	600 µl of lysis and separation buffer for every 10 <sup>6</sup> -10 <sup>7</sup> cells	500 µl of 1x lysis buffer for every 100 µl of packed cell volume (5x volume)	1 ml of RIPA Buffer is sufficient to lyse cells from one 100 mm culture dish (0.5 to 5 x 10 <sup>7</sup> cells)	1 ml per sample *For adherent or suspension cells, use 10 <sup>6</sup> -10 <sup>7</sup> cells/ml, for tissue, use 5-20 mg of tissue/ml
Zwitterionic/Yes	Non-ionic/No	Non-ionic/No – only partially	Non-ionic/No – only partially Anionic/Yes	Non-ionic/No – only partially Anionic/Yes
Yes – Suitable for protein activity assays	Yes – Suitable for protein activity assays	Yes – Suitable for protein activity assays	N/A	N/A
<ul style="list-style-type: none"> <li>Antibody/EZview™ Affinity Gels</li> <li>FLAG®</li> <li>HIS-Select™/IMAC</li> <li>GST</li> <li>Protease and Phosphatase Inhibitor Cocktails</li> <li>Lysozyme solution (L3790)</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease and Phosphatase Inhibitor Cocktails</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease and Phosphatase Inhibitor Cocktails</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease and Phosphatase Inhibitor Cocktails</li> </ul>	<ul style="list-style-type: none"> <li>Antibody/EZview Affinity Gels</li> <li>FLAG</li> <li>HIS-Select/IMAC</li> <li>GST</li> <li>Protease Inhibitor Cocktails</li> </ul>
<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay – after sample is diluted</li> <li>Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>Protein assay – if sample is diluted</li> <li>Protein staining</li> </ul>
<ul style="list-style-type: none"> <li>Reporter gene assays</li> <li>Kinase assays</li> <li>Phosphatase assays</li> <li>Immunoassays</li> <li>DNA-protein interaction assays (gel-shift assays)</li> </ul>	<ul style="list-style-type: none"> <li>SDS-PAGE</li> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> </ul>	<ul style="list-style-type: none"> <li>Electrophoresis Mobility Shift Assay (EMSA)</li> <li>DNase I footprinting analysis</li> <li>Transcription assays</li> <li>Further purification</li> </ul>	<ul style="list-style-type: none"> <li>Affinity purification</li> </ul>	<ul style="list-style-type: none"> <li>Western blotting</li> <li>Dot blotting</li> <li>Immunoprecipitation</li> <li>Affinity purification</li> </ul>
N/A	N/A	N/A	N/A	N/A
Ready-to-use solution	Solutions ready to mix	Solutions ready to mix	Ready-to-use solution	Concentrated solutions ready to mix
Room temperature 2 years	-20 °C; after opening the kit, store the Protease Inhibitor Cocktail at -20 °C and the rest at 2-8 °C 2 years	-20 °C; see bulletin for storage of individual components when opened 3 years	2-8 °C ≥ 2 years	-20 °C 2 years

PLANT		YEAST		
WHOLE CELLS/TISSUES	NUCLEAR	DETERGENT	DETERGENT & ENZYMATIC LYSIS	
Cellytic™ P	Cellytic PN Kit	Cellytic Y	Cellytic Y Plus Kit	Product
C2360	CELLYTPN1	C4482	CYP1	Catalog number
A ready-to-use non-ionic detergent formulation for convenient and efficient plant cell lysis and protein solubilization	A kit containing complete reagents for rapid isolation of nuclei and extraction of functional nuclear proteins from plant leaves	A phosphate-free and non-denaturing reagent for effective yeast cell lysis and protein solubilization	A kit for highly efficient protein extraction from yeast cells, which contains Reaction Buffer, DTT, Lyticase, Extraction Buffer, Triton X-100, and Protease Inhibitor cocktail	<b>Description</b>
50 ml 250 ml	<b>1 kit:</b> 30 extractions from 20 g of fresh or frozen plant leaves	50 ml 500 ml	<b>1 kit:</b> spheroplast formation and protein extraction from 10-40 g of yeast cell paste	<b>Package sizes</b>
Fresh or frozen plant leaves (Extraction and solubilization of protein from less than one gram to hundreds of grams)	Plant leaves (Isolation of nuclei and extraction of nuclear proteins from a few grams to hundreds of grams)	Fast and efficient lysis and solubilization of proteins from yeast cells	This kit provides a convenient and highly efficient method of spheroplast formation and protein extraction from yeast cells	<b>Sample type</b>
<ul style="list-style-type: none"> <li>• Tobacco</li> <li>• Tomato</li> <li>• Spinach</li> <li>• <i>Arabidopsis</i></li> </ul>	<ul style="list-style-type: none"> <li>• Tobacco</li> <li>• Tomato</li> <li>• Spinach</li> <li>• <i>Arabidopsis</i></li> </ul>	<ul style="list-style-type: none"> <li>• Various strains of <i>Saccharomyces cerevisia</i> [Y187, Y190, W303(a), S288C, SP1, Σ1278b, BJ2168, cdc25]</li> <li>• <i>Schizosaccharomyces pombe</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Saccharomyces cerevisiae</i></li> <li>• <i>Pichia pastoris</i></li> <li>• <i>Schizosaccharomyces pombe</i></li> </ul>	<b>Strain/Cell line compatibility</b>
1 ml of reagent is sufficient for extraction of 0.5-1 g of plant leaves	3 ml of 1x nuclei isolation buffer per gram of leaf tissue (typically use 60 ml per isolation for 20 g leaf tissue)	2.5-5 ml per g of yeast cells	300 µl of reaction buffer and 500 µl of extraction buffer per 2 x 10 <sup>9</sup> cells	<b>Usage</b>
Non-ionic/No – only partially	Non-ionic/No – only partially	Non-ionic/No – only partially	Non-ionic/No – only partially	<b>Type of detergent/ Dialyzable?</b>
Yes – Suitable for protein activity assays	N/A; presence of DTT in protein extraction buffer may interfere with protein activity	Yes – Suitable for protein activity assays	Yes – Suitable for protein activity assays	<b>Protein active?</b>
<ul style="list-style-type: none"> <li>• Antibody/EZview™ Affinity Gels</li> <li>• FLAG®</li> <li>• HIS-Select™/IMAC</li> <li>• GST</li> <li>• Protease and Phosphatase Inhibitor Cocktails for plant tissue</li> </ul>	<ul style="list-style-type: none"> <li>• Antibody/EZview Affinity Gels – must be done in absence of DTT</li> <li>• FLAG (no DTT)</li> <li>• HIS-Select/IMAC</li> <li>• GST</li> <li>• Protease and Phosphatase Inhibitor Cocktails for plant tissue</li> </ul>	<ul style="list-style-type: none"> <li>• Antibody/EZview Affinity Gels (no DTT)</li> <li>• FLAG (no DTT)</li> <li>• HIS-Select/IMAC</li> <li>• GST</li> <li>• Protease Inhibitor Cocktails</li> </ul>	<ul style="list-style-type: none"> <li>• Antibody/EZview Affinity Gels</li> <li>• FLAG</li> <li>• HIS-Select/IMAC</li> <li>• GST</li> <li>• Protease Inhibitor Cocktails</li> </ul>	<b>Compatible purification and detection products</b>
<ul style="list-style-type: none"> <li>• Protein assay</li> <li>• Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>• Protein assay</li> <li>• Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>• Protein assay</li> <li>• Protein staining</li> </ul>	<ul style="list-style-type: none"> <li>• Protein assay</li> <li>• Protein staining</li> </ul>	<b>Quantitation and staining capabilities</b>
<ul style="list-style-type: none"> <li>• Western blotting</li> <li>• DNA-protein interaction assays (Gel-shift)</li> <li>• Enzymatic assays (e.g., kinase assays and phosphatase assays)</li> </ul>	<ul style="list-style-type: none"> <li>• Western blotting</li> <li>• DNase I footprinting</li> <li>• Gel-shift assays</li> <li>• Source of chromatin, genomic DNA and RNA</li> </ul>	<ul style="list-style-type: none"> <li>• Reporter gene assays</li> <li>• Western blotting</li> <li>• Immunoprecipitation</li> <li>• Affinity purification</li> <li>• Gel-shift assays</li> </ul>	<ul style="list-style-type: none"> <li>• Reporter gene assays</li> <li>• Western blotting</li> <li>• Immunoprecipitation</li> <li>• Affinity purification</li> <li>• Gel-shift assays</li> </ul>	<b>Applications</b>
N/A	N/A	FLAG Y purification kit (CELLYM2), HIS-Select Y Purification Kit (HYP1)	N/A	<b>Related products containing this reagent</b>
Ready-to-use solution	Solutions ready to mix	Ready-to-use solution	Solutions ready to mix	<b>Physical form</b>
Room temperature 2 years	2-8 °C; Filter Mesh 100 is stored at room temperature 2 years	Room temperature 2 years	-20 °C; see bulletin for storage of individual components once opened 2 years	<b>Storage and stability</b>

**Argentina**

SIGMA-ALDRICH DE ARGENTINA, S.A.  
Tel: 54 11 4556 1472  
Fax: 54 11 4552 1698

**Australia**

Sigma-Aldrich Pty., limited  
Free Tel: 1800 800 097  
Free Fax: 1800 800 096  
Tel: 612 9841 0555  
Fax: 612 9841 0500

**Austria**

SIGMA-ALDRICH Handels GmbH  
Tel: 43 1 605 81 10  
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Sigma-Aldrich NV/SA.  
Free Tel: 0800-14747  
Free Fax: 0800-14745  
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Fax: 03 899 13 11

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Tel: 55 11 3732-3100  
Fax: 55 11 3733-5151

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Free Tel: 800-565-1400  
Free Fax: 800-265-3858  
Tel: 905-829-9500  
Fax: 905-829-9292

**China**

SIGMA-ALDRICH CHINA INC.  
Tel: 86-21-6386 2766  
Fax: 86-21-6386 3966

**Czech Republic**

SIGMA-ALDRICH s.r.o.  
Tel: +420 246 003 200  
Fax: +420 246 003 291

**Denmark**

Sigma-Aldrich Denmark A/S  
Tel: 43 56 59 10  
Fax: 43 56 59 05

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Sigma-Aldrich Finland  
Tel: (09) 350 9250  
Fax: (09) 350 92555

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Sigma-Aldrich Chimie S.à.r.l.  
Tel appel gratuit: 0800 211 408  
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**Germany**

Sigma-Aldrich Chemie GmbH  
Free Tel: 0800-51 55 000  
Free Fax: 0800-649 00 00

**Greece**

SIGMA-ALDRICH (o.m.) Ltd  
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Fax: 30 210 9943831

**Hungary**

SIGMA-ALDRICH Kft  
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Fax: 06-1-269-6470  
Ingyenes zöld telefon: 06-80-355-355  
Ingyenes zöld fax: 06-80-344-344

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SIGMA-ALDRICH CHEMICALS  
PRIVATE LIMITED  
Telephone  
Bangalore: 91-80-5112-7272  
New Delhi: 91-11-5165 4255  
Mumbai: 91-22-2570 2364  
Hyderabad: 91-40-5584 5488  
Fax  
Bangalore: 91-80-5112-7473  
New Delhi: 91-11-5165 4266  
Mumbai: 91-22-2579 7589  
Hyderabad: 91-40-5584 5466

**Ireland**

Sigma-Aldrich Ireland Ltd.  
Free Tel: 1800 200 888  
Free Fax: 1800 600 222  
Tel: 353 1 4041900  
Fax: 353 1 4041910

**Israel**

Sigma-Aldrich Israel Ltd.  
Free Tel: 1-800-70-2222  
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Fax: 08-948-4200

**Italy**

SIGMA-ALDRICH S.r.l.  
Telefono: 02 33417310  
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Numero Verde: 800-827018

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SIGMA-ALDRICH JAPAN K.K.  
Tokyo Tel: 03 5796 7300  
Tokyo Fax: 03 5796 7315

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SIGMA-ALDRICH KOREA  
Tel: 031-329-9000  
Fax: 031-329-9090

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SIGMA-ALDRICH (M) Sdn. Bhd  
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Free Fax: 01-800-712-9920

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Tel: 078-6205411  
Fax: 078-6205421

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Fax: 61 2 9841 0500

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SIGMA-ALDRICH NORWAY AS  
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Fax: 23 17 60 50

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SIGMA-ALDRICH Sp. z o.o.  
Tel: 061 829 01 00  
Fax: 061 829 01 20

**Portugal**

Sigma-Aldrich Química, S.A.  
Free Tel: 800 202180  
Free Fax: 800 202178  
Tel: 21 9242555  
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**Russia**

SIGMA-ALDRICH RUS, LLC  
Tel: +7 (095) 975-1917/3321  
Fax: +7 (095) 975-4792

**Singapore**

Sigma-ALDRICH PTE. LTD.  
Tel: 65-67791200  
Fax: 65-67791822

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South Africa (Pty) Ltd.  
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Free Fax: 0800 1100 79  
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Fax: 27 11 979 1119

**Spain**

SIGMA-ALDRICH QUÍMICA S.A.  
Free Tel: 900 101376  
Free Fax: 900 102028  
Tel: 91 661 99 77  
Fax: 91 661 96 42

**Sweden**

SIGMA-ALDRICH SWEDEN AB  
Tel: 020-350510  
Fax: 020-352522  
Outside Sweden Tel: +46 8 7424200  
Outside Sweden Fax: +46 8 7424243

**Switzerland**

SIGMA-ALDRICH CHEMIE LLC  
Swiss Free Call: 0800 80 00 80  
Tel: +41 81 755 2828  
Fax: +41 81 755 2815

**United Kingdom**

Sigma-Aldrich Company Ltd.  
Free Tel: 0800 717181  
Free Fax: 0800 378785  
Tel: 01747 833000  
Fax: 01747 833313  
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SIGMA-ALDRICH  
P.O. Box 14508  
St. Louis, Missouri 63178  
Toll-free: 800-325-3010  
Call Collect: 314-771-5750  
Toll-Free Fax: 800-325-5052  
Tel: 314-771-5765  
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**Internet:**

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