

#12718 Store at -20°C

ER and Golgi-Associated Marker Proteins Antibody Sampler Kit

1 Kit (5 x 20 microliters)



Cell Signaling
TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Calnexin (C5C9) Rabbit mAb	2679	20 µl	90 kDa	Rabbit IgG
ERp72 (D70D12) XP® Rabbit mAb	5033	20 µl	72 kDa	Rabbit IgG
PDI (C81H6) Rabbit mAb	3501	20 µl	57 kDa	Rabbit
RCAS1 (D2B6N) XP® Rabbit mAb	12290	20 µl	32 kDa	Rabbit IgG
Syntaxin 6 (C34B2) Rabbit mAb	2869	20 µl	32 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The ER and Golgi-Associated Marker Proteins Antibody Sampler Kit contains reagents to examine proteins that help regulate protein folding and vesicle trafficking. This kit includes enough antibody to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Background

Secretory and transmembrane proteins are synthesized on polysomes and translocate into the endoplasmic reticulum (ER) where they are often modified by the formation of disulfide bonds, amino-linked glycosylation, and folding. The ER contains a pool of molecular chaperones to help proteins fold properly. Calnexin is a calcium-binding, ER membrane protein that ensures proper protein folding by retaining newly synthesized glycoproteins within the ER lumen (1-3). The specificity of calnexin for a subset of glycoproteins is defined by a lectin site, which binds an early oligosaccharide intermediate on the folding glycoprotein (3). Many secretory proteins require the formation of intra- or inter-molecular disulfide bonds to reach their native conformation (4). Protein disulfide isomerase (PDI) catalyzes the formation and isomerization of disulfide bonds during oxidative protein folding (5). The ER-protein Ero1 oxidizes PDI through disulfide exchange, which is followed by PDI-catalyzed disulfide bond formation in folding proteins (6). The ER stress protein 72 (ERp72) contains three thioredoxin homology domains and plays a role in the formation and isomerization of disulfide bonds (7,8).

The tumor-associated antigen RCAS1 negatively regulates cytotoxic T lymphocyte (CTL) cytolytic activity, which impacts vesicle formation, secretion, and protein glycosylation (9-12). Overexpression of RCAS1 impairs CTL cytolytic function by negatively regulating trans-Golgi to secretory lysosome protein trafficking, leading to a delay in ER to Golgi vesicle transport and mislocalization of ER quality control and glycosylation proteins. As a result, RCAS1 induces deposition of tumor-associated glycan antigens on the cell surface, which may contribute to tumor pathogenesis through the mediation of adhesion, invasion, and metastasis (13,14). Syntaxin 6 is a ubiquitously expressed S25C family member of the SNARE proteins (15,16) that is localized to the trans-Golgi and within endosomes. It regulates membrane trafficking by partnering with a variety of other SNARE proteins (17-19) and is involved in the regulation of GLUT4 trafficking, neutrophil exocytosis, and granule secretion (20-22).

Background References

1. Rajagopalan, S. et al. (1994) *Science* 263, 387-90.
2. Bergeron, J.J. et al. (1994) *Trends Biochem Sci* 19, 124-8.
3. Williams, D.B. (2006) *J Cell Sci* 119, 615-23.
4. Huppa, J.B. and Ploegh, H.L. (1998) *Cell* 92, 145-8.
5. Ellgaard, L. and Ruddock, L.W. (2005) *EMBO Rep* 6, 28-32.
6. Tu, B.P. and Weissman, J.S. (2004) *J Cell Biol* 164, 341-6.
7. Mazzarella, RA et al. (1990) *J Biol Chem* 265(2), 1094-101.
8. Satoh, M et al. (2005) *Cell Stress Chaperones* 10(4), 278-84.
9. Rüder, C. et al. (2009) *J Clin Invest* 119, 2184-203.
10. Reimer, T.A. et al. (2005) *BMC Cancer* 5, 47.
11. Wolf, J. et al. (2010) *FASEB J* 24, 4000-19.
12. Engelsberg, A. et al. (2003) *J Biol Chem* 278, 22998-3007.

13. Bock, J.B. et al. (2001) *Nature* 409, 839-41.
14. Bock, J.B. et al. (1996) *J Biol Chem* 271, 17961-5.
15. Wendler, F. and Tooze, S. (2001) *Traffic* 2, 606-11.
16. Bock, J.B. et al. (1997) *Mol Biol Cell* 8, 1261-71.
17. Mallard, F. et al. (2002) *J Cell Biol* 156, 653-64.
18. Perera, H.K. et al. (2003) *Mol Biol Cell* 14, 2946-58.
19. Shewan, A.M. et al. (2003) *Mol Biol Cell* 14, 973-86.
20. Martín-Martín, B. et al. (2000) *Blood* 96, 2574-83.
21. Wendler, F. et al. (2001) *Mol Biol Cell* 12, 1699-709.
22. Kuliawat, R. et al. (2004) *Mol Biol Cell* 15, 1690-701.

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

U.S. Patent No. 7,429,487, foreign equivalents, and child patents deriving therefrom.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.