

## ER Stress Antibody Sampler Kit

<b>Catalog No.</b>	E-AB-K1802	<b>Reactivity</b>	Human
<b>Storage</b>	Store at -20°C, Avoid freeze / thaw cycles	<b>Applications</b>	WB
<b>Buffer</b>	PBS with sodium azide and glycerol.	<b>Dilution</b>	1:500-1:2000

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

Included	Product	Isotype	Mol. Wt.	Size
E-AB-31742		IgG	75kDa	20µL
E-AB-30723	CANX Polyclonal Antibody	Rabbit IgG	90kDa	20µL
E-AB-30923		IgG	19kDa	20µL
E-AB-34095		IgG	125kDa	20µL
E-AB-1003	Goat Anti-Rabbit IgG(H+L)(peroxidase/HRP conjugated)	Goat		120µL

### Product Description

The ER Stress Sampler Kit contains reagents to investigate ER stress within the cell. The kit contains enough primary and secondary antibodies to perform two Western blot experiments per primary antibody.

Please visit [www.elabscience.com](http://www.elabscience.com) for validation data and a complete listing of recommended companion products.

### 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 chaperone proteins including calnexin, BiP and protein disulfide isomerase (PDI). Calnexin is an ER membrane, calcium-binding protein that retains newly synthesized glycoproteins inside the ER to ensure proper folding and quality control. Irregular protein folding within the ER increases BiP synthesis, which binds misfolded proteins to prevent them from forming aggregates and to assist them to refold properly. PDI catalyzes the formation and isomerization of disulfide bonds required for a protein to reach its native state. Studies have found that the resident ER protein endoplasmic oxidoreductin-1 (Ero1) provides oxidizing potential to the ER in *Saccharomyces cerevisiae*. Ero1-L $\alpha$  is an ER membrane-associated N-glycoprotein that promotes oxidative protein folding. Disruptions of ER homeostasis leads to the accumulation of unfolded proteins. The ER has developed an adaptive mechanism called the unfolded protein response (UPR) to counteract compromised protein folding. This is regulated by proteins such as the membrane-bound transcription factor protease site 2 (MBTPS2) and the serine/threonine kinase IRE1. The PERK eIF2 $\alpha$  kinase is an ER resident transmembrane protein that couples ER stress signals to translation inhibition. ER stress increases PERK activity, which phosphorylates eIF2 $\alpha$  to reduce protein translation. PERK activation during ER stress correlates with autophosphorylation of its cytoplasmic kinase domain. Phosphorylation of PERK at Thr980 can serve as a marker for its activation status. During ER stress, the level of CHOP expression is elevated and CHOP functions to mediate programmed cell death.