# PRODUCT INFORMATION

## GRP78 Polyclonal Antibody

*Item No. 24533*

### Overview and Properties

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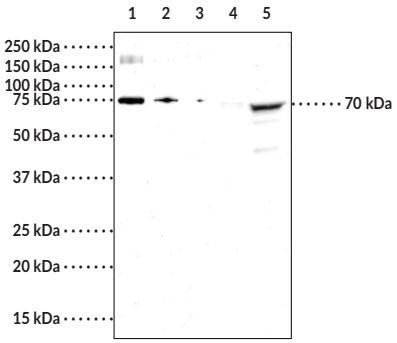
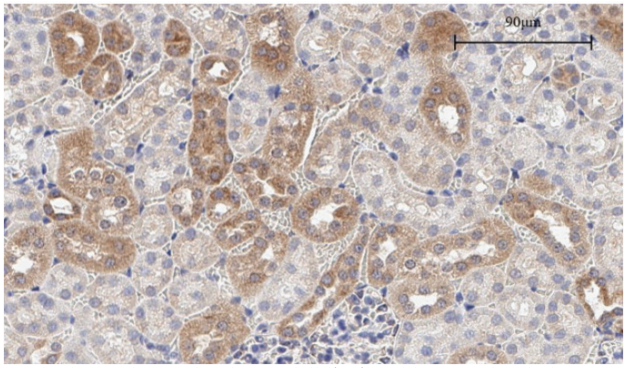
|---|---|
| **Contents:** | This vial contains 500 µg of protein A-purified GRP78 polyclonal antibody |
| **Synonyms:** | BiP, Endoplasmic Reticulum Lumenal $Ca^{2+}$-Binding Protein GRP78, 78 kDa Glucose-Regulated Protein, Glucose-Regulated Protein 78, Heat Shock 70 kDa Protein 5, HspA5, Immunoglobulin Heavy Chain-Binding Protein |
| **Immunogen:** | Human recombinant GRP78 protein (full length) |
| **Species Reactivity:** | (+) Human |
| **Uniprot No.:** | P11021 |
| **Form:** | Liquid |
| **Storage:** | -20°C (as supplied) |
| **Stability:** | ≥3 years |
| **Storage Buffer:** | PBS, pH 7.2 with 50% glycerol and 0.02% sodium azide |
| **Host:** | Rabbit |
| **Applications:** | ELISA, Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution is 1 µg/ml for ELISA and 5 µg/ml for IHC and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

### Images




**Lane 1:** GRP78 Recombinant Protein (0.02 µg)
**Lane 2:** GRP78 Recombinant Protein (0.005 µg)
**Lane 3:** GRP78 Recombinant Protein (0.001 µg)
**Lane 4:** Hsp70 (HspA1A) Recombinant Protein (0.1 µg) [negative control]
**Lane 5:** HeLa Heat Shock Cell Lysate (50 µg)




Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human kidney tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with GRP78 Polyclonal Antibody (Item No. 24533) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).



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## Description

Glucose-regulated protein 78 kDa (GRP78), also known as heat shock 70 kDa protein 5 (HspA5) and immunoglobulin heavy chain-binding protein (BiP), is a glucose-regulated protein that is constitutively expressed in the lumen of the endoplasmic reticulum (ER).[1-3] It is composed of two functional domains, an N-terminal nucleotide-binding domain that contains an ATP catalytic site and a C-terminal substrate binding domain that binds hydrophobic polypeptides.[4] GRP78 functions as a molecular chaperone, assisting in the translocation of polypeptides from the cytosol into the ER, folding of nascent polypeptides, as well as refolding and preventing aggregation of misfolded proteins. It also plays a role in the ER-assisted degradation (ERAD) and unfolded protein response (UPR) pathways.[5,6] GRP78 chaperone activity is driven by an ATPase cycle that is regulated by ER-localized DnaJ-like protein co-factors and nuclear exchange factors.[7,8] Expression of GRP78 is upregulated in response to ER stress caused by viral and bacterial infections as well as various cancers.[9] ER stress can also promote extracellular secretion of GRP78 leading to its anti-inflammatory functions in immunity.[10] Cayman's GRP78 Polyclonal Antibody can be used for Western blot and ELISA applications. The antibody recognizes GRP78 at ~72 kDa from human samples.

## References


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