

Product Information

Anti-Calnexin antibody, Mouse monoclonal
clone TO-5, purified from hybridoma cell culture

Product Number **C7617**

Product Description

Anti-Calnexin antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the hybridoma TO-5 produced by the fusion of mouse myeloma cells (P3-X63-AG8.653) cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human Calnexin, conjugated to KLH through an N-terminal added cysteine.¹ The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-Calnexin recognizes human Calnexin, ~90 kDa.^{1,3} The product is useful in ELISA,¹ immunoblotting,¹ flow cytometry,¹ immunocytochemistry,¹ and immunohistochemistry.¹

Calnexin (p88, IP90), is a calcium-binding, type I integral membrane protein, localized primarily in the endoplasmic reticulum (ER).⁴⁻⁸ Newly synthesized cellular and extracellular proteins must be correctly folded and assembled in the ER before they progress to the cytosol or the cell surface. This process is facilitated by transient interaction with a specific set of chaperones that reside in the ER lumen including calnexin, calreticulin, protein disulfide isomerase (PDI), and molecular chaperones of the Hsp60, Hsp70, and Hsp90 families. Calnexin binds newly synthesized glycoproteins and misfolded proteins and is believed to play a critical role in quality control processes during protein synthesis and folding. Calnexin acts as a lectin-like chaperone that binds oligosaccharide residues of newly synthesized N-linked glycoproteins. The lectin specificity of calnexin, and its soluble homologue calreticulin, has been identified as high mannose oligosaccharides terminating in monoglucosyl residues linked through $\alpha 1 \rightarrow 3$.^{4,8-11} Calnexin has been shown to be associated with several cell surface proteins, including MHC class I heavy chain, T-cell receptor (TCR), and B cell membrane immunoglobulin during translocation through the ER. It also forms complexes with other resident ER proteins involved in Ca^{2+} dependent retention of proteins.¹²

Calnexin contains a long (461 amino acids) N-terminal Ca^{2+} -binding domain extending into the lumen of the ER, a short (22 amino acids) transmembrane segment, and an acidic cytosolic domain (96 amino acids). These features distinguish calnexin from soluble ER chaperones that cannot interact with the trans-membrane and cytosolic domains of integral membrane proteins. The amino acid sequence of calnexin is highly conserved among species, and shares regions of high sequence homology with calreticulin.¹³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2 mg/mL.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1.0 $\mu\text{g}/\text{mL}$ is determined using total cell extract of HeLa cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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