Data Sheet (Cat.No.TMPY-06327)

TargetMol

Calreticulin Protein, Human, Recombinant

General Information

Synonyms:	HEL-S-99n;calreticulin;cC1qR;CRT;RO;SSA
Protein Construction:	A DNA sequence encoding the Human CALR (P27797) (Met1-Ala413) was expressed. Predicted N terminal: Glu 18
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P27797
Molecular Weight:	45.99 kDa (predicted); 49.5 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	≥ 90 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Calreticulin is a multifunctional protein. It acts as a main Ca(2+)-binding (storage) protein in the lumen of the endoplasmic reticulum. Calreticulin binds Ca2+ ions (a second messenger in signal transduction), rendering it inactive. The Ca2+ is bound with low affinity, but high capacity, and can be released on a signal. Located in storage compartments associated with the endoplasmic reticulum, calreticulin also binds to misfolded proteins and prevents them from being exported from the endoplasmic reticulum to the golgi apparatus. The amino

terminus of calreticulin interacts with the DNA-binding domain of the glucocorticoid receptor and prevents the receptor from binding to its specific glucocorticoid response element. Calreticulin reduces the binding of androgen receptor to its hormone-responsive DNA element and inhibits androgen receptor and retinoic acid receptor transcriptional activities in vivo, as well as retinoic acid-induced neuronal differentiation. Therefore, calreticulin acts as a significant modulator of the regulation of gene transcription by nuclear hormone receptors.

Reference

Michalak M,et al. (2002) Calreticulin in cardiac development and pathology. Biochim Biophys Acta. 1600(1-2):32-7.
Chao MP,et al. (2010) Calreticulin is the dominant pro-phagocytic signal on multiple human cancers and is counterbalanced by CD47. Sci Transl Med. 2(63):63ra94.
Andrin, C,et al. (1998) Interaction between a Ca2+-binding protein calreticulin and perforin, a component of the cytotoxic T-cell granules. Biochemistry. 37(29):10386-94.