

B2M/beta 2-Microglobulin Protein, Rat, Recombinant (His)

General Information

Synonyms:	beta-2 microglobulin;β-2 microglobulin
Protein Construction:	A DNA sequence encoding the rat B2M (P07151) (Met 1-Met 119) was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ile 21
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	P07151
Molecular Weight:	13 kDa (predicted); 15 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:	> 97 % 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

B2M, also known as β2-Microglobulin or CDABP0092, is a component of MHC class I molecules found expression in all nucleated cells (excludes red blood cells). The major function of MHC class I molecules is to display fragments of proteins from within the cell to T-cells and cells containing foreign proteins will be attacked. B2M (β2-Microglobulin) is a low molecular weight protein. It was demonstrated that B2M (β2-Microglobulin) was localized in the membranes of nucleated cells and was found to be associated with HL-A antigens. B2M (β2-Microglobulin)

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is present in free form in various body fluids and as a subunit of histocompatibility antigens on cell surfaces lateral to the $\alpha 3$ chain. Unlike $\alpha 3$, $\beta 2$ has no transmembrane region. Directly above $\beta 2$ lies the $\alpha 1$ chain, which itself is lateral to the $\alpha 2$. In the absence of B2M ($\beta 2$ microglobulin), very limited amounts of MHC class I (classical and non-classical) molecules can be detected on the surface. In the absence of MHC class I, CD8 T cells, a subset of T cells involved in the development of acquired immunity cannot develop. Low levels of B2M ($\beta 2$ microglobulin) can indicate non-progression of HIV.

Reference

Poulik MD, et al. (1979) Beta 2-Microglobulin: methods and clinical applications. CRC Crit Rev Clin Lab Sci. 10(3): 225-45.

Poulik MD, et al. (1975) Beta2-Microglobulins. Contemp Top Mol Immunol. 4: 157-204.

Berggard I. (1976) Beta2-Microglobulins: isolation, properties, and distribution. Fed Proc. 35(5): 1167-70.

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