Monoclonal cGRP Antibody

Mouse monoclonal antibody against a γ-carboxylated GRP epitope

Product Snapshot

Catalog #	MA:C50
Target	Human γ-carboxylated Gla-rich protein (cGRP)
Specificity	Selectively recognizes a γ-carboxylated epitope of human GRP*
Host / Clonality	Mouse / Monoclonal
Reactivity	Human
Applications	Immunolocalization, immunofluorescence
Quantity	50 µg (lyophilized)
Storage	-20°C (short-term), -80°C (long-term)

Product Overview: Gla-rich protein (GRP) is an unusually Gla-rich vitamin K-dependent protein containing a high density of potential γ-carboxylation sites distributed throughout its sequence. The extent and distribution of γ-carboxylation in native GRP remain largely undefined and are likely influenced by vitamin K availability and other biological factors, giving rise to multiple molecular forms with potentially distinct functional properties. Consequently, the overall carboxylation status of full-length GRP cannot currently be resolved using a single antibody. Antibodies directed against individual carboxylation-sensitive epitopes therefore provide a valuable approach for investigating epitope-specific GRP carboxylation in biological samples.

***Carboxylation-state specific:** This monoclonal antibody was generated against the human γ-carboxylated peptide QRNEFENFVEEQND and selectively recognizes this γ-carboxylated epitope, with no cross-reactivity towards the corresponding non-carboxylated peptide. The antibody is suitable for detecting the corresponding epitope in tissue-based applications, including immunofluorescence and immunolocalization. Specificity has been demonstrated using the corresponding synthetic peptides and by distinct staining patterns obtained with the matched ucGRP monoclonal antibody (MA:UC50) in tissue-based applications.

Applications & Use Cases

This antibody has been validated for the detection of the targeted γ-carboxylated GRP epitope in human tissues and cells by immunofluorescence and immunolocalization.

- Comparative tissue localization studies using matched cGRP and ucGRP (MA:UC50) monoclonal antibodies
- Assessment of GRP epitope carboxylation patterns in human tissues

Not recommended for:

- *Detection of total GRP independent of carboxylation status (use C-Term polyclonal PA:T50)*
- *Assessment* of the overall carboxylation status of full-length GRP, as antibody specificity is restricted to the immunizing epitope
- *Non-human samples*

Specifications

Immunogen: Synthetic peptide corresponding to a γ-carboxylated region of the human GRP Gla-domain in exon 4 (QRNEFENFVEEQND).

Specificity: Recognizes the γ-carboxylated human GRP immunizing epitope and does not cross-react with the corresponding noncarboxylated peptide. Antibody reactivity is restricted to the targeted epitope and should not be interpreted as reflecting the overall carboxylation status of full-length GRP.

Validation: Validated in human tissues and cells by immunolocalization and immunofluorescence. Distinct staining patterns in human articular cells have been observed relative to the matched ucGRP monoclonal antibody (MA:UC50), consistent with differential recognition of the targeted epitope (see Selected References).

Purity: Affinity purified.

Usage

Reconstitution: Add 50 µL sterile protease-free water for a final concentration of 1 µg/µL. Reconstitute by gentle rotation at 4°C for at least 12 hours.

Recommended dilutions (optimize for your application):

Application	Dilution
Immunolocalization/Immunofluorescence	5 µg/ml

Storage & Handling

Shipment: Room temperature (lyophilized).

Storage: After reconstitution, store at -20°C for up to two months. For long-term storage, -80°C is recommended. Avoid repeated freeze-thaw cycles.

Validation Reference

1. Cavaco S, Viegas CSB, Rafael MS, Ramos A, Magalhães J, Blanco FJ, Vermeer C, Simes DC (2016). “Gla-rich protein is involved in the cross-talk between calcification and inflammation in osteoarthritis”. Cell Mol Life Sci. 73(5):1051-1065. doi:10.1007/s00018-015-2033-9.

Related Products

Catalog #	Product	Use Case
MA:UC50	Monoclonal ucGRP Antibody	Detect noncarboxylated GRP epitope
PA:T50	C-Term GRP Polyclonal Antibody	Total GRP (all forms)

Based on PCT/PT2009000046

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