

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived rat CD40/TNFRSF5 protein		
	Rat CD40 (Val24-Arg193) Accession # Q4QQW2	IEGRMDP	Mouse IgG _{2A} (Glu98-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Val24		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	46 kDa (monomer)		

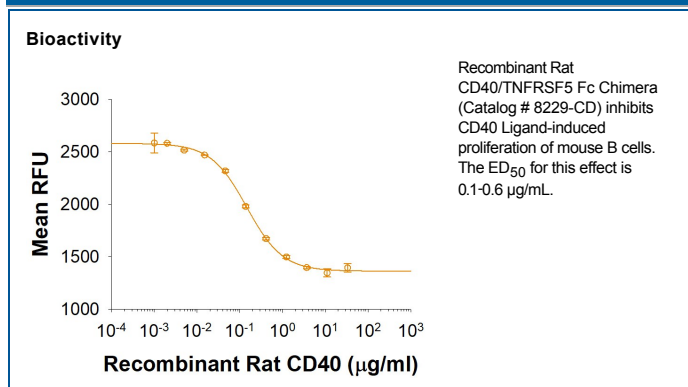
SPECIFICATIONS

SDS-PAGE	57-63 kDa, reducing conditions
Activity	Measured by its ability to inhibit CD40 Ligand-induced proliferation of mouse B cells. The ED ₅₀ for this effect is 0.1-0.6 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with silver staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

CD40, also known as TNFRSF5, is an approximately 32-35 kDa type I transmembrane glycoprotein member of the TNF receptor superfamily. The extracellular domain of rat CD40 shares 81% and 56% aa sequence identity with mouse and human CD40, respectively. Multiple rat CD40 splice variants have been reported including soluble isoforms. CD40 is expressed on the surface of B cells, dendritic cells, macrophages, monocytes and platelets, as well as endothelial and epithelial cells (1, 2). Interaction of CD40 with its ligand, CD40 Ligand, leads to the aggregation of CD40 molecules resulting in the initiation of intracellular signaling in both CD40 and CD40 Ligand expressing cells (3). CD40 ligation by CD40 Ligand promotes B cell activation and T cell-dependent humoral responses (4, 5). CD40 serves multiple functions in both hematopoietic and epithelial cancers and is a target for tumor immunotherapy (6, 7). Dysregulation of CD40/CD40 Ligand expression and interactions contributes to the immune deficiency associated with HIV infection and AIDS (8, 9). It is also implicated in the pathology of multiple cardiovascular diseases including atherosclerosis, atherothrombosis, and restenosis (10, 11).

References:

1. van Kooten, C. and J. Banchereau (1997) *Curr. Opin. Immunol.* **9**:330.
2. Schonbeck, U. *et al.* (1997) *J. Biol. Chem.* **272**:19569.
3. Eissner, G. *et al.* (2004) *Cytokine Growth Factor Rev.* **15**:353.
4. Rickert, R.C. *et al.* (2011) *Immunol. Rev.* **244**:115.
5. Elgueta, R. *et al.* (2009) *Immunol. Rev.* **229**:152.
6. Loskog, A.S. and A.G. Eliopoulos (2009) *Semin. Immunol.* **21**:301.
7. Hangalapura, B.N. *et al.* (2012) *J. Gene Med.* **14**:416.
8. Kornbluth, R.S. (2000) *J. Leukoc. Biol.* **68**:373.
9. Chougnet, C. (2003) *J. Leukoc. Biol.* **74**:702.
10. Pamukcu, B. *et al.* (2011) *Ann. Med.* **43**:331.
11. Hassan, G.S. *et al.* (2012) *Immunobiology* **217**:521.