

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived		
	Mouse Rae-1 $\epsilon$ (Leu29 - Ser229) Accession #Q9CZQ6	IEGRMD	Human IgG <sub>1</sub> (Pro100 - Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Leu29		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	49.3 kDa (monomer)		

**SPECIFICATIONS**

<b>SDS-PAGE</b>	65-75 kDa, reducing conditions
<b>Activity</b>	Measured by the ability of the protein to bind to immobilized rmNKG2D/Fc Chimera in a functional ELISA.
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 $\mu$ g/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Rae-1 $\epsilon$  is a member of a family of cell-surface proteins that function as ligands for mouse NKG2D. Other family members are designated Rae-1 $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$ . Amino acid sequence identity within this family ranges from 88 - 95%. The Rae-1 proteins are distantly related to MHC class I proteins, but they possess only the  $\alpha$ 1 and  $\alpha$ 2 Ig-like domains, and they have no capacity to bind peptide or interact with  $\beta$ 2-microglobulin. The genes encoding these proteins are not found within the Major Histocompatibility Complex on mouse chromosome 17, but rather map to mouse chromosome 10. The Rae-1 proteins are anchored to the membrane via a GPI-linkage. The name of this family derives from the original identification of these proteins as the product of retinoic acid early inducible transcripts. Rae-1 expression is developmentally controlled. Transcripts were observed in the brain/head region of day 10 - 14 embryos but disappeared by day 18. Rae-1 transcripts were detected in several transformed cell lines but are absent from most normal adult tissues. All Rae-1 family members bind to mouse NKG2D, an activating receptor expressed on NK cells and some T cell subsets, resulting in the activation of cytolytic activity and/or cytokine production by these effector cells. Ectopic expression of Rae-1 on mouse tumor cell lines resulted in the *in vivo* rejection of the tumors (1 - 6).

**References:**

1. Zou, Z. *et al.* (1996) J. Biochem (Tokyo) **119**:319.
2. Diefenbach, A. *et al.* (2000) Nature Immunol. **1**:119.
3. Cerwenka, A. *et al.* (2000) Immunity **12**:721.
4. Cerwenka, A. *et al.* (2001) Proc. Natl. Acad. Sci. USA **98**:11521.
5. Diefenbach, A. *et al.* (2001) Nature **413**:165.
6. NKG2D and its Ligands, [www.RnDSystems.com](http://www.RnDSystems.com).