

**Human His641BB Ligand/TNFSF9 (hHis64-1BBL)**

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MW (kDa):	UniProt ID:	Entrez-Gene Id:
22	#P41273	8744
<b>Background</b>	4-1BBL (also known as TNFSF9) is a member of the TNF-R superfamily, which includes OX40L, CD27L, CD40L, and GITRL (1). 4-1BBL is expressed primarily on antigen presenting cells, such as macrophages, dendritic cells, and B cells (2). 4-1BBL binds to 4-1BB on the surface of activated T cells (1). 4-1BBL/4-1BB binding activates the NF- $\kappa$ B pathway via TRAF1, 2, and 3 (1). 4-1BBL functions as a co-stimulatory molecule, inducing T cell proliferation, cytolytic activity, and cytokine production (2). Matrix metalloproteases can generate soluble 4-1BBL by cleaving it from the cell surface (3). The <i>in vitro</i> activity of soluble 4-1BBL is enhanced by cross-linking (4,5).	
<b>Endotoxin</b>	Less than 0.01 ng endotoxin/1 $\mu$ g hHis64-1BBL.	
<b>Purity</b>	>98% as determined by SDS-PAGE of 6 $\mu$ g reduced (+) and non-reduced (-) recombinant hHis64-1BBL. All lots are greater than 98% pure.	
<b>Source / Purification</b>	Recombinant human His64-1BBL (hHis64-1BBL) Arg71-Glu254 (Accession #NP_003802) was expressed in human 293 cells at Cell Signaling Technology.	
<b>Bioactivity</b>	The activity of hHis64-1BBL was assessed by its ability to bind to 4-1BB in a functional ELISA. The concentration at which half-maximal binding was observed for each lot was 6-18 ng/ml.	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Vinay, D.S. and Kwon, B.S. (2009) <i>Cell Biol Int</i> 33, 453-65.</li> <li>2. Wen, T. et al. (2002) <i>J Immunol</i> 168, 4897-906.</li> <li>3. Salih, H.R. et al. (2001) <i>J Immunol</i> 167, 4059-66.</li> <li>4. Rabu, C. et al. (2005) <i>J Biol Chem</i> 280, 41472-81.</li> <li>5. Wyzgol, A. et al. (2009) <i>J Immunol</i> 183, 1851-61.</li> </ol>	

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