

Class: TGF-beta 1	
Attributes:	
Molecule Type:	Protein
Primary Sequence:	
Source:	NCBI
Accession Number:	gi: 56605975
Synonyms:	
Molecular Weight (kDa):	44
Cellular location:	GO:0005615: extracellular space
Chromosome location:	19q13.1
Structure:	
Domain Information:	
Modifications:	GO:0042803: protein homodimerization activity (dimerize)
Functions:	GO:0005160: TGF-beta receptor binding
Processes involved in:	
	GO:0007179: TGF-beta receptor signaling pathway
	GO:0007181: TGF-beta receptor complex assembly
	GO:0007165: Signal transduction
Responsibilities:	Collaborators:
necessary for formation of signaling complex formation	TGF-beta RI (1)
necessary for formation of signaling complex formation	TGF-beta RII(1)
Dimerization possibly allows TGF-beta to bind one type I receptor and one type II receptor necessary for receptor complex assembly	TGF-beta (2)
clears growth factor from serum	alpha 2- macroglobulin receptor (3)
may change TGF-beta from latent to a bioactive conformation	Fibronectin (4)
may store bioactive TGF-beta in extracellular matrix	collagen IV (5)
interferes with binding of TGF-beta to receptors	60 kDa protein (6)

- 1) Massague, J., (1998) TGF-beta signal transduction, *Annu Rev Biochem*, **67**(753-91.
- 2) Sun, P.D. and Davies, D.R., (1995) The cystine-knot growth-factor superfamily, *Annu Rev Biophys Biomol Struct*, **24**(269-91.
- 3) LaMarre, J., et al., (1991) An alpha 2-macroglobulin receptor-dependent mechanism for the plasma clearance of transforming growth factor-beta 1 in mice, *J Clin Invest*, **87**(1), 39-44.
- 4) Fava, R.A. and McClure, D.B., (1987) Fibronectin-associated transforming growth factor, *J Cell Physiol*, **131**(2), 184-9.
- 5) Paralkar, V.M., Vukicevic, S., and Reddi, A.H., (1991) Transforming growth factor beta type 1 binds to collagen IV of basement membrane matrix: implications for development, *Dev Biol*, **143**(2), 303-8.
- 6) Piek, E., et al., (1997) Characterization of a 60-kDa cell surface-associated transforming growth factor-beta binding protein that can interfere with transforming growth factor-beta receptor binding, *J Cell Physiol*, **173**(3), 447-59.