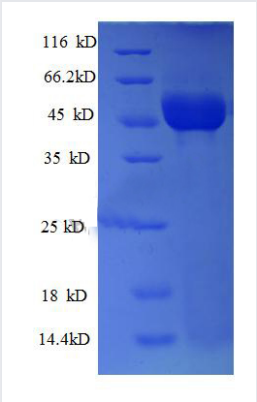
Thyroglobulin (TG) Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	Thyroglobulin (TG), Recombinant Protein
Full Product Name	Recombinant Human Thyroglobulin(TG)
Product Gene Name	TG recombinant protein
Sequence	IFEYQVDAQP LRPCELQRET AFLKQADYVP QCAEDGSFQT VQCQNDGRSC WCVGANGSEV LGSRQPGRPV ACLSFCQLQK QQILLSGYIN STDTSYLPQC QDSGDYAPVQ CDVQQVQCWC VDAEGMEVYG TRQLGRPKRC PRSCEIRNRR LLHGVGDKSP PQCSAEGEFM PVQCKFVNTT DMMIFDLVHS YNRFPDAFVT FSSFQRRFPE VSGYCHCADS QGRELAETGL ELLLDEIYDT IFAGLDLPST FTETT
Form/Format	Liquid containing glycerol
Purity/Purification	Greater than 90% as determined by SDS-PAGE.
Preparation and Storage	Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.
Molecular Weight	59kD
Sequence Positions	21-300
OMIM	188450
3D Structure	ModBase 3D Structure for P01266
Product Note	Applications are user defined. Product is developed and quality control tested in house, data or additional information may be provided upon request. The researcher needs to establish and confirm the suitability of the product for their application.
Product Categories/Family for TG recombinant protein	Metabolism; Raw Materials Assay Development
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for TG recombinant protein	Precursor of the iodinated thyroid hormones thyroxine (T4) and triiodothyronine (T3).

Product References and Citations for TG recombinant protein	Primary structure of human thyroglobulin deduced from the sequence of its 8448-base complementary DNA.Malthiery Y., Lissitzky S.Eur. J. Biochem. 165:491-498(1987) The revised 8307 base pair coding sequence of human thyroglobulin transiently expressed in eukaryotic cells.van de Graaf S.A.R., Pauws E., de Vijlder J.J.M., Ris-Stalpers C.Eur. J. Endocrinol. 136:508-515(1997) DNA sequence and analysis of human chromosome 8.Nusbaum C., Mikkelsen T.S., Zody M.C., Asakawa S., Taudien S., Garber M., Kodira C.D., Schueler M.G., Shimizu A., Whittaker C.A., Chang J.L., Cuomo C.A., Dewar K., FitzGerald M.G., Yang X., Allen N.R., Anderson S., Asakawa T., Blechschmidt K., Bloom T., Borowsky M.L., Butler J., Cook A., Corum B., DeArellano K., DeCaprio D., Dooley K.T., Dorris L. III, Engels R., Gloeckner G., Hafez N., Hagopian D.S., Hall J.L., Ishikawa S.K., Jaffe D.B., Kamat A., Kudoh J., Lehmann R., Lokitsang T., Macdonald P., Major J.E., Matthews C.D., Mauceli E., Menzel U., Mihalev A.H., Minoshima S., Murayama Y., Naylor J.W., Nicol R., Nguyen C., O'Leary S.B., O'Neill K., Parker S.C.J., Polley A., Raymond C.K., Reichwald K., Rodriguez J., Sasaki T., Schilhabel M., Siddiqui R., Smith C.L., Sneddon T.P., Talamas J.A., Tenzin P., Topham K., Venkataraman V., Wen G., Yamazaki S., Young S.K., Zeng Q., Zimmer A.R., Rosenthal A., Birren B.W., Platzer M., Shimizu N., Lander E.S.Nature 439:331-335(2006) Sequence of the 5'-end quarter of the human-thyroglobulin messenger ribonucleic acid and of its deduced amino-acid sequence.Malthiery Y., Lissitzky S.Eur. J. Biochem. 147:53-58(1985) Structural organization of the 5' region of the thyroglobulin gene. Evidence for intron loss and 'exonization' during evolution.Parma J., Christophe D., Pohl V., Vassart G.J. Mol. 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Endocrinol. 84:R23-R26(1992) Hormone synthesis in human thyroglobulin possible cleavage of the polypeptide chain at the tyrosine donor site.Marriq C., Lejeune P.J., Venot N., Vinet L.FEBS Lett. 242:414-418(1989) Preferential sites of proteolytic cleavage of bovine, human and rat thyroglobulin. The use of limited proteolysis to detect solvent-exposed regions of the primary structure.Gentile F., Salvatore G.Eur. J. Biochem. 218:603-621(1993) Characterization of hormonogenic sites in an N-terminal, cyanogen bromide fragment of human thyroglobulin.Xiao S., Pollock H.G., Taurog A., Rawitch A.B.Arch. Biochem. Biophys. 320:96-105(1995) Glycosylation in human thyroglobulin location of the N-linked oligosaccharide units and comparison with bovine thyroglobulin.Yang S.X., Pollock H.G., Rawitch A.B.Arch. Biochem. 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U.S.A. 100:15119-15124(2003) A novel compound heterozygous mutation in the thyroglobulin gene resulting in congenital goitrous hypothyroidism with high serum triiodothyronine levels.Kitanaka S., Takeda A., Sato U., Miki Y., Hishinuma A., Ieiri T., Igarashi T.J. Hum. Genet. 51:379-382(2006) Congenital hypothyroidism with goitre caused by new mutations in the thyroglobulin gene.Caputo M., Rivolta C.M., Esperante S.A., Gruneiro-Papendieck L., Chiesa A., Pellizas C.G., Gonzalez-Sarmiento R., Targovnik H.M.Clin. Endocrinol. (Oxf.) 67:351-357(2007) Thyroglobulin gene mutations producing defective intracellular transport of thyroglobulin are associated with increased thyroidal type 2 iodothyronine deiodinase activity.Kanou Y., Hishinuma A., Tsunekawa K., Seki K., Mizuno Y., Fujisawa H., Imai T., Miura Y., Nagasaka T., Yamada C., Ieiri T., Murakami M., Murata Y.J. Clin. Endocrinol. Metab. 92:1451-1457(2007) The p.A2215D thyroglobulin gene mutation leads to deficient synthesis and secretion of the mutated protein and congenital hypothyroidism with wide phenotype variation.Pardo V., Vono-Toniolo J., Rubio I.G., Knobel M., Possato R.F., Targovnik H.M., Kopp P., Medeiros-Neto G.J. Clin. Endocrinol. Metab. 94:2938-2944(2009)
Other Notes	Small volumes of TG recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TG purchase	MBS954199 is a recombinant protein targeting TG. Also known as Recombinant Human Thyroglobulin(TG).



SDS-Page of TG recombinant protein

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TG. It may not necessarily be applicable to this product.

NCBI GI #	55770862
NCBI GeneID	7038
NCBI Accession #	NP_003226.4
UniProt Primary Accession #	P01266
UniProt Secondary Accession #	O15274; O43899; Q15593; Q15948; Q9NYR1; Q9NYR2; Q9UMZ0; Q9UNY3
UniProt Related Accession #	P01266
GenBank Nucleotide #	NM_003235.4
NCBI Official Full Name	thyroglobulin
NCBI Official Synonym Full Names	thyroglobulin
NCBI Official Symbol	TG
NCBI Official Synonym Symbols	TGN; AITD3
UniProt Protein Name	Thyroglobulin
Protein Family	Thyroglobulin
UniProt Gene Name	TG
UniProt Synonym Gene Names	Tg
UniProt Entry Name	THYG_HUMAN
NCBI Protein Information	thyroglobulin
NCBI Summary for TG	Thyroglobulin (Tg) is a glycoprotein homodimer produced predominantly by the thryroid gland. It acts as a substrate for the synthesis of thyroxine and triiodothyronine as well as the storage of the inactive forms of thyroid hormone and iodine. Thyroglobulin is secreted from the endoplasmic reticulum to its site of iodination, and subsequent thyroxine biosynthesis, in the follicular lumen. Mutations in this gene cause thyroid dyshormonogenesis, manifested as goiter, and are associated with moderate to severe congenital hypothyroidism. Polymorphisms in this gene are associated with susceptibility to autoimmune thyroid diseases (AITD) such as Graves disease and Hashimoto thryoiditis. [provided by RefSeq, Nov 2009]

UniProt Comments for TG	TG: Precursor of the iodinated thyroid hormones thyroxine (T4) and triiodothyronine (T3). Defects in TG are the cause of thyroid dyshormonogenesis 3 (TDH3). A disorder due to thyroid dyshormonogenesis, causing large goiters of elastic and soft consistency in the majority of patients. Although the degree of thyroid dysfunction varies considerably among patients with defective thyroglobulin synthesis, patients usually have a relatively high serum free triiodothyronine (T3) concentration with disproportionately low free tetraiodothyronine (T4) level. The maintenance of relatively high free T3 levels prevents profound tissue hypothyroidism except in brain and pituitary, which are dependent on T4 supply, resulting in neurologic and intellectual defects in some cases. Variations in TG are associated with susceptibility to autoimmune thyroid disease type 3 (AITD3). AITDs including Graves disease (GD) and Hashimoto thyroiditis (HT), are among the most common human autoimmune diseases. They are complex diseases, which are caused by an interaction between susceptibility genes and nongenetic factors, such as infection. Belongs to the type-B carboxylesterase/lipase family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Secreted, signal peptide; Secreted Chromosomal Location of Human Ortholog: 8q24 Cellular Component: endoplasmic reticulum; extracellular region; extracellular space; Golgi apparatus; perinuclear region of cytoplasm; protein complex Molecular Function: anion binding; chaperone binding; hormone activity; protein complex binding; protein homodimerization activity Biological Process: hormone biosynthetic process; iodide transport; regulation of myelination; response to lipopolysaccharide; response to pH; signal transduction; thyroid gland development; thyroid hormone metabolic process; transcytosis Disease: Autoimmune Thyroid Disease, Susceptibility To, 3; Thyroid Dyshormonogenesis 3
Research Articles on TG	**1.** In the diagnosis of lymphatic metastasis in papillary thyroid carcinoma, FNA-Tg levels in the preoperative state are affected by serum Tg levels when they exceeded 1.0 mug/L.
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