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ProductInformation

Thyroglobulin
from bovine thyroid

Product Number **T 1001**
Storage Temperature -20 °C

Product Description

CAS Number: 9010-34-8
Molecular weight: 660-690 kDa[1-4]
pI = 4.5 (mean)[5]
Stokes radius: 8.58 nm[6]

Thyroglobulin is an iodine-containing protein that is stored in the thyroid gland. It is converted into circulating thyroxines when the thyroid is stimulated by TSH (Thyroid Stimulating Hormone) from the pituitary. It is a large glycoprotein produced in the thyroid gland as a precursor to thyroid hormones. Bovine thyroglobulin is a tetrameric protein consisting of subunits with molecular weight of approximately 165 kDa. Through disulfide linkages, the subunits form dimers, which in turn associate into tetramers.[2] The primary structure, deduced from the 2,769 amino acid sequence, has been reported.[7]

It is often used as a carrier protein for the production of antibodies. Its advantage as a carrier protein comes from its large number of tyrosine residues that can be used for conjugation using the diazo reaction. Its large size and absence from plasma under normal conditions makes it very immunogenic and reduces the chance that antibodies to this carrier protein will cross-react with plasma proteins in immunoassays. Haptens may be conjugated to thyroglobulin via accessible secondary amines.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

Thyroglobulin is soluble in water (20 mg/ml), yielding a hazy, yellow solution.

References

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2. Edelhoch, H., and De Crombrugghe, B., The Properties of Thyroglobulin. 13. The Structure of Reduced Alkylated Thyroglobulin. J. Biol. Chem., **241(19)**, 4357-4365 (1966).
3. J. Am. Chem. Soc., **83**, 1435 (1961).
4. J. Biol. Chem., **235**, 1326 (1960).
5. Ui, N., Electrophoretic Mobility and Isoelectric Point of Hog Thyroglobulin. Biochim. Biophys. Acta, **257(2)**, 350-364 (1972).
6. Edelhoch, H., J. Biol. Chem., **235**, 1326 (1960).
7. Mercken, L., et al., Primary Structure of Bovine Thyroglobulin Deduced from the Sequence of its 8,431-base Complementary DNA. Nature, **316(6029)**, 647-651 (1985).

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