

Thyroxine (S-249): sc-52831

BACKGROUND

Thyroxine (T4) is a tyrosine-based hormone produced by the thyroid glands. Thyroxine circulates throughout the body primarily bound to carrier proteins. Free T4 is converted to Triiodothyronine (T3) in peripheral tissues. The thyronines increase the basal metabolic rate, affect protein synthesis and increase the sensitivity of the body to catecholamines (such as adrenaline). Cases of hypothyroidism, where the gland is insufficiently active, can be treated by administration of Thyroxine or a combination of Thyroxine and Triiodothyronine. Sufficient levels of maternal Thyroxine are essential for fetal development, and inadequate production can cause irreversible fetal brain damage.

REFERENCES

1. Fedorovich, E.I. and Demidchik, IuE. 2003. Triiodothyronine and thyroxin binding to red blood cells in children and adolescents with thyroid cancer. *Vopr. Onkol.* 48: 661-663.
2. Silvestri, E., Schiavo, L., Lombardi, A. and Goglia, F. 2005. Thyroid hormones as molecular determinants of thermogenesis. *Acta Physiol. Scand.* 184: 265-283.
3. Vono-Toniolo, J., Rivolta, C.M., Targovnik, H.M., Medeiros-Neto, G. and Kopp, P. 2005. Naturally occurring mutations in the thyroglobulin gene. *Thyroid* 15: 1021-1033.
4. Becker, D.V., Braverman, L.E., Delange, F., Dunn, J.T., Franklyn, J.A., Hollowell, J.G., Lamm, S.H., Mitchell, M.L., Pearce, E., Robbins, J. and Rovet, J.F. 2006. Iodine supplementation for pregnancy and lactation-United States and Canada: recommendations of the American Thyroid Association. *Thyroid* 16: 949-951.
5. Mezosi, E. 2006. Hyperthyroidism. *Orv. Hetil.* 147: 1309-1314.
6. Kempers, M.J., Lanting, C.I., van Heijst, A.F., van Trotsenburg, A.S., Wiedijk, B.M., de Vijlder, J.J. and Vulsma, T. 2006. Neonatal screening for congenital hypothy and Thyroxine-binding globulin measurement: potentials and pitfalls. *J. Clin. Endocrinol. Metab.* 91: 3370-3376.
7. Shaikh, M.G., Wickramasuriya, N., McLachlan, K., Stirling, H. and Kirk, J.M. 2006. Thyroxine: cause and cure for headache. *Acta Paediatr.* 95: 632-633.
8. Wren, S.M., Leske, D.A., Mutapcic, L., Fautsch, M.P. and Holmes, J.M. 2006. The effect of L-Thyroxine supplementation in a neonatal rat model of ROP. *Curr. Eye Res.* 31: 669-674.
9. Zhou, A., Wei, Z., Read, R.J. and Carrell, R.W. 2006. Structural mechanism for the carriage and release of Thyroxine in the blood. *Proc. Natl. Acad. Sci. USA* 103: 13321-13326.

SOURCE

Thyroxine (S-249) is a mouse monoclonal antibody raised against Thyroxine of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ in 1.0 mL PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Thyroxine (S-249) is recommended for detection of Thyroxine of human origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.