

Alpha Subunit of TSH

Synonyms

ASU

Clinical Indication

The measurement of alpha subunit of TSH is helpful in distinguishing between a TSH-secreting pituitary adenoma and thyroid hormone resistance in patients with a high TSH and FT4 (alongside measurement of SHBG and other anterior pituitary hormones). TSH-secreting adenomas are rare and make up 1% of pituitary tumours. Other causes of high TSH and FT4 should be excluded first, such as binding protein abnormalities (causing apparent elevation of FT4 – e.g. familial dysalbuminaemic hyperthyroxinaemia) and antibody interference with the measurement of FT4, FT3 or TSH (these problems are assay dependent the laboratory can arrange for the these analytes to be measured on alternative platforms).

In thyroid hormone resistance the concentration of alpha subunit and the molar ratio of alpha subunit to TSH is normal whilst in a TSHoma these are often elevated. The interpretation of results is not straightforward and the concentrations of FSH, LH and TSH should be determined along with alpha subunit.

Available to Endocrinology Consultants only.

Part of Profile / See Also

Request Form

Combined Pathology manual request form or ICE request

Availability / Frequency of Analysis

Referred test: Sent to University Hospitals Birmingham, if specific criteria met.

Turnaround Time

Three weeks

Patient Preparation

Sample Requirements

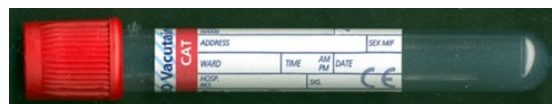
Specimen Type

Serum

Volume

1 ml

Container



red-top (serum) vacutainer



Paediatric SST (Brown top – Sarstedt)



Paediatric plain tube (Red top – BD Microtainer)

Reference Range & Units

Adult (male & female) < 1IU/L

Post-menopausal & mid cycle <3 IU/L

Interferences

Interpretation & Clinical

In thyroid hormone resistance the concentration of alpha subunit and the

Decision Value (if applicable)

molar ratio of alpha subunit to TSH is normal whilst in a TSHoma these are often elevated. The interpretation of results is not straightforward and the concentrations of FSH, LH and TSH should be determined along with alpha subunit.

References

<http://heftpathology.com/item/alpha-subunits-asu.html>

<http://www.acb.org.uk/docs/default-source/guidelines/TFTguidelinefinal.pdf>

Test code

ASU

Lab Handling

Aliquot at least 500ul and store in referrals rack at 4C. Sent daily by Royal Mail to Birmingham Heartlands Hospital.



**Accredited to
ISO 15189:2022**