
Lab Dept: Chemistry

Test Name: ACTH

General Information

Lab Order Codes: ADCO

Synonyms: Adrenocorticotrophic Hormone (ACTH), Plasma; Corticotropin; Cushing's Disease

CPT Codes: 82024 – Adrenocorticotrophic hormone (ACTH)

Test Includes: ACTH level reported in pg/mL.

Logistics

Test Indications: Useful for determining the cause of hypercortisolism and hypocortisolism states.

Lab Testing Sections: Chemistry – Sendouts

Referred to: Mayo Clinical Laboratories (Test: ACTH)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: Performed daily

Special Instructions: See [Collection](#), see [Patient Preparation](#). AM collections are desirable (0600 – 1030)

Specimen

Specimen Type: Blood

Container: Lavender top (EDTA) tube (MUST be ice cooled)

Draw Volume: 3 mL (Minimum: 2.5 mL) blood

Processed Volume: 1 mL (Minimum: 0.75 mL) plasma

Note: 2 mL of plasma is the maximum amount to freeze to minimize thawing time.

Collection: Draw in an ice-cooled, lavender top (EDTA) tube. Mix 8-10 times and immediately place tube in packed wet ice.

Special Processing: Lab Staff: Centrifuge specimen in a refrigerated centrifuge. Transfer plasma aliquot sample into a screw-capped round bottom plastic vial. Store and ship at frozen (-20 degrees C) temperatures.

Sample stability: Sample must be stored and transported frozen.

Note: When a refrigerated centrifuge is not available, it is preferable to spin the sample immediately and cool the sample afterward.

Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.

Sample Rejection: Specimens other than EDTA plasma; warm specimens; mislabeled or unlabeled specimens; gross hemolysis; specimens stored in glass tubes

Interpretive

Reference Range:

Pediatrics:	Pediatric reference values are the same as adults, as confirmed by peer reviewed literature.
Adults:	7.2 - 63 pg/mL (am draws)
No established reference values for pm draws	

Critical Values: N/A

Limitations: In very rare circumstances of the ectopic ACTH syndrome, the elevated ACTH may be biologically active but not detected by the immunometric assay.

Samples should not be taken from patients receiving therapy with high biotin or vitamin B7 doses (ie, >5 mg/day) until at least 12 hours following the last biotin administration.

Falsely elevated values may occur in plasma from patients who have developed human anti-mouse antibodies or heterophilic antibodies.

In rare cases, interference due to extremely high titers of antibodies to analyte-specific antibodies, streptavidin, or ruthenium can occur.

Under ACTH 1-24 medication, ACTH measurement is not recommended, due to negative interference with the sandwich assay.

Patients taking glucocorticoids may have suppressed levels of ACTH with an apparent high level of cortisol. This may be due to cross-

reactivity with the cortisol immunoassays. If exogenous Cusing is suspected, a cortisol level determined by liquid chromatography-tandem mass spectrometry should be used with the ACTH level for interpretation.

Values obtained with different assay methods or kits may be different and cannot be used interchangeably. Test results cannot be interpreted as absolute evidence for the presence or absence of malignant disease.

Methodology:

Automated Chemiluminescent Immunometric Assay

References:

[Mayo Clinical Laboratories](#) May 2019

Updates:

8/16/2010: Minimum draw volume update.

7/21/2015: Vista update

5/1/2019: Testing moved to Mayo.

4/2/2020: Updated minimum volume, Mayo update.