
Lab Dept: Chemistry

Test Name: PSEUDOCHOLINESTERASE, DIBUCAINE INHIBITION

General Information

Lab Order Codes: PSE

Synonyms: Dibucaine inhibition; Serum Cholinesterase; Cholinesterase

CPT Codes: 82638 – Dibucaine number
82480 – Cholinesterase; serum

Test Includes: Pseudocholinesterase dibucaine inhibition reported as a per cent and pseudocholinesterase, total reported in U/L.

Logistics

Test Indications: Useful for identifying patients who are homozygous for the atypical gene and have low levels of pseudocholinesterase (PCHE) which are not inhibited by dibucaine or for identifying patients who are heterozygous for the atypical gene, have lower than normal levels of PCHE, and varying levels of inhibition with dibucaine

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: CHED)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 2 days

Special Instructions: Patients age and sex are required on floor collected request form for processing. [See Patient Preparation.](#)

Specimen

Specimen Type: Blood

Container: Red top tube

Draw Volume: 3 mL (Minimum: 1.5 mL) blood

Processed Volume:	1 mL (Minimum: 0.5 mL) serum
Collection:	Routine venipuncture
Special Processing:	Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.
Patient Preparation:	For cases of prolonged apnea following surgery, wait 24 hours before obtaining specimen.
Sample Rejection:	Warm specimens: mislabeled or unlabeled specimens

Interpretive

Reference Range:

Dibucaine Inhibition:	
Dibucaine Inhibition	70-90%
Congenital deficiency:	18-20%
Total Pseudochoolinesterase:	
Males:	3100 - 6500 U/L
Females:	
<18 years:	not established**
18-49 years:	1800 - 6600 U/L
≥50 years:	2550 - 6800 U/L
<p>**Note: It has been reported that at birth and for weeks immediately following, the enzyme levels are low (~50% of adult values). During the next few years, a steady increase is seen with values ~10-15% above adult values by age 6 years. Enzyme values stabilize to adult levels at puberty.</p>	

Critical Values: N/A

Limitations:

There are some homozygous and heterozygous individuals who are sensitive to succinylcholine although their total pseudocholinesterase values are normal. A dibucaine inhibition test is necessary in order to confirm the presence of the abnormal allele in these individuals.

Dibucaine inhibition is on no value over total pseudocholinesterase in attempting to diagnose organophosphorus pesticide exposure. The same is true in liver disease.

Certain drugs and anesthetic agents may inhibit pseudocholinesterase activity. Therefore, it is recommended that blood specimens be obtained 24 – 48 hours post-operatively on those patients who have experienced prolonged apnea after surgery.

Methodology:

Photometric, Acetylthiocholine substrate with dibucaine addition includes pseudocholinesterase, total.

References:

[Mayo Medical Laboratories](#) July 2014