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**Lab Dept:** Chemistry

**Test Name:** CARBOHYDRATE DEFICIENT TRANSFERRIN (CDT), SERUM

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***General Information***

**Lab Order Codes:** CDTR

**Synonyms:** Carbohydrate Deficient Glycoprotein Syndrome (CDGS); Congenital Disorders of Glycosylation (CDG); Transferrin Isoforms

**CPT Codes:** 82373 – Carbohydrate deficient transferrin

**Test Includes:** Results are reported for the following: Transferrin Mono-oligo/Di-oligo Ratio; Transferrin A-oligo/Di-oligo Ratio; Transferrin Tri-salo/Di-olig Ratio; Apo CIII-1/Apo CIII-2 Ratio; Apo CIII-0/Apo CIII-2 Ratio.

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***Logistics***

**Test Indications:** Carbohydrate-deficient transferrin is a marker for the autosomal recessive disorder previously known as carbohydrate deficient glycoprotein syndrome (CDGS). CDGS is caused by various defects involving the glycosylation of glycoproteins.

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test: CDG)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 3 – 10 days; test set up Monday, Wednesday and Thursday

**Special Instructions:** Test is specific to congenital orders of glycosylation. MML offers a separate test for evaluation of alcohol abuse.

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***Specimen***

**Specimen Type:** Blood

**Container:** Red top tube

**Draw Volume:** 0.3 mL (Minimum: 0.15 mL) blood

<b>Processed Volume:</b>	0.1 mL (Minimum: 0.05 mL) serum
<b>Collection:</b>	Routine venipuncture
<b>Special Processing:</b>	Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at frozen temperatures.
<b>Patient Preparation:</b>	None
<b>Sample Rejection:</b>	Specimens other than serum; warm or cold specimens; mislabeled or unlabeled specimens; gross hemolysis

**Interpretive**

**Reference Range:**

<b>Congenital disorders of glycosylation</b>			
<b>Ratio</b>	<b>Normal</b>	<b>Indeterminate</b>	<b>Abnormal</b>
Transferrin Mono-oligo/Di-oligo Ratio	≤0.06	0.07 – 0.09	≥0.10
Transferrin A-oligo/Di-oligo Ratio	≤0.011	0.012 – 0.021	≥0.022
Transferrin Tri-salo/Di-oligo Ratio	≤0.05	0.06 – 0.12	≥0.13
Apo CIII-1/Apo CIII-2 Ratio	≤2.91	2.92 – 3.68	≥3.69
Apo CIII-0/Apo CIII-2 Ratio	≤0.48	0.49 – 0.68	≥0.69
<p>Interpretation: Results are reported as the mon-oligosaccharide/di-oligosaccharide transferring ratio. The a-oligosaccharide/di-oligosaccharide transferring ratio, the tri-salo/di-oligosaccharide transferring ratio, the Apolipoprotein CIII-1/Apolipoprotein CIII-2 ratio and the Apolipoprotein CIII-0/Apolipoprotein CIII-2 ratio. The report will include the quantitative results and an interpretation.</p> <p>Reports of abnormal results will include recommendations for additional biochemical and molecular genetic studies to more precisely identify the correct form of CDG. Treatment options, the name and telephone number of contacts who may provide studies at Mayo Clinic or elsewhere, and a telephone number for one of the laboratory directors (if the referring physician has additional questions) will be provided.</p>			

**Critical Values:** N/A

**Limitations:**

Other conditions such as hereditary fructose intolerance, metabolically decompensate galactosemia, and acute liver disease may have a CDG profile that is indistinguishable from any other true CDG-type I cases. Relevant clinical information and the indications for the analysis should be provided with the specimen, in particular in non-pediatric patients.

**Methodology:**

Affinity column followed by elution and Mass Spectrophotometry (MS)

**References:**

[Mayo Medical Laboratories Web Page](#) January 2013

**Updates:**

8/25/2009: Reference values are tied to reason for referral.

12/16/2009: Test now specific to Congenital Disorders of Glycosylation.

1/8/2013: Updated reference ranges and addition of new results.