Lab Dept:	**Chemistry**
Test Name:	**CH50**

General Information

Lab Order Codes:	CH5
Synonyms:	Complement, Total; Complement, Total Hemolytic complement
CPT Codes:	86162 – Complement; total hemolytic (CH50)
Test Includes:	Total complement level reported in U/mL.

Logistics

Test Indications:	Useful for detection of individuals with on ongoing immune process or congenital complement deficiencies.
Lab Testing Sections:	Chemistry - Sendouts
Referred to:	Mayo Clinic Laboratories (MML Test: COM)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 – 2 days, test set up Monday - Friday
Special Instructions:	See Collection. See Patient Preparation.

Specimen

Specimen Type:	Whole blood
Container:	Red/gold top SST (preferred) or Red top no gel tube **ON WET ICE**
Draw Volume:	3 mL (Minimum: 1.5 mL) blood
Processed Volume:	1 mL (Minimum: 0.5 mL) serum
Collection:	Routine venipuncture, **immediately place specimen on wet ice** and transport to lab for processing.

Special Processing:	Lab Staff: Centrifuge specimen at 4°C if possible, then IMMEDIATELY remove serum aliquot into a screw-capped round bottom plastic vial and freeze. Store and ship at frozen temperatures. Forward promptly. Specimen stable frozen for 28 days.
Patient Preparation:	Fasting specimens preferred.
Sample Rejection:	Warm specimens, mislabeled or unlabeled specimens

Interpretive

Reference Range:	30 – 75 U/mL
	Interpretation: Low levels of complement (total hemolytic complement: CH50) may occur during infections, disease exacerbation in patients with systemic lupus erythematosus, and in patients with immune complex diseases such as glomerulonephritis. Undetectable levels suggest the possibility of a complement component deficiency. Individual complement component assays are useful to identify the specific deficiency.
Critical Values:	N/A
Limitations:	Because this is a functional assay, the results are dependent on appropriate specimen transport and storage.
Methodology:	Automated Liposome Lysis Assay
References:	Mayo Clinic Laboratories January 2025
Updates:	11/24/2020: Updated reference range for all ages per Mayo 1/31/2025: Added SST as acceptable container and specimen stability. Clarified processing requirements.