

KAPPA/LAMBDA, LIGHT CHAINS, FREE, SERUM (Immunoturbidimetry)		
	mg/L	3.3 – 19.40
Kappa, Free light chain	mg/L	5.71 – 26.30
Lambda, Free light chain		0.26 – 1.65
Kappa/Lambda Ratio		

Interpretation

KAPPA	LAMBDA	KAPPA / LAMBDA RATIO	REMARKS
Normal	Normal	Normal	Normal sample. If serum electrophoretic pattern is also normal, it is unlikely that patient has Monoclonal gammopathy.
Normal	Normal	Low / High	Suggestive of Monoclonal gammopathy with Bone Marrow suppression
Low	Low	Normal	Suggestive of Bone Marrow suppression
Low	Low	Low / High	Suggestive of Monoclonal gammopathy with Bone Marrow suppression
High	High	Normal	Suggestive of : <ul style="list-style-type: none"> • Renal Impairment • Overproduction of Polyclonal free light chain from inflammatory conditions • Biclonal gammopathy of different free light chain types
High	High	Low / High	Suggestive of Monoclonal gammopathy with Renal Impairment

Comments

Measurement of free light chain (FLCs) aids in the diagnosis & monitoring of Multiple myeloma, Waldenstrom's macroglobulinemia, AL Amyloidosis & Light chain deposition disease. Serum concentration of FLCs is dependent upon the balance between production by plasma cells & their progenitors and renal clearance. When there is increased polyclonal immunoglobulin production and/or renal impairment, concentration of both kappa & lambda light chains can increase by 30-40 fold but the Kappa / Lambda ratio remains unchanged. In contrast, tumor produces monoclonal excess of only 1 type of light chains, often with bone marrow suppression of alternate light chains resulting in abnormal kappa/lambda ratio.

The combination of Serum protein electrophoresis (SPE) & Immunofixation (IFE) are highly sensitive but fail to identify a few patients with Light Chain Multiple Myeloma & all patients

of Non Secretory Multiple Myeloma. Combination of free light chain assay with SPE & IFE improves the sensitivity to 99%.

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