



Serum Free Light
Chain Assays

Test Code: 903371

Description: Free Kappa/Lambda Light Chains with Ratio, Serum

Test Code: 802857

Description: Free Kappa/Lambda Light Chains with Ratio, Serum, & Protein Electrophoresis, Serum

Test Code: 802897

Description: Free Kappa/Lambda Light Chains with Ratio, Serum; Protein Electrophoresis, Serum; & Immunofixation, Serum



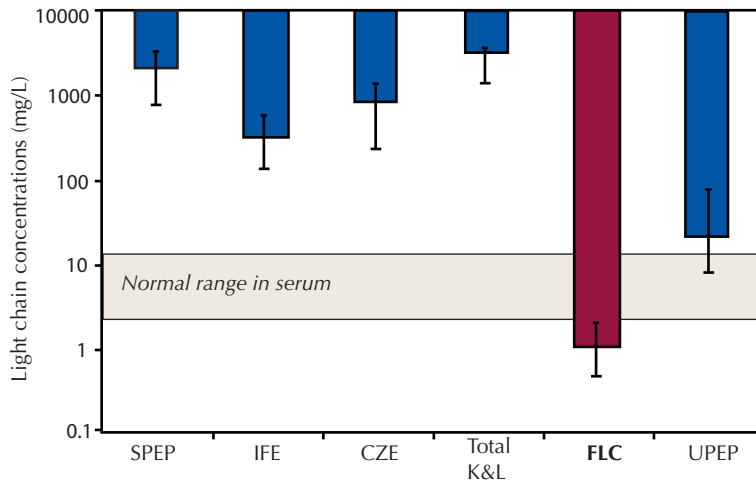
Serum free light chain assays (**Freelite**[®]) are recommended by the **NCCN Clinical Practice Guidelines in Oncology** and the **International Myeloma Working Group** for use in the initial diagnostic workup of multiple myeloma and related disorders.¹⁻²

The **International Myeloma Working Group Guidelines** recommend that **Freelite** be used for monitoring oligosecretory plasma cell disorders and AL Amyloidosis.¹

Detect More Multiple Myeloma & AL Amyloidosis Patients

- **Freelite** is an automated assay that measures free kappa and free lambda light chains in the serum and urine
- **Freelite** is the only test that evaluates free kappa and free lambda levels through their normal serum ranges
- An abnormal kappa/lambda ratio is a sensitive and specific marker of a clinically important monoclonal gammopathy

Sensitivity of various assays in light chains



Serum Free Light Chains - Normal Reference Ranges
 κ : 3.3–19.4 mg/L λ : 5.7–26.3 mg/L
 κ/λ ratio: 0.26–1.65

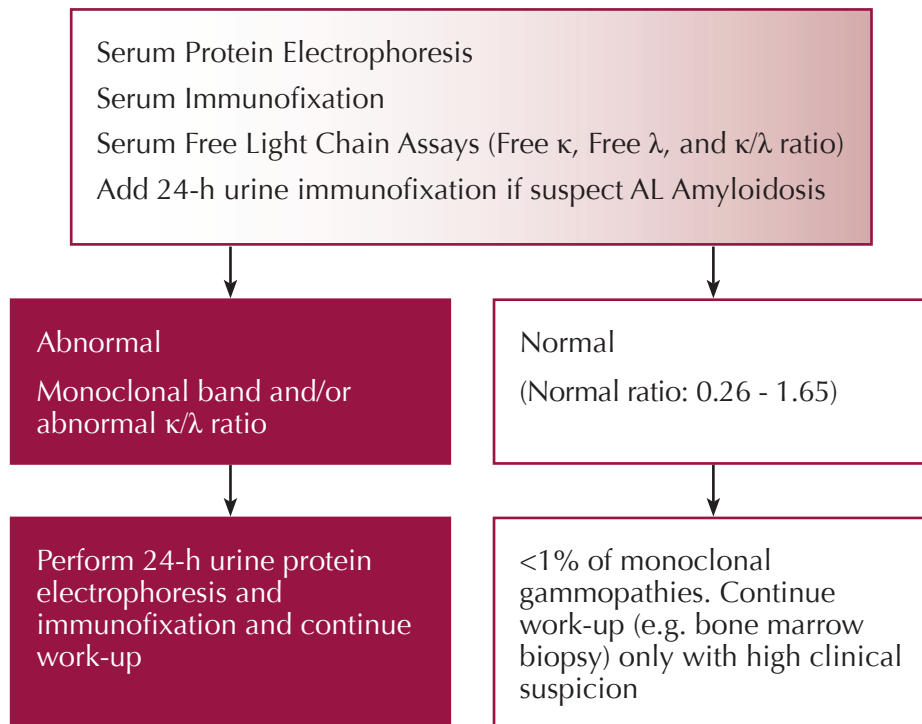
Freelite plus SPEP detects > 99% of myelomas

Protocols				
Diagnostic Sensitivity				
% of Paraproteins Detected				
	Multiple Myeloma ³	AL Amyloidosis ⁴	Light Chain Multiple Myeloma ⁵⁻⁶	Nonsecretory Multiple Myeloma ⁷
SPEP alone	88	53	57	0
Freelite alone	97	98	100	68
SPEP, Freelite +/- IFE	> 99	98	100	68

Freelite Is Trusted And Reliable

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IMWG Recommended Screening Algorithm¹



Screening Panels for Detection of Monoclonal Gammopathies³

	*SPEP	Serum FLC	Serum IFE	Urine PEL/IFE
MM	Yes	Yes		
WM	Yes	Yes		
SMM	Yes	Yes		
AL	Yes	Yes	Yes	Yes
LCDD	Yes	Yes	Yes	Yes

“The use of serum protein electrophoresis plus FLC provides a simple and efficient initial diagnostic screen for high-tumor-burden monoclonal gammopathies such as MM, WM and SMM.”³

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*SPEP=serum protein electrophoresis AL=Primary Amyloidosis FLC=Free light chain PEL=Protein electrophoresis IFE=Immunofixation electrophoresis LCDD=Light chain deposition disease MM=Multiple myeloma SMM=Smoldering multiple myeloma WM=Waldenström macroglobulinemia

Monitor Response To Treatment

Immunoglobulin Half-Life

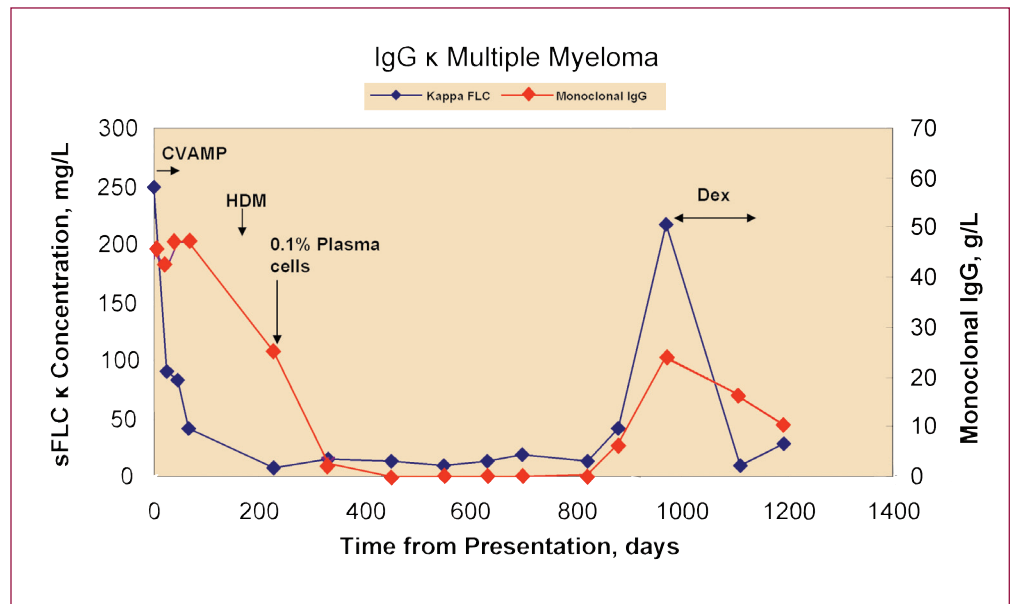
Protein	Half Life
IgG	20–25 days
IgA	6 days
IgM	6–8 days
Free Kappa	2–4 hours
Free Lambda	3–6 hours

- "Changes in serum-free immunoglobulin light chains (FLC) are a more rapid indicator of treatment response than intact immunoglobulins due to their shorter serum half-life"¹¹
- "The rate and depth of fall of FLC relates to drug sensitivity of myeloma patients to individual chemotherapeutic agents and may rapidly indicate the need for further treatment or a change in treatment"¹¹
- "Because of the shorter half-life of FLCs compared to intact immunoglobulins, levels of FLCs should more closely reflect tumour burden than levels of total light chain, IgG or total M-protein"¹²

Free light chain assays are also included in the International Uniform Response Criteria for multiple myeloma and the International Consensus Opinion in AL amyloidosis.⁸⁻⁹

This tumor produced intact monoclonal IgG κ and free κ light chains. During treatment, free κ serum levels decreased rapidly whereas IgG κ levels quantified with SPEP returned to normal very slowly.¹⁰

A similar pattern of response was seen during a subsequent relapse and treatment period.



References

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