



## SERUM FREE LIGHT CHAIN ASSAYS: DETECTING PLASMA CELL DISORDERS

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The Cover Story, Clinical Issues, and Lab Management published in *MLO* are peer-reviewed.

Cover story objectives and the CE questions were prepared by the *Medical Laboratory Observer* staff and approved by Shirley Richmond, Dean of the College of Human and Health Sciences at Northern Illinois University in DeKalb, IL.

### CE QUESTIONS

- The serum free light chain test involves the action of the antibodies.**
  - TRUE
  - FALSE
- The major advantage of running a serum free light chain test is that it measures concentrations**
  - in serum rather than in urine.
  - in urine rather than in serum.
  - Neither a nor b.
- The sensitivity of the serum free light chain assay is largely disease specific.**
  - TRUE
  - FALSE
- One disadvantage of using an FLC assay is**
  - the long turnaround time
  - its short shelf life.
  - the precision and accuracy does not equal that of a C3 assay, for example.
- In order to use the serum free light chain assay,**
  - special training is required.
  - no special training is required.
  - understanding the biology of free light chains helps to interpret results.
  - Both a and c.
  - Both b and c.
- Serum free light chain assays can be run on the same machines used to measure IgG, IgA, and IgM.**
  - TRUE
  - FALSE
- The serum free light chain assay can be used for**
  - screening patients.
  - diagnosing patients.
  - monitoring patients.
  - All of the above.
  - None of the above.
- The half-life of FLC is more than six hours.**
  - TRUE
  - FALSE
- The serum free light chain assay has been proven to be more sensitive than immunoelectrophoresis (IFE) when used in conjunction with serum protein electrophoresis (SPEP).**
  - TRUE
  - FALSE
- Using the FLC assay in conjunction with SPEP, only 50% of myelomas can be detected.**
  - TRUE
  - FALSE
- Plasma cells produce a larger quantity of light chains than heavy chains.**
  - TRUE
  - FALSE
- FLC testing is recommended for**
  - the initial evaluation of myeloma in serum rather than in urine.
  - the prognosis of plasma cell dyscrasias.
  - monitoring oligosecretory myeloma and AL amyloidosis.
  - a and b only.
  - a and c only.
  - All of the above.
- Physicians with patients over age 50 with renal failure should be screened for monoclonal gammopathies.**
  - TRUE
  - FALSE

**14. When developing FLC assays, producing suitable antibodies means they must**

- a. have a balanced response against the variety of different monoclonal FLCs produced by patients.
- b. have a high degree of specificity in order to recognize immunoglobulin light chains when free but not when bound to heavy chains in intact immunoglobulin molecules.
- c. bind to microscopic polystyrene particles or latex.
- d. a and b only.
- e. a and c only.

**15. Each clonal plasma cell undergoes heavy and light chain rearrangements to**

- a. produce an immunoglobulin molecule.
- b. produce highly specific polyclonal antisera.
- c. produce small plasma cell tumors.

**16. An important function of the kidneys is to re-absorb and catabolize small proteins, such as free light chains.**

- a. TRUE
- b. FALSE

**17. For the purpose of screening for monoclonal proteins for all diagnoses except AL, one author suggests that the FLC can replace the 24-hour urine IFE.**

- a. TRUE
- b. FALSE

**18. Patients with small plasma cell tumors are found to have normal serum free light chain results, while their urine appears abnormal.**

- a. TRUE
- b. FALSE

**19. Depending on the analyzer used, the serum free light chain assay takes between**

- a. 18 and 60 minutes to run.
- b. 60 and 90 minutes to run.
- c. five and 18 minutes to run.
- d. None of the above.

**20. The five types of immunoglobulin heavy chains identified are**

- a. delta, alpha, mu, epsilon, and zeta.
- b. gamma, theta, mu, epsilon, and omega.
- c. alpha, gamma, omega, kappa, and epsilon.
- d. gamma, alpha, mu, delta, and epsilon.

**TEST ANSWER FORM**

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July 2009**

*(This form may be photocopied; it is no longer valid for CEUs after January 31, 2011.)*

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