

# **Freelite<sup>TM</sup> / Hevylite<sup>TM</sup> Issue**

**The International Myeloma Foundation** (IMF) presents this edition of CITINGS, our premiere publication featuring the most up-todate information on myeloma treatment, focused on two diagnostic tests from The Binding Site Group Ltd. – trademarked procedures commonly called the Freelite and Hevylite. These incredibly useful tools provide necessary diagnostic information for multiple myeloma, amyloidosis, and other bematologic malignancies. This edition corresponds with articles published in the first half of 2010.

It is our bope that CITINGS will help keep you abreast of the latest developments in myeloma treatment. As always, we welcome your feedback; you may contact the IMF at (800) 452-CURE (2873) or at our website www.myeloma.org.

- Susie Novis, President, IMF

## Serum Free Light Chain Assays Publications from the first 6 months of 2010

	New Molecular and Biological Mechanism of Antitumor Activities of Kw-24/8, a Novel Nonansamycin Heat Spock Protein 90 Inbibitor, in Multiple Myeloma Cells.
	Nakashima T, Ishii T, Tagaya H, Seike T, Nakagawa H, Kanda Y, Akinaga S, Soga S, Shiotsu Y. <i>Clin Cancer Res. 2010 May 4. [Epub ahead of print.]</i> http://www.ncbi.nlm.nih.gov/pubmed/20406843 The authors evaluate the antitumor activities of KW-2478 in MM cells with various chromosomal translocations of immunoglobulin heavy chain loci both in vitro and in vivo. Their results suggest that targeting diverse pathways by KW-2478 could be a promising strategy for the treatment of myeloma with various cytogenetic abnormalities.
۲	Questionable role of free light chain assay ratio to determine stringent complete remission in multiple myeloma patients.
	Kröger N, Asenova S, Gerritzen A, Bacher U, Zander A. <i>Blood. 2010 Apr 22;115(16):3413-4; author reply 3414-5.</i> http://www.ncbi.nlm.nih.gov/pubmed/20413663 Comment on: Blood. 2009 Dec 3;114(24):4954-6.
۲	<i>Clinical usefulness of serum free light chain measurement in monoclonal gammopathy.</i> Shimazaki C, Murakami H, Sawamura M, Matsuda M, Kinoshita T, Hata H, Sugiura I, Tsushita K, Nagura E, Kosugi H, Itoh J, Shimizu K.
	Rinsho Ketsueki. 2010 Apr;51(4):245-52. http://www.ncbi.nlm.nih.gov/pubmed/20467220 This study suggests that FREELITE™ is useful for diagnosis, disease monitoring and assessment of response to treatment in patients with mono- clonal gammopathies such as myeloma and AL amyloidosis.
٢	<i>Monoclonal gammopathy of undetermined significance and smoldering multiple myeloma.</i> Kyle RA, Rajkumar SV.
	<i>Curr Hematol Malig Rep. 2010 Apr;5(2):62-9.</i> http://www.ncbi.nlm.nih.gov/pubmed/20425398 The authors discuss the nature of smoldering multiple myeloma and monoclonal gammopathy of undetermined significance, including their testing by serum protein electrophoresis, immunofixation, and the free light chain (FLC) assay.
www.myeloma.org $(800)$ 452 - CURE (2873)	

Funded by an unrestricted educational grant from Binding Site.

### Serum free light-chain assay for nonsecretory multiple myeloma with light chain cast nephropathy and light chain deposition disease.

Honma R, Fukase S, Suzuki M, Omoto E. Rinsho Ketsueki. 2010 Apr;51(4):270-4.

http://www.ncbi.nlm.nih.gov/pubmed/20467224

The authors perform serial serum free light chain (SFLC) assays in a patient with nonsecretory myeloma with with light chain cast nephropathy and light chain deposition disease (LCDD). They find that the quantitative FLC assay is useful for the diagnosis and monitoring of nonsecretory myeloma and LCDD in this patient.

# (2) 'Light-chain escape-multiple myeloma'-an escape phenomenon from plateau phase: report of the largest patient series using LC-monitoring.

Kühnemund A, Liebisch P, Bauchmüller K, zur Hausen A, Veelken H, Wäsch R, Engelhardt M.

J Cancer Res Clin Oncol. 2009 Mar;135(3):477-84. [Epub 2008 Sep 18.]

http://www.ncbi.nlm.nih.gov/pubmed/18802723

This report suggests that early detection of light-chain escape (LCE)-myeloma by means of serial serum free light chain measurements may prevent unnecessary complications, allow the detection of unusual relapse manifestations in the era of intensive and biological therapy options, and possibly also lead to improved treatment results in LCE-myeloma.

# Smoldering (asymptomatic) multiple myeloma: current diagnostic criteria, new predictors of outcome, and follow-up recommendations.

Bladé J, Dimopoulos M, Rosiñol L, Rajkumar SV, Kyle RA.

J Clin Oncol. 2010 Feb 1;28(4):690-7. [Epub 2009 Dec 21.]

http://www.ncbi.nlm.nih.gov/pubmed/20026810

The authors provide an overview on smoldering (asymptomatic) multiple myeloma, including a discussion of abnormal free light chain ratio as a risk factor for its progression.

# Prediction of response and progression in multiple myeloma with serum free light chains assay: corroboration of the serum free light chain response definitions.

Khoriaty R, Hussein MA, Faiman B, Kelly M, Kalaycio M, Baz R.

Clin Lymphoma Myeloma Leuk. 2010 Feb;10(1):E10-3.

http://www.ncbi.nlm.nih.gov/pubmed/20223721

The authors seek to validate the proposed response and progression criteria using serum free light chain (SFLC) testing for patients with nonsecretory multiple myeloma as set forth by the International Myeloma Working Group. The authors find that SFLC reliably predicts response and progression in myeloma. However, half of the patients had inevaluable disease by SFLC, thus limiting the utility of SFLC testing in patients with nonmeasurable disease by electrophoretic methods.

### (3) Sharply increased serum free light-chain concentrations after treatment for multiple myeloma.

Murata K, Clark RJ, Lockington KS, Tostrud LJ, Greipp PR, Katzmann JA. *Clin Chem. 2010 Jan;56(1):16-8.* http://www.ncbi.nlm.nih.gov/pubmed/20040623 No abstract available.

### (a) Analytical performance of the serum free light chain assay.

Briand PY, Decaux O, Caillon H, Grosbois B, Le Treut A, Guenet L.

*Clin Chem Lab Med. 2010;48(1):73-9.* 

http://www.ncbi.nlm.nih.gov/pubmed/19929752

The authors seek to evaluate the analytical performance of the serum free light chain (SFLC) assay. Their data demonstrate that the results of the SFLC assay must be interpreted jointly by the clinician and the biologist, taking into account the individual patient's clinical and biological characteristics.

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Richter AG, Harding S, Huissoon A, Drayson M, Pratt G. *Acta Haematol. 2010;123(3):158-61. [Epub 2010 Mar 10.]* 

http://www.ncbi.nlm.nih.gov/pubmed/20215741

The authors present the first description, investigation and treatment of myeloma with a plasma cell population producing truncated gamma(3) heavy chain and kappa free light chain M-proteins, a case that illustrates a number of unique immunological and clinical features.

# Abnormal serum free light chain ratio in patients with multiple myeloma in complete remission has strong association with the presence of oligoclonal bands: implications for stringent complete remission definition.

de Larrea CF, Cibeira MT, Elena M, Arostegui JI, Rosiñol L, Rovira M, Filella X, Yagüe J, Bladé J.

Blood. 2009 Dec 3;114(24):4954-6. [Epub 2009 Oct 1.]

http://www.ncbi.nlm.nih.gov/pubmed/19797521

The authors study the prevalence of an abnormal serum free light chain (SFLC) ratio in 34 patients with multiple myeloma in complete response (CR) after hematopoietic stem cell transplantation, resulting in the first report showing that the presence of oligoclonal bands in patients with myeloma in CR frequently results in an abnormal SFLC ratio.

# **W** Use of interval-specific likelibood ratios improves clinical interpretation of serum FLC results for the diagnosis of malignant plasma cell disorders.

Vermeersch P, Vercammen M, Holvoet A, Broeck IV, Delforge M, Bossuyt X. *Clin Chim Acta. 2009 Dec;410(1-2):54-8. [Epub 2009 Sep 22.]* 

http://www.ncbi.nlm.nih.gov/pubmed/19778527

The authors examine whether the use of test result interval-specific likelihood ratios (LR) could improve the clinical interpretation of serum FLC kappa/lambda ratio for the diagnosis of malignant plasma cell disorders. They conclude that interpreting serum FLC kappa/lambda ratios using LRs for different result intervals improves the clinical interpretation for the diagnosis of malignant plasmacytoma.

### Complete remission of nepbrotic syndrome and improvement of renal function in a patient with light chain deposition disease following high dose chemotherapy with transplantation of autologous baematopoietic stem cells. A case study and review of literature. [Article in Czech]

Adam Z, Krejcí M, Pour L, Stepánková S, Cermáková Z, Voska L, Teplan V, Krivanová A, Hájek R, Mayer J.

Vnitr Lek. 2009 Nov;55(11):1089-96.

http://www.ncbi.nlm.nih.gov/pubmed/20017442

The authors document the importance of plasma free light chain detection.

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