



MEMORANDUM # 79

TO: UNC Hospitals Attending Physicians, Housestaff, Nursing Coordinators, Department Heads, and Supervisors.

FROM: *CM* Christopher R. McCudden, Ph.D., Associate Director, Core Laboratory
CS Catherine Hammett-Stabler, Ph.D., Director, Core Laboratory
MB Mark Brecher, M.D., Director, McLendon Clinical Laboratories

DATE: October 2, 2008

SUBJECT: Use of Mayo Laboratories for Serum Free Light Chain Testing

Effective September 10, 2008, quantitative serum free light chain testing will be referred to the Mayo Medical Laboratories. Previously this test was performed in the McLendon Core Laboratory. We have determined that a reagent formulation change would have had an unacceptable impact on patient results using the assay here at UNC; because this change was identified prior to implementation there were no patient samples reported using the re-formulation. The test at Mayo Medical Laboratories uses slightly different methodology and is not subject to the reagent change. However, some patient results will differ with the change to Mayo (see below). Specimen collection requirements and the reference intervals will not change.

The methodological differences between the Core Laboratory and Mayo may affect the absolute concentrations of both kappa and lambda free light chains in some patients. This is most pronounced at very high light chain concentrations >100 mg/dL with the Mayo method returning results that are ~30-50% higher for both kappa and lambda light chains (see Table 1). Importantly, there is little effect on the κ/λ ratio (see Table 2).

Table 1. Comparison of UNC and Mayo results for individual serum free light chains.

Free Kappa		Free Lambda	
Mayo	UNC	Mayo	UNC
115	119	127	92
148	90	101	86
161	86	106	70
219	131	600	385

Table 2. The κ/λ ratio determined from 78 patient specimens analyzed at Mayo and UNCH.

κ/λ ratio	Mayo Medical Laboratories		
	<0.26	0.26-1.65	>1.65
UNC Core Laboratory	9	0	0
	1 ^a	28	0
	0	7 ^b	33

^aRatio was 0.17 at Mayo and 0.29 at UNCH.

^bRatios ranged from 1.65 to 2.30.

The test will be sent out Monday through Friday each week. Please contact Dr. Christopher McCudden (966-3726) or the Core Laboratory (966-2361) for additional information.