

# Laboratory Bulletin

Important News from DCL Medical Laboratories



June 11, 2009

## Move to new chemistry analyzer prompts collection changes for C-Peptide

DCL Medical Laboratories is now performing C-Peptide testing on a new analyzer - the Cobas® 6000 from Roche Diagnostics. This change has prompted us to implement new specimen collection requirements for C-Peptide testing. The move to a new analyzer also now allows DCL to run this test on a daily basis - resulting in an improved turnaround time for clients.

### New Specimen Collection Requirements for C-Peptide Testing

- The specimen should be stored refrigerated. If it will not be tested within 12 hours of collection, it should be centrifuged and separated into a plastic pour-off tube and frozen.
- When drawn with specimens for additional testing, the specimen for C-Peptide should be drawn in its own separate SST.

We appreciate your continued support of DCL Medical Laboratories as we implement new technology in an effort to provide the best quality for our clients and their patients. If you have any questions regarding these changes, please contact DCL Client Services at (317) 874-1334 or toll free at (866) 874-1334.

### C-Peptide

C-peptide is produced by the beta cells of the pancreas. C-peptide and insulin are formed in equimolar amounts following the cleavage of proinsulin<sup>1</sup>.

While C-peptide has no remarkable biological activity, determination of serum C-peptide levels may assist in the confirmation of serum insulin in normal patients, since serum molar concentrations should be equivalent to insulin. C-peptide has no insulin-like action but can be measured in the blood in patients receiving insulin to estimate residual beta-cell function<sup>1,2</sup>.

In addition, C-peptide may be used to assist in the monitoring of supplemental insulin dose administration since C-peptide is not present in commercial insulin preparations resulting in elevated insulin levels and normal to low C-peptide levels. Elevated insulin levels and low C-peptide levels are also observed in patients with insulin autoantibodies and postprandial hyperglycemia. C-peptide is typically a better indicator of beta-cell function and capacity than peripheral insulin concentration. Serum C-peptide concentration is increased in insulinomas and beta-cell tumors. It

C-Peptide	
C-Peptide	DCL #:3060
<b>Collection Container:</b>	SST - Serum
<b>Storage/Stability:</b>	12 hours refrigerated If the specimen will not be tested within 12 hours, centrifuge and transfer to plastic pour-off tube and freeze
<b>Turnaround Time:</b>	1 Day
<b>Days Run:</b>	Sun - Sat
<b>Preferred amount:</b>	1.0 mL Serum
<b>Minimum amount:</b>	0.5 mL Serum
<b>Centrifuge required?:</b>	Yes
<b>Fasting required?:</b>	No
<b>Method:</b>	Electrochemilluminescence Immunoassay (ELISA)
<b>Special Instructions:</b>	Collect specimen in separate SST intended only for C-Peptide testing
<b>Clinical Utility:</b>	<ul style="list-style-type: none"><li>• In management of diabetes mellitus</li><li>• In management of hypoglycemia</li><li>• Evaluation of the endogenous insulin production</li><li>• Evaluation of pancreatic beta-cell function</li><li>• Monitoring insulin levels in patients receiving exogenous insulin</li><li>• Evaluate residual beta cell function in patients with other than diabetes mellitus disorders</li></ul>
<b>Reference Range:</b>	1.1 to 4.4 ng/mL
<b>CPT: 84681</b>	Medicare Reimbursement: \$30.38

\* Per Jan. 2009 Clinical Diagnostic Laboratory Fee Schedule for Indiana.

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is also used for the evaluation of fasting hypoglycemia<sup>1,2,3</sup>.

**References:**

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2. Torn C, Landin-Olsson M, Lernmark A, et al. Prognostic factors for the course of beta cell function in autoimmune diabetes. *J Clin Endocrinol Metab*. 2000;85(12):4619-23.
3. Wasada T, Kuroki H, Aii H, et al. Hyperglycemia facilitates urinary excretion of c-peptide by increasing glomerular filtration rate in non-insulin dependent diabetes mellitus. *Metabolism*. 1995;44(9):1194-8.
4. Wright-Pascoe R, Mills J et al. The role of c-peptide in the classification of diabetes mellitus. *West Indian Med*
5. Cobas C-Peptide assay, Package Insert. Roche. 6/2007.