

Technical Memorandum

Procalcitonin Biomarker for Serious Infections

TO: Medical Staff and Clients

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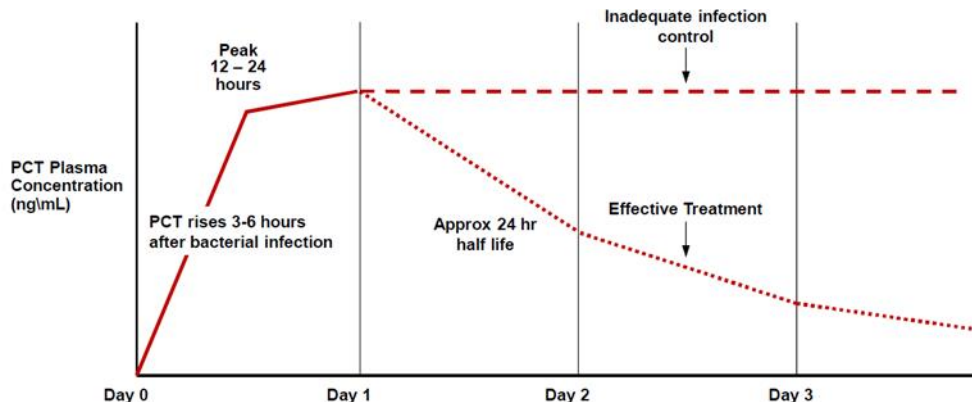
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SUBJECT: Procalcitonin serves as a biomarker for serious bacterial infections

Procalcitonin is secreted by many different cell types in response to inflammatory stimulation. An increase in the serum concentration of procalcitonin (PCT) is a good biomarker for serious bacterial infection or sepsis.

Healthy people have PCT concentrations below 0.05ng/ml. A PCT concentration of ≥ 0.1 ng/mL most likely indicates a clinically relevant bacterial infection and a PCT value of > 0.5 ng/mL is a likely indicator that the patient may be at a higher risk for developing severe sepsis or septic shock. Plasma PCT rises quickly during a serious bacterial infection, and has a fairly consistent 24 hour half-life once patients are on effective therapy (Figure). There is no elevation from viral infections.



Brunkhorst FM et al., Intens. Care Med (1998) 24: 888-892
Dandona P. et al., J. of Endocrinology and Metabolism. (1994). 79: 5

At DLS, PCT is performed using the Elecsys BRAHMS PCT assay (electrochemiluminescence immunoassay) on the Roche cobas e immunoassay analyzers.

PCT can be elevated for non-bacterial conditions such as newborns, polytrauma, burns, major surgery, prolonged circulatory failure, pro-inflammatory treatment (OKT3, Injection Therapy, $TNF\alpha$, IL-2, anti-lymphocyte globulins), certain cancers (medullary C-cell cancers of the thyroid, pulmonary small-cell carcinoma, and bronchial carcinoma, malaria, and certain fungal infections (candidemia), renal failure (higher PCT baselines).

Test Name	Order Code	Specimen Requirement	Specimen Rejection	Procedure Code
Procalcitonin	6008	Lithium Heparin PST (Green)	Insufficient quantity, Specimen older than stability limits, Thawed	84145

For questions, please call DLS Hawaii Client Services (808-589-5101), Guam Laboratory (671-646-5770), Dr. Wesley Kim (808-589-5131), or Dr. Ana Ortega-Lopez (808-691-4470).