

# Procalcitonin FS

The Reliable Alternative,  
When Time Matters



Precise | Cost-efficient | Time-saving  
DiaSys. Total Confidence in Patient Results.

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Diagnostic Systems

CHOOSING QUALITY.

## What is Procalcitonin?<sup>1-6, 10</sup>

Procalcitonin (PCT), the precursor of the hormone calcitonin, is a 116 amino acid protein with a molecular weight of 13 kDa. In healthy individuals PCT is primarily expressed in thyroid C cells and is enzymatically cleaved to calcitonin, a calcium-regulating peptide. Upon stimulation by bacterial toxins and inflammatory cytokines PCT is expressed in the tissue of all organs. Thus, in patients with systemic bacterial infections, the PCT concentrations rise from <0.1 ng/mL up to 1000 ng/mL within a few hours. PCT measurement is also recommended by the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) for patients with COVID-19.

## Sepsis Management<sup>6-9</sup>

Sepsis is a worldwide leading cause of death. Recent studies estimate nearly 50 million cases for 2017, with 40% of them affecting children and newborns under the age of five. Sepsis is a systemic inflammatory response syndrome (SIRS) caused by mostly bacterial infections.

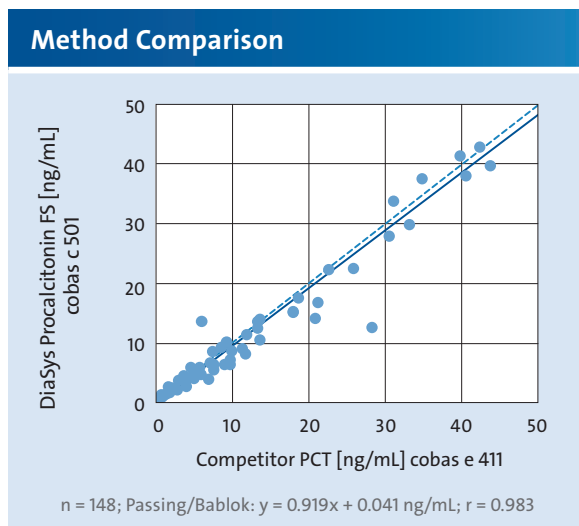
According to Sepsis-3 criteria sepsis is described as life-threatening organ dysfunction caused by infections. Cases of severe sepsis lead to multiple organ failure or septic shock, resulting in a mortality rate >22% in all sepsis patients. Early diagnosis and immediate treatment of sepsis is key to improve odds of survival. For every hour without proper treatment, the mortality rate increases by 7 – 10%.

## Procalcitonin FS

Procalcitonin FS is a fluid-stable, particle enhanced immunoturbidimetric assay with a good precision at clinical cut-off levels. The measuring range is given from 0.2 ng/mL to 50 ng/mL. No prozone effect was observed up to 1000 ng/mL. The assay performance is complemented by a high tolerance to endogenous interferences and to common therapeutics used in sepsis management. The performance of Procalcitonin FS is comparable to established methods, presenting a reliable alternative for clinical chemistry analyzers.

## Choosing DiaSys!

Since more than 30 years, DiaSys has been developing fluid stable assays for clinical chemistry analyzers. “Choosing Quality” describes DiaSys’ philosophy to supply reagents of outstanding performance and service to rely on. DiaSys offers reagents for automated systems as well as dedicated calibrators and controls. In addition, DiaSys is part of the IFCC working group for standardization of procalcitonin assays. For further information, please visit our website or follow the QR-code.

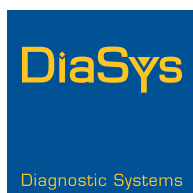


**Precision**

Intra-assay	Mean [ng/mL]	CV [%]	Inter-assay	Mean [ng/mL]	CV [%]
Sample 1	0.45	6.53	Sample 1	0.50	7.34
Sample 2	1.98	4.17	Sample 2	1.87	5.00
Sample 3	9.73	3.74	Sample 3	9.48	3.56

### References

<sup>1</sup> Maruna P. et al. *Physiol Res.* 2000; 49(Suppl 1): S57–S61. <sup>2</sup> Müller B. et al. *J Clin Endocrinol Metab.* 2001; 86(1): 396–404. <sup>3</sup> Becker K.L. et al. *The Journal of Clinical Endocrinology & Metabolism.* 2004; 89(4): 1512–1525. <sup>4</sup> Becker K.L. et al. *British journal of pharmacology.* 2010; 159(2): 253–264. <sup>5</sup> Harbarth S. et al. *Am J Respir Crit Care Med.* 2001; 164: 396–402. <sup>6</sup> Meisner M. *Procalcitonin – Biochemie und klinische Diagnostik.* 1. Auflage Bremen: UNI-MED-Verlag 2010. <sup>7</sup> Rudd K.E. et al. *The Lancet.* 2020; 395 (10219): 200–211. <sup>8</sup> Singer M. et al. *JAMA.* 2016; 315(8): 801–810. <sup>9</sup> Martin G.S. *Expert Rev Anti Infect Ther.* 2012; 10(6): 701–706. <sup>10</sup> IFCC Information Guide on COVID-19 <https://www.ifcc.org/resources-downloads/ifcc-information-guide-on-covid-19-introduction/> [last accessed: October 22nd 2021] | Image by pixabay anca



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