

Holzheim, June 10, 2020\_10

## DiaSys Parameters in COVID-19 Monitoring

### Role of Albumin in COVID-19

Albumin is an essential binding and transport protein for various substances in plasma and maintains the osmotic pressure of blood. Decreased serum concentrations of albumin can be caused by (e.g.) liver impairments, during acute phase inflammatory processes, or by increased excretion in the kidney. (1,2)

The recently published IFFC Guide on COVID-19 (3) suggests testing for albumin in patients with COVID-19. Low levels of serum albumin are reported in patients with severe forms of the disease, (4–6) and hypoalbuminemia was associated with mortality in hospitalized patients. (6,7)

In the course of the pandemic, research continuously reveals effects and characteristics of the disease. In patients that were likely to be admitted to the ICU due to a severe form of COVID-19, a German study found low serum albumin concentrations alongside with increased albumin in urine. (8)

Small abnormal albumin excretion, known as microalbuminuria, serves as an indicator for the temporary overload of the glomerular filtration and is an early indicator for nephropathies. (2)

Different numbers of patients with signs of kidney dysfunction are reported, but authors agree on the importance of monitoring kidney function in patients with COVID-19. (9,10) The effects of COVID-19 on renal function and development of acute kidney injury gain awareness and are currently under investigation. (8–10)

For information on DiaSys albumin assays, please refer to [Albumin FS](#) for determinations from serum and plasma, or to [Albumin in Urine/CSF FS \(Microalbumin\)](#) for measurements from urine. For further details on DiaSys assays in general, please have a look at our website: <https://www.diasys-diagnostics.com/>.

With continuous information about "Laboratory Diagnostics in COVID-19", we want to support you in marketing DiaSys products in times of pandemic. For all information we published on this topic, please refer to our newly created BLOG: <https://www.diasys-diagnostics.com/blog/>.

Andreas Baecker  
Product Manager Reagents



# CUSTOMER INFORMATION

## References:

1. Thomas L, editor. Labor und Diagnose: Indikation und Bewertung von Laborbefunden für die medizinische Diagnostik. 6. Aufl. Frankfurt/Main: TH-Books-Verl.-Ges; 2005.
2. Gressner AM, Baum H, editors. Klinische Chemie: [Präanalytik, Analytik, Kenngrößen, Interpretation]: 500 Tabellen. 1. Aufl. Heidelberg: Springer; 2007.
3. IFCC Information Guide on COVID-19 [Internet]. IFCC Information Guide on COVID-19. 2020. Available from: <https://www.ifcc.org/ifcc-news/2020-03-26-ifcc-information-guide-on-covid-19/>
4. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *The Lancet*. 2020;395:1054–62.
5. Lippi G, Plebani M. Laboratory abnormalities in patients with COVID-2019 infection. *Clinical Chemistry and Laboratory Medicine (CCLM)* [Internet]. 2020 [cited 2020 Apr 28];0. Available from: <https://www.degruyter.com/view/journals/cclm/ahead-of-print/article-10.1515-cclm-2020-0198/article-10.1515-cclm-2020-0198.xml>
6. Aziz M, Fatima R, Lee-Smith W, Assaly R. The association of low serum albumin level with severe COVID-19: a systematic review and meta-analysis. *Crit Care*. 2020;24:255.
7. Akirov A, Masri-Iraqi H, Atamna A, Shimon I. Low Albumin Levels Are Associated with Mortality Risk in Hospitalized Patients. *The American Journal of Medicine*. 2017;130:1465.e11-1465.e19.
8. Gross O, Moerer O, Weber M, Huber TB, Scheithauer S. COVID-19-associated nephritis: early warning for disease severity and complications? *The Lancet*. 2020;395:e87–8.
9. Wang L, Li X, Chen H, Yan S, Li D, Li Y, et al. Coronavirus Disease 19 Infection Does Not Result in Acute Kidney Injury: An Analysis of 116 Hospitalized Patients from Wuhan, China. *Am J Nephrol*. 2020;51:343–8.
10. Anti-2019-nCoV Volunteers, Li Z, Wu M, Yao J, Guo J, Liao X, et al. Caution on Kidney Dysfunctions of COVID-19 Patients [Internet]. *Infectious Diseases (except HIV/AIDS)*; 2020 Feb. Available from: <http://medrxiv.org/lookup/doi/10.1101/2020.02.08.20021212>