



**CLINICAL ANALYSIS ROLE ON COVID-19 PATIENTS MONITORING
(RELATED PARAMETERS)**





SPINREACT, S.A.U.
VAT: ES A17027202
Ctra Santa Coloma, 7
E-17176 SANT ESTEVE DE BAS (ESPAÑA)
Tel. +34 972 69 08 00 - Fax. +34 972 69 00 99
spinreact@spinreact.com
www.spinreact.com

MONITORING COVID-19

Dear user/ distributor,

In order to contribute to global population health care, Spinreact edits this small guide of parameters that may be directly or indirectly altered during the course of COVID-19 disease

We hope it will be helpful and reinforce the knowledge that professionals dedicated to in-vitro diagnosis have about monitoring SARS-CoV-2 infection.

As you already know, Spinreact has reagents and technology for the determination of all these parameters and we want to announce that all actions related to the treatment of COVID-19 will enjoy the highest priority.

Now more than ever,

¡ We keep on growing together !



Joan Beltran
Marketing Manager



HEMOGRAM:

Lymphopenia and thrombocytopenia have been associated with an increased risk of severe infection and may be useful as predictive clinical indicator to monitor disease's progression



Lippi G, Plebani M, Michael Henry B. Thrombocytopenia is associated with severe coronavirus disease 2019 (COVID-19) infections: a meta-analysis. Clin Chim Acta. 2020 Mar 13;506:145-8



Tan L, Wang Q, Zhang D, et al. Lymphopenia predicts disease severity of COVID-19: a descriptive and predictive study. Signal Transduct Target Ther. 2020 Mar 27;5:33

RELATED PRODUCTS:



Spincell 3



Spincell 5compact

SPINCELL line of hematological cell counters





COAGULATION:

The most common observed effects are **increased D-dimer concentration and prolonged prothrombin time.**



Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Feb 15;395(10223):497-506

A Study showed that **non-survivors had significantly higher D-dimer levels, longer prothrombin time, and activated partial thromboplastin time** compared to survivors



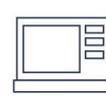
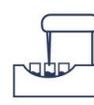
Tang N, Li D, Wang X, et al. Abnormal coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia. J Thromb Haemost. 2020 Apr;18(4):844-7

RELATED PRODUCTS:

SPINREACT coagulation reagents



COAGULATION · COAGULACIÓN			
PRODUCT · PRODUCTO	METHOD · MÉTODO	SIZE · PRESENTACIÓN	REF. · CÓDIGO
APTT test	Activated partial thromboplastin time	5x4 mL	1709201
FIBRINOGEN · FIBRINÓGENO	Clauss Test	8x2 mL + 1x100 mL	1709211
		4x4 mL	1709222
PT Test	Prothrombin Time Test	10x2 mL	1709223
	Heparin inhibitor / Inhibidor de heparina	10x4 mL	1709224
		6x4 mL	1709225
COAGULATION CALIBRATOR · CALIBRADOR COAGULACIÓN		4x1 mL	1709101
COAGULATION NORMAL CONTROL · CONTROL NORMAL		4x1 mL	1709104
COAGULATION PATHOLOGICAL CONTROL · CONTROL PATOLÓGICO		4x1 mL	1709106
D-DIMER · DIMERO-D		2x10 mL / 2x10 mL	1709231
D-DIMER CALIBRATOR · CALIBRADOR DIMERO-D		6x0.5 mL (6 levels)	1709111
D-DIMER CONTROL · CONTROL DIMERO-D		6x1 mL (3x2 levels)	1709114



METABOLIC FUNCTION

The most common laboratory alterations in patients admitted with pneumonia include increased hepatic transaminases. Other alterations include decreased albumin and kidney failure.

Liver function abnormalities may be more common in patients with COVID-19 compared to other types of pneumonia.



Zhao D, Yao F, Wang L, et al. A comparative study on the clinical features of COVID-19 pneumonia to other pneumonias. Clin Infect Dis. 2020 Mar 12

RELATED PRODUCTS:

SPINREACT biochemistry line



GOT / AST

IFCC. Enzymatic - UV



GPT / ALT

IFCC. Enzymatic - UV



ALBUMIN

Bromocresol Green



CREATININE

Trinder Enzymatic



CREATININE

Jaffé Colorimetric



B2 - μ Globulin

Turbilatex



CRP:

A high concentration may be detected in patients with secondary bacterial infection and/or indicate hyper-inflammation.

 Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Feb 15;395(10223):497-506

Some hospitals are using CRP to monitor low-dose corticosteroid administration to reduce inflammation. As far as we have known, at least one Spanish hospital uses CRP result of >300mg/l as a criterion to initiate corticosteroid treatment. This value is not backed by any publication. We recommend using this information with caution.

RELATED PRODUCTS:

CRP
Turbilatex



FERRITIN:

A high result may be related to the development of cytokine release syndrome.

 Mehta P, McAuley DF, Brown M, et al. COVID-19: consider cytokine storm syndromes and immunosuppression. Lancet. 2020 Mar 28;395(10229):1033-4

RELATED PRODUCTS:

FERRITNE
Turbilatex



LDH

An increased concentration of lactate dehydrogenase has been identified in between 73% and 76% of patients affected by COVID-19. Indicates hepatic injury or erythrocyte lysis and may be more common in patients with COVID-19 compared to other types of pneumonia.



Zhao D, Yao F, Wang L, et al. A comparative study on the clinical features of COVID-19 pneumonia to other pneumonias. Clin Infect Dis. 2020 Mar 12

RELATED PRODUCTS:

LDH

Pyruvate. Kinetic UV



OTHER PARAMETERS

The parameters described above are not the only ones that may be related or may help on monitoring the evolution and severity of COVID-19.

- **Blood gases** are used as a measure of the effectiveness of respiratory function
- **CK-NAC, troponin** or **Pro-BNP** are used as an indicator of cardiac involvement. Some authors mention possible myocarditis resulting from COVID19
- **Hyperfibrinogenemia** is observed due to macrophage activation caused by COVID-19
- **High PCT levels** are observed in COVID-19 patients. Its presence is non-specific and influenced by factors such as age. An increase in PCT value could indicate secondary bacterial infection

Note that this document is about monitoring of affected patients and does not include direct SARS-CoV-2 virus detection systems or indirect ones by studying patients' globulins.

We hope you found this document interesting.





i We keep on growing together !

**SPINREACT**