Immuno-informatics in SARS-CoV-2 study

Dushyanth R Vennapu[1*], Shashank Kumar[2], Prem Prakash Kushwaha[2]

[1]Department of Chemistry, Central University of Punjab, Bathinda-151401, Punjab, India
[2]Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Bathinda-151401, Punjab, India.

*Corresponding author

ABSTRACT

Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) is the virus that causes coronavirus disease in 2019 and responsible for the COVID-19 pandemic. It creates severe respiratory-related problems and other complaints in the human body and causes deaths. World Health Organization (WHO) confirmed it as a pandemic caused by SARS-CoV-2 in March 2020. Unavailability of precise treatment, as well as biomedical preclusion, makes the researchers think to understand the various diagnostic tools and techniques for the COVID-19 epidemiologic assessments. Understanding post-infection immunity has also played role in the COVID-19 epidemiologic assessments. All these facts ignite the scientific community to develop the precise serological assays to spot antibodies against SARS-CoV-2. Further, difficulties in the validation in respect to usefulness, quality, etc., immuno-chromatography becomes a hope for the clinical identification of the disease. Immuno-chromatography is a combination of chromatography and immunoassay. Immuno-chromatography comprises a widespread collection of tests for clinical as well as industrial applications. Immuno-chromatographic mediated serological screening for selective antibody detection (IgG/IgM) against SARS-CoV-2 may be one of the tactics to detect the precise infection. Immuno-chromatographic techniques with suitable modifications in the protocol may also untwist the new challenges coming with the COVID-19 disease including detection of new strains of SARS-CoV-2. Over the other techniques such as ELISA (Enzyme-Linked Immuno-Sorbent Assay), immune-chromatography may avoid errors in the result evaluation at both clinical and epidemiological levels.

Keywords: SARS-CoV-2, COVID-19, ELISA, Immuno-chromatography

ISBN: 978-81-947843-4-0; DOI: 10.21467/abstracts.109