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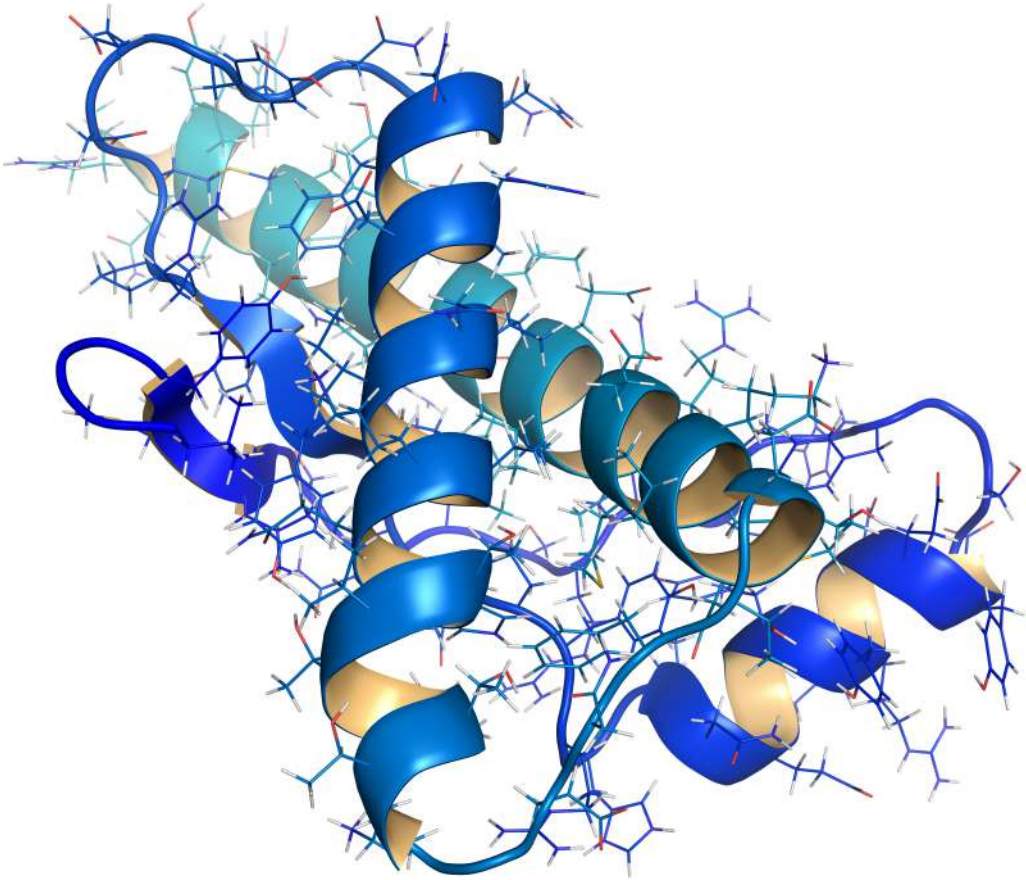
Almac Voice

Chemokines signal the future in the treatment of SARS-CoV-2 infection



Jennie Jamieson
Technopole Business Operations Manager

In a recent report1, researchers have described an ELISA (enzyme-linked immunosorbent assay) approach for the identification and quantification of antibodies that attach to a functional N-terminal loop area in human chemokines using plasma from heterogeneous cohort previously infected with SARS-CoV-2.



https://www.almacgroup.com/api-chemical-development/peptide-protein-technology/specialist-catalogue-peptides-for-research-use/

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The study employed peptides corresponding to the N-terminal loop of each chemokine and it was observed that following COVID-19 infection, autoantibodies targeting chemokines were present in the plasma samples, and that greater levels of certain anti-chemokine antibodies were linked to better illness outcomes:

- Autoantibodies to the chemokine C-X-C motif ligand 8 (CXCL8), CXCL5, and CCL25 were higher in SARS-CoV-2 patients with milder illness than those who needed hospitalisation
- Autoantibodies to three chemokines (CCL13, CXCL16, and CXCL21) were enhanced in individuals who were free from long covid symptoms one year following infection
- Anti-CCL22, CCL17, and CXCL19 antibodies were found to be present irrespective of illness severity
- CCL19 IgG autoantibodies were found early in the acute period
- The first human-stemmed monoclonal antibodies to four chemokines, including anti-CXCL16 and anti-CXCL13 antibodies, were discovered and found to be significant for long COVID symptoms

Given the role of chemokines such as CXCL8, CXCL5 and CCL25 in attracting cells such as neutrophils that stimulate tissue repair or the role of CCL13, CXCL16 and CXCL21 in activation of B and T lymphocytes, it is not surprising that antibodies to these chemokines could play a role in controlling the inflammatory response to SARS-CoV-2 and therefore decrease the likelihood of severe disease.

The study data has revealed which chemokine targeting antibodies were widespread following SARS-CoV-2 infection and linked to a favourable prognosis and further study of these antibodies may identify future therapies for lowering the potential for developing severe disease and/or long COVID.

Almac can offer reagents to enable your SARS-CoV-2 research. This includes full length human chemokines in the native, biotinylated or Alexa 647® labelled forms. We can also offer custom synthesis of other human chemokine products including peptides corresponding to the functional N-terminal loops of the proteins of interest.

1. Anti-chemokine antibodies after SARS-CoV-2 infection correlate with favorable disease course; Jonathan Muri, Valentina Cecchinato, Andrea Cavalli, Akanksha A. Shanbhag, Milos Matkovic, Maira Biggiogero, Pier Andrea Maida, Chiara Toscano, Elaheh Ghovehoud, Gabriela Danelon-Sargenti, Tao Gong, Pietro Piffaretti, Filippo Bianchini, Virginia Crivelli, Lucie Podesvova, Mattia Pedotti, David Jarrossay, Jacopo Sgrignani, Sylvia Thelen, Mario Uhr, Enos Bernasconi, Andri Rauch, Antonio Manzo, Adrian Ciurea, Marco Bruno Luigi Rocchi, Luca Varani, Bernhard Moser, Marcus Thelen, Christian Garzoni, Alessandra Franzetti-Pellanda, Mariagrazia Uguccioni, Davide F. Robbiani. bioRxiv preprint 2022, DOI: https://doi.org/10.1101/2022.05.23.493121, https://www.biorxiv.org/content/10.1101/2022.05.23.493121v1

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Contact us:

Global HQ
+44 (0) 28 3833 2200

US HQ
+1 (215) 660 8500

Ireland
+353 90 646 0200