

CORONASYS INNOVATION SHEET 16

TRIMODULIN

Background

Since the start of the SARS-CoV-2 pandemic much progress has been made very rapidly in researching possible treatments for Covid-19. Most therapeutics known today, like monoclonal antibody treatment or Remdesivir for example, seem to be most effective when administered in the early stages of the disease¹²³. With Trimodulin the manufacturer Biotest⁴ aims at developing a drug that benefits those most severely affected by Covid-19. The company announced that in the ESsCOVID (Escape from severe COVID-19) study the first seriously ill COVID-19 patient was treated with Trimodulin in Spain. In addition, the study was submitted for approval by the authorities in Russia, Brazil, and France.

Features

Trimodulin (IgM Concentrate) is an innovative immunoglobulin therapeutic derived from human blood plasma. Compared to pure immunoglobulin G preparations (IVIGs), Trimodulin contains IgM and IgA antibodies in addition to IgG. It is currently being developed by for the treatment of patients with severe community-acquired pneumonia (sCAP) or COVID-19 with severe disease progression. According to previous studies⁵⁶⁷, it works through a variety of mechanisms that could inhibit pathophysiological processes that could otherwise lead to severe respiratory disorders, severe sepsis, multi-organ failure and ultimately the death of the patient⁸. In the ongoing prospective, double-blind, placebo-controlled phase II trial 160 patients with severe Covid-19 are to be enrolled.

Potentials

If its efficacy is proven, the drug could contribute to the treatment of critically ill Covid-19 patients in later stages of the disease. The manufacturer expects a significant reduction of mortality and duration of ventilation⁹. Especially the IgM component in Trimodulin could reduce misdirected immune reactions and therefore possibly also help preventing patients from developing exacerbated symptoms of the disease¹⁰.

Points to consider

The study is not finished yet and it remains to be seen whether Trimodulin performs as well in Covid-19 patients as expected. If so, the manufacturer aims at applying for an expedited approval of Trimodulin by the European Medicines Agency (EMA)¹¹ which already worked together with Biotest by providing "Rapid Scientific Advice" in the planning phase of the study. But although the company's share price skyrocketed after the announcement that the first patient has been treated¹², the final proof of the drug's efficacy in critically ill Covid-19 patients is still pending.

Conclusion

The drug could not only contribute to the standard therapy for Covid-19 but might also be helpful in treating community-acquired pneumonia which is a significant public health risk beyond and in addition to the current pandemic¹³. But its effectiveness has yet to be proven and further research is needed.

State of information: 10/08/2020

Public announcement: October 2020

Country: Germany

Focus area: Treatment

Developers: Biotest AG

Beneficiaries: Patients with severe Covid-19

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- ¹ Deutsches Ärzteblatt. "COVID-19: Erstes Antikörperpräparat erzielt Schutzwirkung bei..." Deutsches Ärzteblatt, September 17, 2020. Accessed October 8, 2020. <https://www.aerzteblatt.de/nachrichten/116592/COVID-19-Erstes-Antikoerperpraeparat-erzielt-Schutzwirkung-bei-leichter-erkrankungen>.
- ² Ärzteblatt, Deutscher Ärzteverlag GmbH, Redaktion Deutsches. "COVID-19: Remdesivir erzielt bescheidene Wirkung bei Patienten ohne..." Deutsches Ärzteblatt, August 24, 2020. Accessed October 8, 2020. <https://www.aerzteblatt.de/nachrichten/115877/COVID-19-Remdesivir-erzielt-bescheidene-Wirkung-bei-Patienten-ohne-Sauerstoffbedarf>.
- ³ Müller, Celine: "Remdesivir Zur Inhalation?" DAZ.online, June 24, 2020. <https://www.deutsche-apotheker-zeitung.de/news/artikel/2020/06/24/remdesivir-zur-inhalation>.
- ⁴ Biotest AG. "Biotest at a Glance." biotest.com. Accessed October 8, 2020. https://www.biotest.com/de/en/company/biotest_at_a_glance.cfm.
- ⁵ EU Clinical Trials Register. "Clinical Trials Register - Search for CIGMA." clinicaltrialsregister.eu. Accessed October 8, 2020. <https://www.clinicaltrialsregister.eu/ctr-search/search?query=CIGMA>.
- ⁶ Welte, Tobias, R. Phillip Dellinger, Henning Ebelt, Miguel Ferrer, Steven M. Opal, Mervyn Singer, Jean-Louis Vincent, et al. "Efficacy and Safety of Trimodulin, a Novel Polyclonal Antibody Preparation, in Patients with Severe Community-Acquired Pneumonia: A Randomized, Placebo-Controlled, Double-Blind, Multicenter, Phase II Trial (CIGMA Study)." Intensive Care Medicine 44, no. 4 (2018): 438–48. <https://doi.org/10.1007/s00134-018-5143-7>.
- ⁷ Duerr, Celia, Annica Bacher, Angelika de Martin, Monika Sachet, Kambis Sadeghi, Suzann Baumann, Corina Heinz, and Andreas Spittler. "The Novel Polyclonal Ab Preparation Trimodulin Attenuates Ex Vivo Endotoxin-Induced Immune Reactions in Early Hyperinflammation." Innate Immunity 25, no. 6 (August 2019): 374–88. <https://doi.org/10.1177/1753425919853333>.
- ⁸ DAZ.online (cel) "Behandlung von Schwer Erkrankten COVID-19 Patienten Mit Trimodulin." DAZ.online, September 3, 2020. Accessed October 8, 2020. <https://www.deutsche-apotheker-zeitung.de/news/artikel/2020/09/03/behandlung-von-schwer-erkrankten-covid-19-patienten-mit-trimodulin>.
- ⁹ Biotest AG. "Press Detail Biotest AG: Biotest Treats First COVID-19 Patient with Trimodulin." biotest.com, October 6, 2020. https://www.biotest.com/de/en/investor_relations/news_and_publications/biotest_press_releases/press_detail.cfm?instance_ID=2768&cmfaction=xmlldetail.xmlldetail.detailview&showdetails=2034062.
- ¹⁰ PresseBox (c) 2002-2020. "Biotest behandelt ersten COVID-19 Patienten mit Trimodulin, Biotest AG, Pressemitteilung - PresseBox." Accessed October 8, 2020. <https://www.pressebox.de/inaktiv/biotest-ag/Biotest-behandelt-ersten-COVID-19-Patienten-mit-Trimodulin/boxid/1026186>.
- ¹¹ European Medicines Agency. "COVID-19: What's New." Text. European Medicines Agency, April 11, 2020. <https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/covid-19-whats-new>.
- ¹² Wallstreet online. "Trimodulin gegen schwere Covid-19-Fälle eingesetzt - Hoffnung..." wallstreet-online.de, October 6, 2020. <https://www.wallstreet-online.de/nachricht/13002368-biotest-aktie-trimodulin-schwere-covid-19-faelle-hoffnung/all>.
- ¹³ Prina, Elena, Otavio T Ranzani, and Antoni Torres. "Community-Acquired Pneumonia." Lancet (London, England) 386, no. 9998 (2015): 1097–1108. [https://doi.org/10.1016/S0140-6736\(15\)60733-4](https://doi.org/10.1016/S0140-6736(15)60733-4).

Background on Innovation Sheet Series

As part of a real-time evaluation of the SARS CoV 2 pandemic (with focus on epidemiological, medical, economical, societal, technical, and cultural developments in Germany and Armenia) the CoronaSys research team, under the leadership of Prof. Dr. Martin Voss, is conducting a continuous monitoring of developments and medical, technical, and social innovations concerning Covid-19.

Multiple national and international media outlets, research platforms, and scientific and organizational guidelines, briefs, and updates are screened to feed into this outlet. The rationale behind this is to support the projects' network partners in Armenia and Germany with short summaries of key developments and promising innovations that are shaping the global, German, and Armenian outbreak response and recovery.

The aim of these short briefs is to give condensed and structured information on selected innovations emerging out of the conducted horizon scanning. This could be mainstream big-ticket items or fringe subjects that are easily overlooked in the global flood of information. Some innovations will be followed through their evolution in time while others may only appear once. While subjectively selected, the briefs are descriptive in nature and leave analysis and critical interpretation to the reader. Network partners in both countries are invited to provide feedback on their interest areas and suggest particularly relevant topics for the CoronaSys Workshop series.

The CoronaSys Innovation Sheet Series is published by the [Academy of the Disaster Research Unit](#), which is, as a non-profit limited liability company, a spin-off of the [Disaster Research Unit](#) at the Free University of Berlin. The series is part of the research project "[CoronaSys](#): Addressing the corona pandemic in Armenia through systemic risk management", sponsored by the German Federal Ministry of Education and Research.

If you have any questions, suggestions, or if you wish to be taken on (or off) the project mailing list for CoronaSys updates, innovation sheets, and workshop invitations, please send a message to Janina Schäfer (schaefer@a-kfs.de). For general project inquiries, you may contact the team lead Sara Merkes (merkes@a-kfs.de) or the project lead Martin Voss (voss@a-kfs.de).

Previous CoronaSys Innovation Sheets

- 1 "New" Antiviral Face Masks
- 2 "Dyphox" Surface Coating
- 3 MOVES SLC Portable ICU
- 4 Portable TRI- KLEEN 500UV
- 5 Convalescent Plasma Therapy
- 6 ASIC- App
- 7 BinaxNOW Antigen Test
- 8 Corona Traffic Light
- 9 Aproof at Home Antibody Test
- 10 IVAT Hygiene Tower
- 11 LY-CoV555 Antibody Treatment
- 12 4C Mortality Score
- 13 Regional Corona Prediction Model
- 14 Computer-designed Mini- Proteins
- 15 Covid-19 Simulator

All previous CoronaSys Innovation Sheets are available online:

<http://coronasys.a-kfs.de/category/innovation-stream/>

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