

## **Marinomed Biotech AG publishes clinical data on efficacy of Carragelose lozenges against respiratory viruses including SARS-CoV-2 in the International Journal of General Medicine**

- Peer-reviewed publication of clinical data supporting that Carragelose lozenges may prevent viral infections and reduce viral transmission, including SARS-CoV-2
- Saliva obtained after consumption of only one Carragelose lozenge is able to inactivate highly infectious respiratory viruses
- Data generated in cooperation with University of Erlangen-Nuremberg
- Publication adds to the increasing evidence supporting the use of Carragelose against SARS-CoV-2
- Carragelose-based products for prevention and therapy of respiratory viral infections are available without prescription (OTC) in more than 40 countries worldwide

**Korneuburg, Austria, 09 September 2021** – Marinomed Biotech AG (VSE:MARI), an Austrian science-based biotech company with globally marketed therapeutics derived from innovative proprietary technology platforms, announced today that positive clinical data on the antiviral efficacy of Carragelose-containing lozenges have been published in the peer-reviewed journal *International Journal of General Medicine*. The open access paper can be accessed on the journal's website: [https://www.dovepress.com/articles.php?article\\_id=68558](https://www.dovepress.com/articles.php?article_id=68558). The study was conducted in collaboration with Prof. Ulrich Schubert, Chair for Clinical Virology at the Friedrich-Alexander University Erlangen-Nuremberg, Germany and his team and adds to the increasing amount of evidence showing effective inhibition of SARS-CoV-2 by Carragelose.

The clinical study investigated whether sucking of one Carragelose-containing (10 mg) lozenge would lead to sufficient iota-carrageenan concentrations in the saliva of 31 healthy subjects to neutralize seven human respiratory viruses that cause common colds as well as COVID-19. The resulting iota-carrageenan concentrations are many times higher than the concentrations needed to inhibit 90 % of viral replication (IC<sub>90</sub>) of all tested viruses. This indicates that the lozenges are an appropriate measure to reduce infection and potentially preventing severe illness as well as transmission within a population.

Specifically, the scientific paper shows that the sucking of one lozenge led to a Carragelose-concentration in saliva above the concentration required to inhibit 90 % of viral particles (IC<sub>90</sub>) for human Rhinovirus (HRV) 1a and 8, surpassing the previously published IC<sub>90</sub> values of 5 µg / ml for neutralization by more than a hundredfold (p < 0.001). The saliva obtained from study participants also showed significant antiviral efficacy against Coronavirus OC43, Influenza A nH1N1 2009, Coxsackie virus A10, and human Parainfluenza Virus Type 3 (p < 0.001 for all viruses).

SARS-CoV-2 could also be effectively inhibited by saliva obtained after consumption of one Carragelose lozenge. An analysis performed by Prof. Dr. Ulrich Schubert's group at the Friedrich Alexander University of Erlangen-Nuremberg, Germany showed that saliva

contained more than 100 times the amount of Carragelose necessary to inhibit SARS-CoV-2 in antiviral efficacy tests.

“Carragelose is broadly active against various respiratory viruses. In this study, we were able to demonstrate that after consuming one lozenge, the Carragelose concentration contained in saliva is more than 100 times higher than needed to efficiently inhibit SARS-CoV-2 replication in various cell lines. This suggests that the consumption of Carragelose lozenges forms a physical barrier on the mucosa, which traps the viruses based on their positive surface charge. This potentially reduces the viral load in an infected person and ultimately may help to prevent the spread of SARS-CoV-2 among, and ameliorate the disease in, individuals,” said **Prof. Dr. Ulrich Schubert, Chair for Clinical Virology at the Friedrich-Alexander University Erlangen-Nuremberg**, Germany and Marinomed’s cooperation partner.

“These results further confirm what we have seen in several recent studies, both conducted by us and independently: Carragelose is an effective tool against respiratory viruses, including SARS-CoV-2. We are glad that with the data published here we were able to confirm that Carragelose lozenges release multiple times more active compound than necessary to neutralize all tested viruses,” said **Dr. Eva Prieschl-Grassauer, Chief Scientific Officer at Marinomed**. “It has become increasingly clear that the current pandemic will not end abruptly, but rather is SARS-CoV-2 here to stay. In light of the emerging variants of concern it will be important to have multiple lines of defence against COVID-19. Carragelose has the potential to act as an additional measure alongside vaccines to help contain the pandemic and to protect people.”

Carragelose lozenges and nasal sprays are available in pharmacies without prescription through Marinomed’s worldwide distributor network. Carragelose has been well established to prevent respiratory infections by various viruses, including certain influenza and endemic Coronaviruses. More recently, Carragelose has been shown to effectively inactivate both wildtype and common variants of the new Coronavirus SARS-CoV-2, including the so-called P1 or gamma variant.<sup>1</sup> Clinical data from an independent study in Argentina had demonstrated an 80 % reduction in PCR-confirmed COVID-19 cases in hospital staff after Carragelose-treatment.<sup>2,3</sup>

#### **About Carragelose®:**

Carragelose® is a sulfated polymer from red seaweed and is a unique, broadly active anti-viral compound. It is known as a gentle yet effective and safe prevention and treatment against various viral respiratory infections. Several clinical and preclinical studies have shown that Carragelose® forms a layer on the mucosa which wraps entering viruses, thereby inactivates them and prevents them from infecting cells. Increasing clinical evidence indicates that Carragelose® also inactivates SARS-CoV-2.<sup>2,4</sup> Marinomed is the holder of the IP rights and has licensed Carragelose® for marketing in Europe, parts of Asia, Canada, and Australia. For a full list of Marinomed’s portfolio of Carragelose® containing nasal sprays and oral products, please visit <https://www.carragelose.com/en/portfolio/launched-products>, for a list of scientific publications on Carragelose®, please visit <https://www.carragelose.com/en/publications>.

## About Marinomed Biotech AG

Marinomed Biotech AG (Korneuburg, Austria) (VSE:MARI) is an Austrian science-based biotech company with globally marketed therapeutics listed on the Prime Market of the Vienna Stock Exchange. The company focuses on the development of innovative products based on two patent-protected technology platforms. The Marinosolv® technology platform increases the efficacy of hardly soluble compounds for the treatment of sensitive tissues such as eyes, nose, lung or gastrointestinal tract. The Carragelose® platform comprises innovative patent-protected products targeting viral infections of the respiratory tract and can reduce the risk of an infection with SARS-CoV-2. Carragelose® is used in nasal sprays, throat sprays and lozenges, which are sold via international partners in over 40 countries worldwide. Marinomed, Marinosolv® and Carragelose® are registered trademarks of Marinomed Biotech AG. These trademarks may be owned or licensed in selected locations only. Further information is available at <https://www.marinomed.com/en/technologies-markets/markets>.

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<sup>1</sup> <https://www.marinomed.com/en/news/marinomed-biotech-ag-announces-positive-data-demonstrating-carragelose-efficacy-against-sars-cov-2-variants>

<sup>2</sup> <https://www.marinomed.com/en/news/marinomed-biotech-ag-shares-positive-clinical-trial-results-for-iota-carrageenan-nasal-spray-in-the-prevention-of-covid-19-1>

<sup>3</sup> <https://milstein.conicet.gov.ar/la-eficacia-del-spray-nasal-con-carragenina-para-la-prevencion-del-covid-19-ha-dado-resultados-positivos/>

<sup>4</sup> <https://www.carragelose.com/en>

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