

# Carragelose

## Prophylaxis and therapy against allergic rhinitis

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# Executive summary: Carragelose allergy products

Two independent products for prophylaxis and therapy of allergic rhinitis

## Business model

- Open for partnering in classical license deal and/or distribution deal

## Market opportunity

- Fast growing allergy market (\$36bn)<sup>1</sup>
- Two independent products for prophylaxis and therapy

## Carragelose

- Sulfated polymer
- High molecular weight
- Allergen-blocking properties

**Patent-protected until 2036**

## Safety

- Excellent safety profile
- Proven intranasal tolerability

## Established finished products

- Preservative free formulation
- Aseptic process
- Multidose container

## Clinically proven

- Prophylaxis: Reduces allergic symptoms
- Therapy with decongestant medical device: relief of blocked nose



## Medical Device

- Class Is / I (93/42/EEC)
- Transition to MDR on track as medical devices class IIa
- Transition period until 2028





# Marinomed at a glance

Publicly listed biopharmaceutical company located in the Vienna region

**2006**

Foundation

**2008**

Launch of Carragelose

**2016**

Invention of  
Marinosolv

**2019**

IPO and Marinosolv  
clinical validation

**2021**

Marinosolv deal and  
Solv4U launch

**2022**

Deal with  
Procter & Gamble



**Prime Market Segment of the Vienna Stock Exchange**

MARI:AV; ATMARINOMED6; MARI.VI

## Therapeutic areas

### VIROLOGY

Revenue-generating  
OTC portfolio

### IMMUNOLOGY

High-value  
products in late-  
stage development

**Solv4U**

Solubilization technology  
partnerships for customers



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# Pipeline

Including late-stage projects with low risk and high upside potential

## Pharmaceutical Products

Therapeutic area	Product Indication	Status	Pre-clinical	Phase I	Phase II	Phase III	Filing
IMMUNOLOGY	<b>MAM-1004-1/Budesolv</b> Treatment of severe allergic rhinitis	Filing in preparation	<div></div>	<div></div>	<div></div>	<div></div>	
	<b>MAM-1003-1/Tacrosolv</b> Severe inflammatory eye diseases	Phase II clinical study	<div></div>	<div></div>	<div></div>		
	<b>MAM-1004-2</b> Autoimmune gastritis	Pre-clinical	<div></div>				
VIROLOGY	<b>MAM-2001-1/Carravin</b> Nasal congestion	Filing in progress	<div></div>	<div></div>	<div></div>	<div></div>	

## OTC Medical Devices

Therapeutic area	Product Indication	Status	Pre-clinical	Clinical studies	Certification
IMMUNOLOGY	<b>MAM-1001-4 nasal spray</b> Prophylaxis of mild allergic rhinitis	Pre-launch	<div></div>	<div></div>	
	<b>MAM-1001-3 eye drops</b> Dry, irritated eyes	Pre-launch	<div></div>	<div></div>	
VIROLOGY	<b>MAM-1001-1/Inhaleen</b> Viral pneumonia	Clinical studies	<div></div>	<div></div>	



# Carragelose®

Protective layer against viruses and allergens – multi-use potential

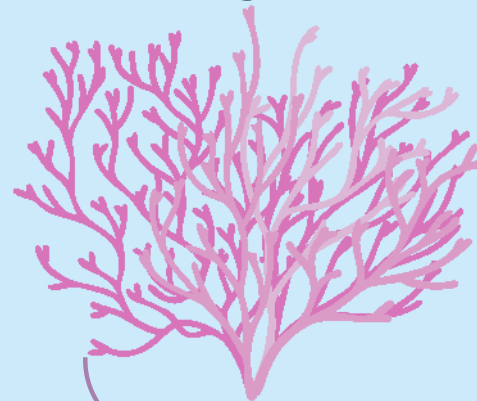
CCA<sup>2</sup> market  
volume:  
US\$ 36 bn<sup>3</sup>

## Viral respiratory diseases

- Broadly-active against numerous respiratory viruses
- Clinically validated<sup>1</sup>
- Marketed product portfolio in 40+ countries



## Carragelose



## Allergy

- Carragelose nasal spray clinically effective in reducing allergic symptoms in the nose<sup>1</sup>
- Carragelose/Sorbitol combi shows significant decongestant effect in clinical trial<sup>1</sup>

Cold  
market  
volume:  
US\$ 10bn<sup>5</sup>

## Eye care



- Carragelose has excellent moisturizing and mucoadhesive properties
- Eye drops: relief for dry eyes
- Active against several Adenoviruses<sup>4</sup>: prospective treatment for adenoviral keratoconjunctivitis

Allergy  
market  
volume:  
US\$ 5.7bn<sup>3</sup>

Eye care  
market  
volume:  
US\$ 6bn<sup>6</sup>



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<sup>1</sup> Publications available at: <https://www.marinomed.com/en/news/scientific-publications>

<sup>2</sup> CCA = Cough, cold & allergy

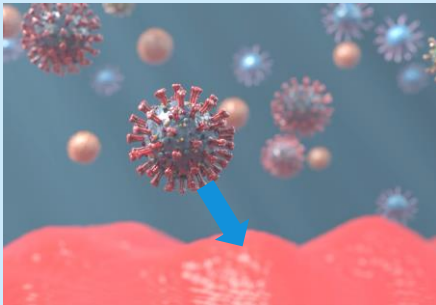
<sup>3</sup> CHC Yearbook 2023, Nicolas Hall

<sup>4</sup> Marinomed internal data

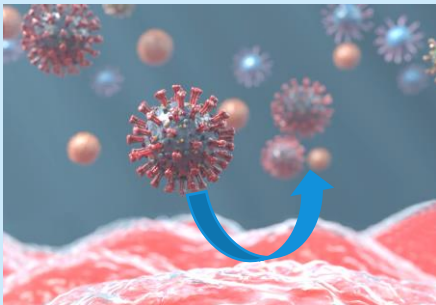
<sup>5</sup> Target market volume: 28% of total CCA market (topical decongestants, sore throat) as depicted in CHC Yearbook 2023, Nicolas Hall

<sup>6</sup> Target market volume: 19% of total CCA market (allergy) as depicted in CHC Yearbook 2023, Nicolas Hall

# Carragelose mode of action and benefits



**Without iota- carrageenan:**  
Virus / allergens interact  
with mucosal cell



**With iota-carrageenan:**  
Barrier prevents interactions  
of viruses and allergens

## Mode of action<sup>1</sup>

- Carragelose non-specifically covers the mucosal surface and prevents binding of virus/allergen to the mucosa, thereby reducing the immune response without being pharmacologically active
- Newly synthesized virus particles released by already infected cells are also entrapped in the layer, resulting in an inhibition of viral spread
- Carragelose is mucoadhesive and lubricating

## Carragelose (iota-carrageenan): effective, safe & patent protected

- Carragelose acts as active ingredient in Marinomed's Carragelose product line
- Favourable safety profile established in several clinical studies in >1000 participants and also proven in post market surveillance data (<1 adverse events/100.000 sold units)
- Global patent protection, with a SARS-CoV-2 patent submitted in 2020

**Broadly effective against viruses and allergens with a high safety profile**



# Carragelose, Virus and Allergen Blocker

Safe and effective active ingredient to protect the mucosa from allergens

- Carragelose is iota-carrageenan derived from red seaweed in pharmaceutical quality
- Carragelose protects the nasal mucosa from contact with allergens; hyperosmolar Carragelose product reduces nasal congestion; both confirmed in clinical trials in the indication allergic rhinitis
- Carragelose is the active ingredient of multiple marketed products in the indication common cold
- The use of Carragelose is patent protected by several patent families
- Additional IP exists with respect to preclinical and clinical data, production know-how, stability data
- Favourable safety profile – may be used in children from one year up, and by pregnant and breastfeeding women (GRAS status with the FDA)





# Allergic rhinitis nasal spray

Provides symptomatic relief in mild and moderate allergic rhinitis



## Product characteristics:

- Regulatory status: medical device class I (EU), application for MDR (class IIa) transition period until latest May 2024
- Legal manufacturer: MoNo chem-pharm Produkte GmbH, Vienna (MDR certified)
- Notified body: TÜV Süd, Munich, Germany
- **1.2 mg/ml Carragelose®**, buffer system
- Volume: 20 ml, 140µl solution per puff
- Application:
  - **Prevention:** 3 x daily one puff per nostril
  - **Therapy:** increase of use at the first signs of common cold; no limitations applicable
- Use for adults and children 1y+ (EU)

Preservative-free

## Proposed Claims in EU:

- Symptomatic treatment in the indication allergic rhinitis
- May be used prophylactically
- Serves to moisten the nasal mucous membrane when it is dry or irritated.
- Can be used for the prophylaxis and supportive treatment of all complaints resulting from dry and irritated nasal mucosa.

Target market volume: US\$ 5.7 bn<sup>1</sup>



# Allergen blocking decongestant nasal spray

Provides symptomatic relief in both, allergic and infectious rhinitis



## Product characteristics:

- Regulatory status: medical device class Is (EU, MDD), application for MDR (IIa) by end of 2023; valid CE mark under transition period until 2028 (MDD)
- Legal manufacturer: Hälsa Pharma GmbH, Lübeck (MDR certified)
- Notified body: Medcert Lübeck, Germany
- **1.2 mg/ml Carragelose®, 0.4 mg/ml kappa-Carrageenan, Sorbitol**
- Volume: 20 ml, 140 µl solution per puff
- Application:
  - **Prevention:** 3 x daily one puff per nostril
  - **Therapy:** increase use at the first signs of rhinitis; no limitations applicable
- Use for adults and children 1y+ (GRAS status with the FDA)

Preservative-free

Target market volume: US\$ 9bn<sup>1</sup>

## Authorized Claims in EU:

- Provides relief of nasal congestion associated with allergic and non-allergic rhinitis
- Serves to moisten the nasal mucous membrane when it is dry or irritated. Can significantly reduce symptoms
- Can be used for the prophylaxis and supportive treatment of all complaints resulting from dry and irritated nasal mucosa



# Carragelose – clinical trials overview

Trial	Subjects	Indication	Published	Supports claims
Cardiff	35	Common cold	yes	yes
Children's trial	153	Common cold	yes	yes
Adult's trial	211	Common cold	yes	yes
BI Trial	200	Common cold	yes	yes
Lozenge trial	27	Sore throat	yes	yes
Allergy trial	42	Allergic rhinitis	yes (preprint) <sup>1,2</sup>	yes
Decongestant trial	41	Nasal congestion	yes <sup>3</sup>	yes
2 SARS-CoV-2 nasal	70+66	Prophylaxis SARS-CoV-2	no	no infection
SARS-CoV-2 inhalation	15	Treatment SARS-CoV-2	no	yes, safety
Pooled analysis	254	Common cold	yes	yes
Observational study I	44	Common cold	no	yes
Observational study II	150	Common cold	Yes	yes

**>1000 patients enrolled in 12 international clinical trials**



<sup>1</sup><https://www.medrxiv.org/content/10.1101/2023.10.19.23297206v11>

<sup>2</sup>[https://www.marinomed.com/fileadmin/01\\_Marinomed/05\\_News/02\\_Scientific\\_Publications/01\\_Tabs/01\\_Immunology\\_Marinomed/Unger-Manhart\\_Poster\\_Callergin.pdf](https://www.marinomed.com/fileadmin/01_Marinomed/05_News/02_Scientific_Publications/01_Tabs/01_Immunology_Marinomed/Unger-Manhart_Poster_Callergin.pdf)

<sup>3</sup>[https://www.marinomed.com/fileadmin/01\\_Marinomed/05\\_News/02\\_Scientific\\_Publications/01\\_Tabs/01\\_Immunology\\_Marinomed/Unger-Manhart\\_Poster\\_COA\\_01.pdf](https://www.marinomed.com/fileadmin/01_Marinomed/05_News/02_Scientific_Publications/01_Tabs/01_Immunology_Marinomed/Unger-Manhart_Poster_COA_01.pdf)

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