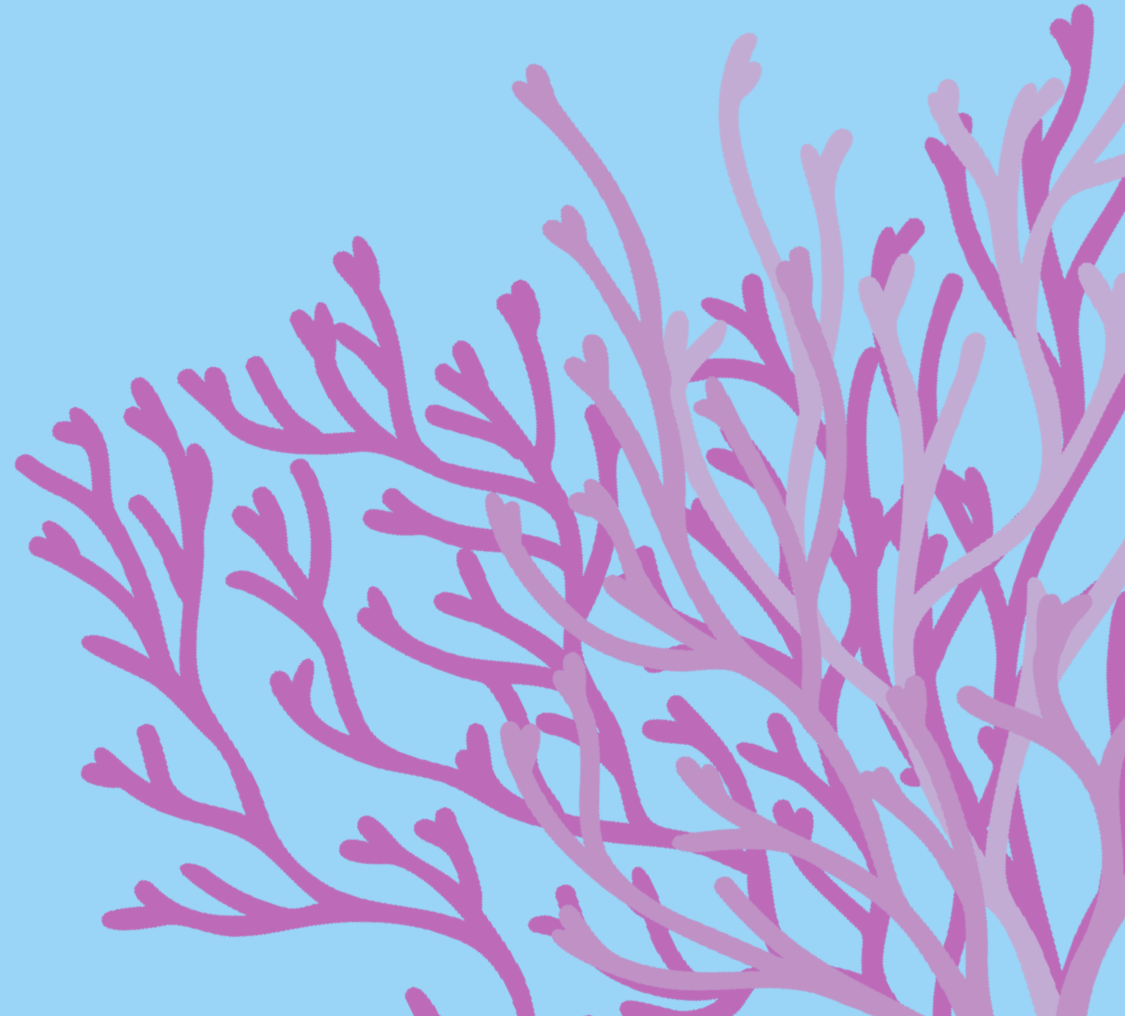


Carragelose[®]

Business Development

November 2023



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Virus- and allergen-blocking Carragelose®

Profitable medical device product portfolio with untapped growth potential

Deal opportunity

- Always open to partnering discussions for products and countries not yet contracted

Market opportunity

- Tapping into multi-billion Euro markets such as Cough & Cold (\$10bn)¹, Allergy (\$5.7bn)¹ and Dry eyes (\$6bn)¹

Carragelose®

- Causative treatment against respiratory viral infections
- Virus & allergen-blocking and hydrating properties

Patent-protected

- Portfolio of patents with protection up to 2041

Safety

- Excellent safety profile
- Proven intranasal, ocular, and lung tolerability

Established finished products

- Preservative free formulations
- Aseptic process
- Know-how protected manufacturing

Clinically proven

- Clinical studies with a total of more than 1,000 patients support claims



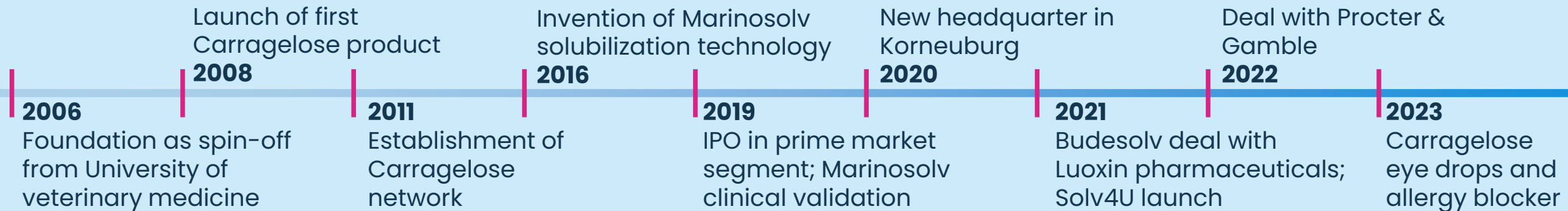
Medical Device

- Class IIa and Is (93/42/EEC)
- Transition to MDR on track (all products transitioning to Iia and Iib)
- Transition period until 2028



Marinomed at a glance

Publicly listed biopharmaceutical company located in Korneuburg, Austria



Therapeutic areas

VIROLOGY

Revenue-generating OTC portfolio

IMMUNOLOGY

High-value products in late-stage development

Solv4U

Solubilization technology partnerships for customers



Carragelose®

Protective layer against viruses and allergens – multi-use potential

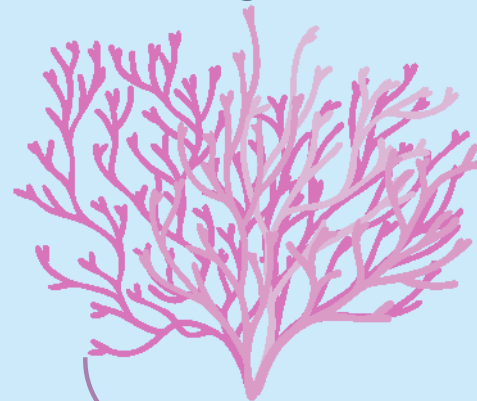
CCA² market
volume:
US\$ 36 bn³

Viral respiratory diseases

- Broadly-active against numerous respiratory viruses
- Clinically validated¹
- Marketed product portfolio in 40+ countries



Carragelose



Allergy

- Carragelose nasal spray clinically effective in reducing allergic symptoms in the nose¹
- Carragelose/Sorbitol combi shows significant decongestant effect in clinical trial¹

Cold
market
volume:
US\$ 10bn⁵

Eye care



- Carragelose has excellent moisturizing and mucoadhesive properties
- Eye drops: relief for dry eyes
- Active against several Adenoviruses⁴: prospective treatment for adenoviral keratoconjunctivitis

Allergy
market
volume:
US\$ 5.7bn³

Eye care
market
volume:
US\$ 6bn⁶



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

² CCA = Cough, cold & allergy











³ CHC Yearbook 2023, Nicolas Hall

⁴ Marinomed internal data

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

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

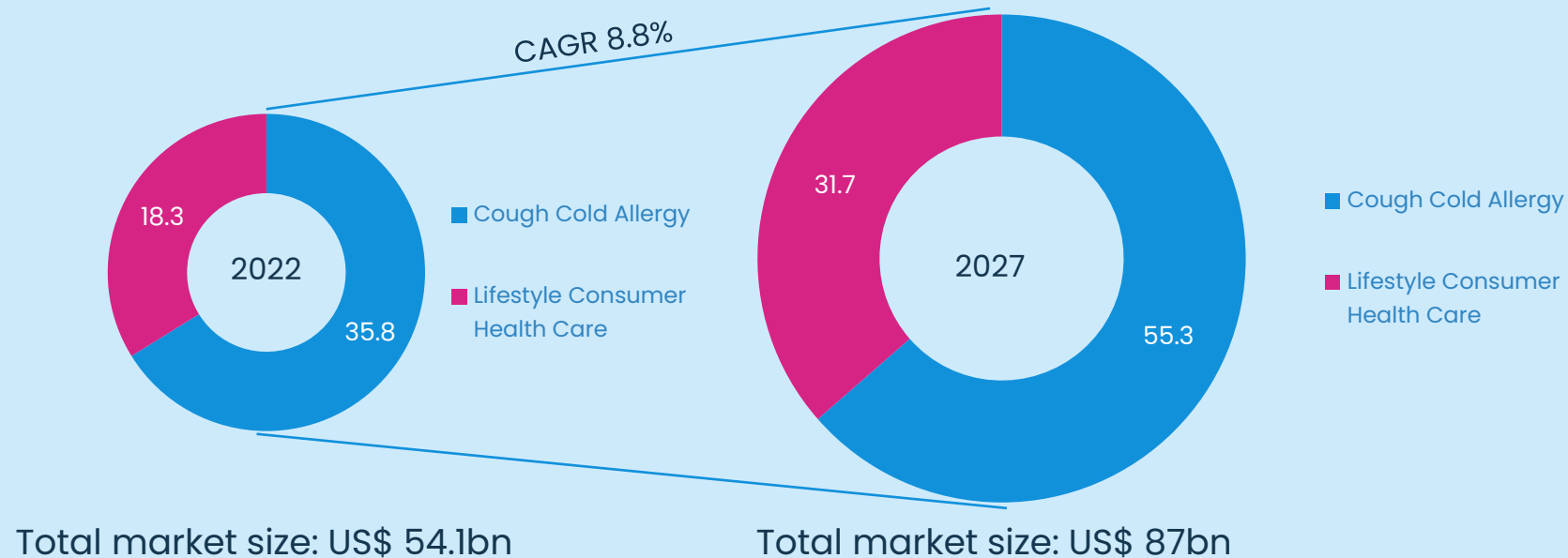
Carragelose – Product portfolio overview

Product	Launch	Active ingredients	Claims
 Nasal spray for adults and children 1y+	2008	1.2 mg/ml Carragelose	Prophylactic and supportive treatment of viral infections of the respiratory tract
 Nasal spray for children 1y+	2012	1.2 mg/ml Carragelose	
 Nasal spray for adults and children 1y+	2013	1.2 mg/ml Carragelose + 0.4 mg/ml Kappa-Carrageenan	
 Lozenges for adults and children 6y+	2015	10 mg Carragelose/Lozenge	Prophylactic and supportive treatment of viral infections of the respiratory tract & moistening of the mouth and throat
 Throat spray for adults and children 1y+	2016	1.2 mg/ml Carragelose	
 Nasal spray for adults and children 1y+	2018	1.2 mg/ml Carragelose + 0.4 mg/ml Kappa-Carrageenan + 7% Sorbitol	Prophylactic and supportive treatment of viral infections of the respiratory tract; decongestant effect; anti-allergic
 Nasal and throat spray for adults and children 1y+	2021	1.2 mg/ml Carragelose	Prophylactic treatment of viral respiratory infections
 Nasal spray for adults and children 1y+	2024*	1.2 mg/ml Carragelose	Forms a protective layer on the nasal mucosa that acts as physical barrier against allergens
 Eye drops	2024*	3.2 mg/ml Carragelose	Lubricating and protective
 Inhalation solution	tbc	Carragelose	To be confirmed



Carragelose target markets¹ grow fast

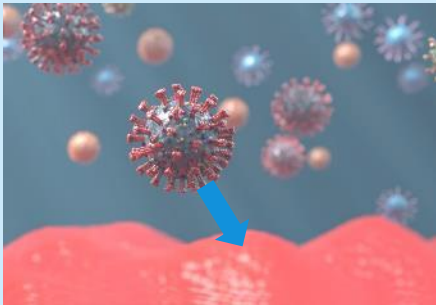
Carragelose belongs to the OTC markets cough, cold, and allergy as well as lifestyle consumer health care



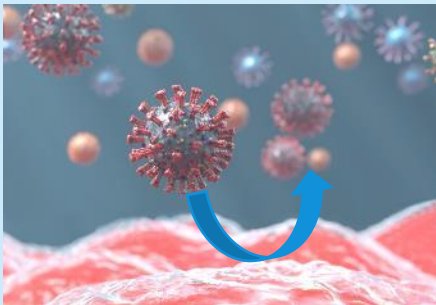
Huge markets with growth potential above average



Carragelose mode of action and benefits



Without iota- carrageenan:
Viruses / allergens interact
with mucosal cell



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

Mode of action¹

- Carragelose non-specifically covers the mucosal surface and prevents binding of viruses/allergens 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 lubricating

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

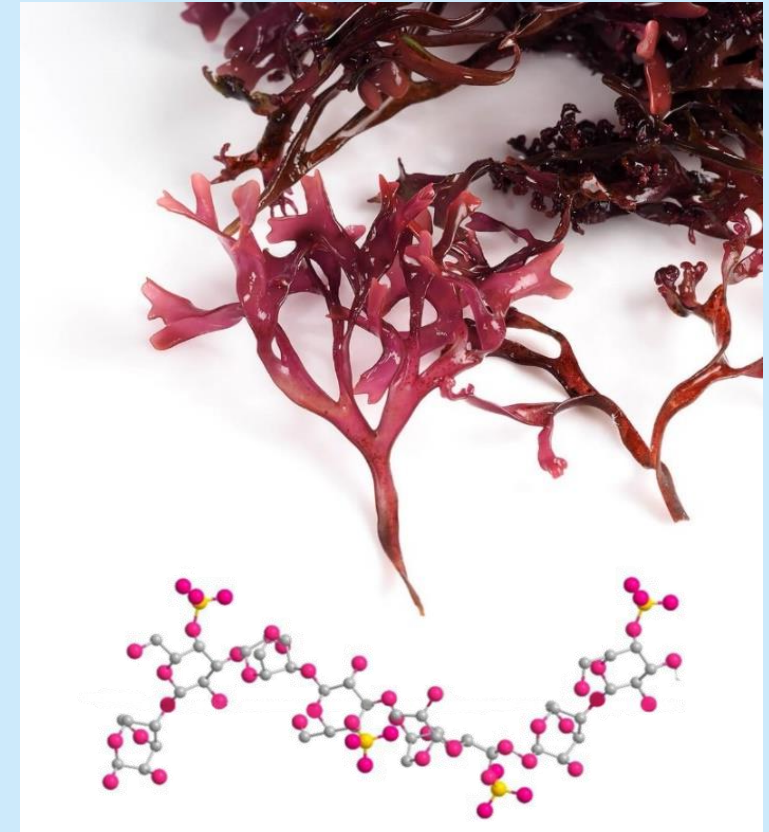
- Carragelose acts as active ingredient in Marinomed's Carragelose product line
- Favourable safety profile established in several clinical studies in >1000 participants and also proven in post market surveillance data (<1 adverse events/100.000 sold units)
- Global patent protection, with a SARS-CoV-2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

Broadly effective against viruses and allergens with a high safety profile



Carragelose targets Viruses and Allergens

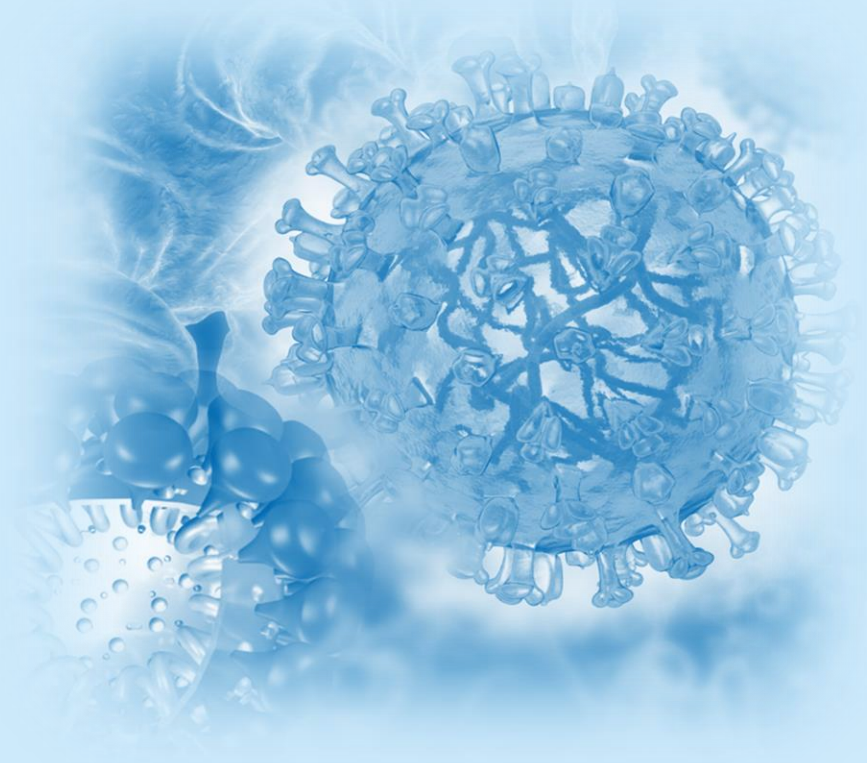
- Carragelose is iota-carrageenan derived from red seaweed in pharmaceutical quality
- Carragelose is clinically proven to block viruses and allergens
- Carragelose is the active ingredient of multiple marketed products in the indication a common cold and allergy
- Carragelose is a new opportunity to treat dry eye disease
- Carragelose has the potential to be the first product targeting adenoviral keratoconjunctivitis
- 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)



Carragelose® – Broadly active virus blocker

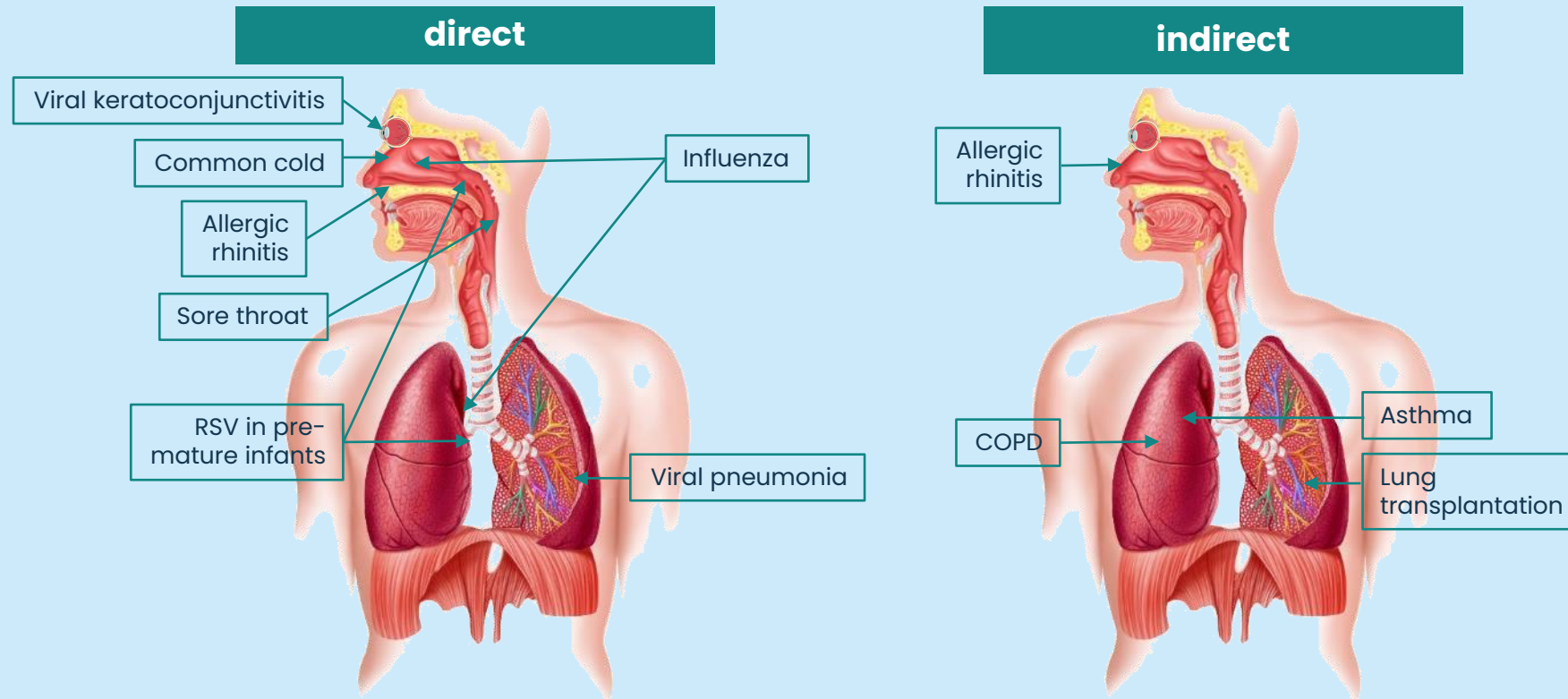
These viruses infect the respiratory tract and may worsen diseases such as COPD

Virus type	In-vitro data	In-vivo data	Clinical data
Corona virus (OC43, 229E)	✓		✓
SARS-CoV-2	✓		✓
Rhinovirus A and B	✓		✓
Influenza A virus: human pathogenic	✓	✓	✓
Influenza A virus: bird flu	✓	✓	
Influenza B virus	✓		✓*
Respiratory syncytial virus	✓	✓	✓*
Parainfluenza virus	✓		✓*
Metapneumovirus			✓*
Adenovirus 2, 8, 19, 32, 37, 50	✓		
Coxsackievirus A10	✓		



From common cold to viral pneumonia and KCT¹

Direct and indirect indications caused or affected by respiratory viruses



Respiratory viruses are the cause of a broad spectrum of diseases and worsen chronic illnesses



Carragelose – clinical trials

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) ^{1,2}	yes
Decongestant trial	41	Nasal congestion	yes ³	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



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

²https://www.marinomed.com/fileadmin/01_Marinomed/05_News/02_Scientific_Publications/01_Tabs/01_Immunology_Marinomed/Unger-Manhart_Poster_Callergin.pdf

³https://www.marinomed.com/fileadmin/01_Marinomed/05_News/02_Scientific_Publications/01_Tabs/01_Immunology_Marinomed/Unger-Manhart_Poster_COA_01.pdf

Common cold nasal spray

Carragelose® containing nasal spray

Brand examples



Product characteristics:

- Regulatory status: medical device class IIa (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®**
- 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
- For adults and children 1y+

Preservative-free

Authorized Claims in EU:

- Is indicated for the prophylaxis and supportive treatment of viral infections of the upper respiratory tract
- Can reduce the resurgence of virus-related symptoms of common cold
- Can shorten the duration of common cold and alleviate the severity of cold symptoms
- Can be used additionally for the preventive and sustainable moistening of the nasal mucosa and thus for the prophylaxis and supportive treatment of all complaints resulting from dry and irritated nasal mucosa

Target market volume: US\$ 3.24 bn²



Common cold nasal spray for small children

Carragelose[®] containing nasal spray

Brand examples



Product characteristics:

- Regulatory status: medical device class IIa (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[®]**
- Volume: 20 ml, 50µl 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
- For children 12+ months (EU)

Preservative-free

Authorized Claims in EU:

- Is indicated for the prophylaxis and supportive treatment of viral infections of the upper respiratory tract
- Can reduce the resurgence of virus-related symptoms of common cold
- Can shorten the duration of common cold and alleviate the severity of cold symptoms
- Can be used additionally for the preventive and sustainable moistening of the nasal mucosa and thus for the prophylaxis and supportive treatment of all complaints resulting from dry and irritated nasal mucosa

Target market volume: US\$ 3.24 bn²



Nasal spray against flu-like illness

Nasal spray containing Carragelose® and kappa-Carrageenan

Brand examples



Product characteristics:

- Regulatory status: medical device class IIa (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**
- 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 flu-like illness; no limitations applicable
- Adults and children 1+, pregnant and breastfeeding women

Preservative-free

Authorized Claims in EU:

- Can shorten the duration and severity of flu-like symptoms. Can significantly shorten the duration of disease.
- Can reduce the resurgence of virus-related symptoms of a flu-like illness.
- 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.

Target market volume: US\$ 3.24 bn²



Common cold lozenges

Carragelose® containing lozenges

Brand examples



Product characteristics:

- Regulatory status: medical device class IIa (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
- **10 mg Carragelose®** per lozenge
- Approved for adults and children 6y+ (EU)
- Honey lemon flavor

Sugar-free

Authorized Claims in EU:

- Can be used for the prevention and supportive treatment of common cold and flu-like illnesses and serve to moisten the lining of the mouth and throat
- For prevention and supportive treatment of viral infections of the upper respiratory tract
- For moistening the mouth and throat in the case of dry breathing air, cough or hoarseness for example
- For prevention and supportive treatment of all complaints resulting from a dry and/or irritated oral and pharyngeal mucosa

Target
market
volume:
US\$ 6.84 bn¹



Common cold throat spray

Carragelose® containing throat spray

Brand examples



Product characteristics:

- Regulatory status: medical device class IIa (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®**
- Volume: 20 ml
- Adults and children 1+, pregnant and breastfeeding women
- No risk for children of swallowing compared to lozenges
- Cherry flavor

Preservative-free

Authorized Claims in EU:

- For prevention and supportive treatment of viral infections of the upper respiratory tract
- For moistening of the oral and pharyngeal mucosa in case of e.g. cough, hoarseness or dry breathing air
- For the prevention and supportive treatment of all complaints resulting from dry or irritated oral and pharyngeal mucosa caused by e.g. smoking, long speaking or singing

Target market volume: US\$ 6.84 bn¹



Decongestant nasal spray

Nasal spray containing Carragelose®, kappa-Carrageenan and sorbitol

Brand examples



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, 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

Authorized Claims in EU:

- Provides relief from nasal congestion associated with common cold, flu-like diseases, sinusitis, allergic and non-allergic rhinitis
- Can shorten the duration and severity of flu-like symptoms. Can significantly shorten the duration of disease.
- Can reduce the resurgence of virus-related symptoms of a flu-like illness.
- 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.

Target market volume: US\$ 3.24 bn²



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¹also available in HDPE

²Target market volume: 9% of total cough, cold and allergy market (topical decongestants) and as depicted in CHC Yearbook 2023, Nicolas Hall

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 bn¹



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\$ 9bn¹

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 eye drops



Product characteristics:

- Regulatory status: medical device class IIa (MDD), IIb (MDR)
- Legal manufacturer: Hälsa Pharma GmbH, Lübeck (MDR certified)
- Notified body: Medcert Lübeck, Germany
- **3.2 mg/ml Carragelose®**
- Volume: 10 ml
- **Prophylaxis and Therapy:** proposed dose 3 x daily, up to 8 x daily
- for adults and children 6y+

Authorized Claims in EU and product characteristics:

- Carragelose eye drops are used for the relief of symptoms due to dryness of the eye.
- Carragelose eye drops are an ophthalmic solution, which forms a protective barrier on the ocular surface, this moisture film supports the body's natural defense mechanisms.
- Carragelose eye drops can be used as lubricant to prevent further irritation or to relieve dryness of the eye.
- Carragelose eye drops protect against excessive tear evaporation.
- Carragelose eye drops can be used during the day as they do not cause blurred vision.
- Carragelose eye drops can be used from age 6 years onwards

Preservative-free

Target market volume: US\$ 6 bn¹



Carragelose inhalation solution

Treatment for respiratory lung infections



Product characteristics:

- Regulatory status: medical device class IIb (MDR)
- **Carragelose® concentration dependent on the device**
- Volume: dependent on the device
- **Prophylaxis and Therapy:** up to 5 mg daily
- for adults and children 6y+

Preservative-free

Product characteristics

- Viral pneumonia is a difficult to treat disease
- Carragelose as broad-spectrum virus-blocking agent may serve as first-line option to treat respiratory viral infections via inhalation
- Safety of inhaled Carragelose was established in rats
- Patients treated with inhaled Carragelose (N=8) did not show adverse events
- Different devices for nebulizing were successfully tested

Target
market
volume:
US\$ 1.1 bn²



Carragelose partnerships evolving

Four Marinomed partners were recently acquired by powerful companies



2022



Australia



2022



Canada



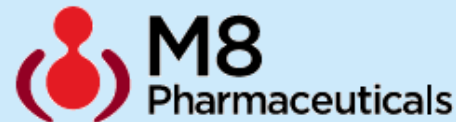
2023



South East Asia, MENA



2023

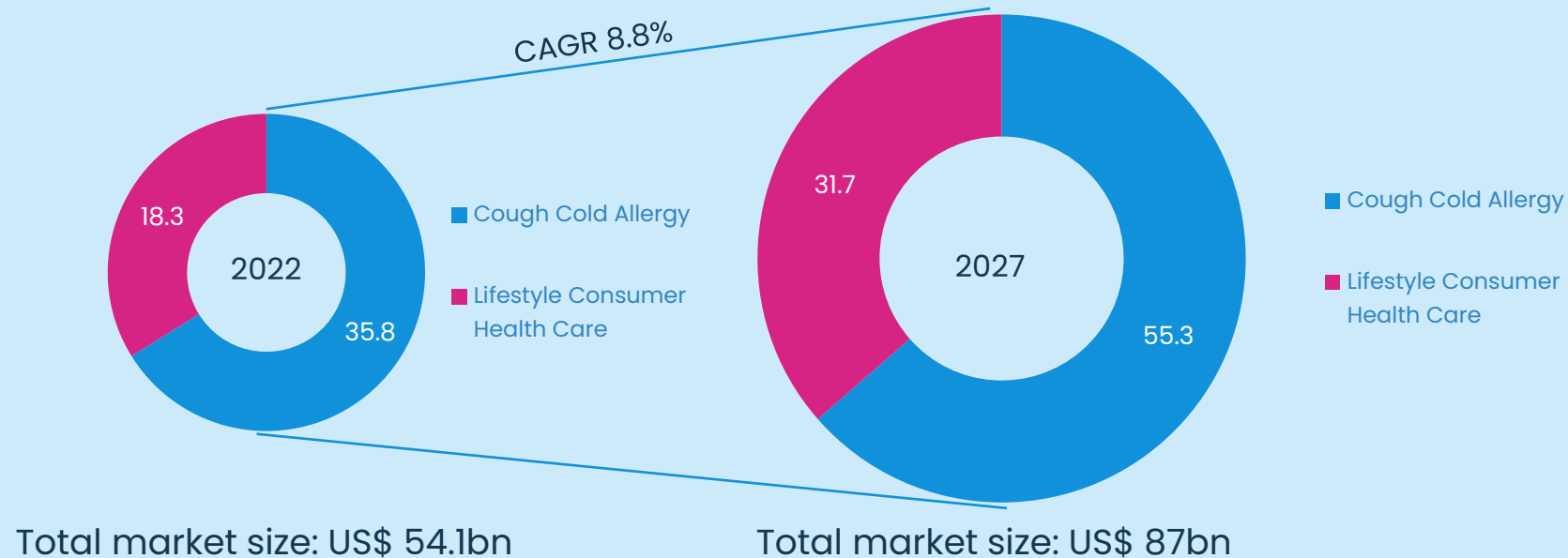


Brazil, Mexico



Carragelose target markets¹ grow fast

Carragelose belongs to the OTC markets cough, cold, and allergy as well as lifestyle consumer health care

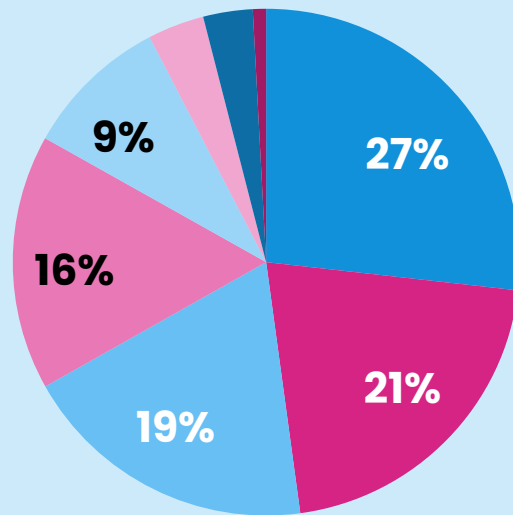


Huge markets with growth potential above average



The global cough cold allergy (CCA) market

Carragelose target market – global brands and local stars



- Sys. Cold & Flu
- Sore Throat & med. confectionary
- Top. Decongestants
- Chest rubs & inhalants
- Cough
- Allergy
- Sys. Decongestants
- Asthma remedies

- CCA market volume amounts to US\$ 35.8bn in 2022 and will grow to **US\$ 55.3bn** by 2027.
- Carragelose CCA products fall into 4 categories: topical decongestants, allergy, sore throat & inhalations
- With 16% market share, allergy represents a big opportunity that is currently not addressed

Carragelose is a trailblazer of a new category of virus and allergen blockers



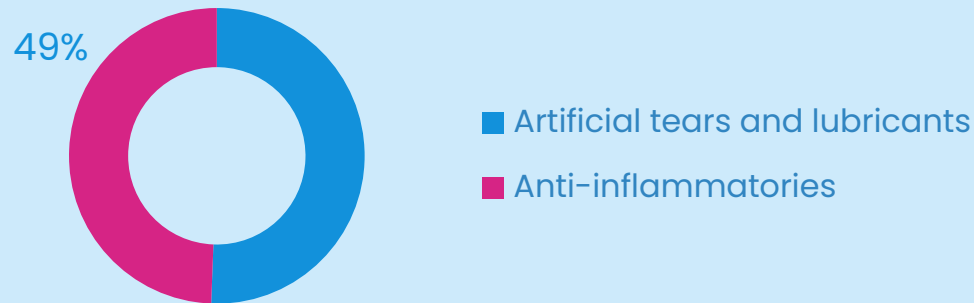
Dry eye disease market

Carragelose eye drops target market, a fast-growing multi-billion Dollar market

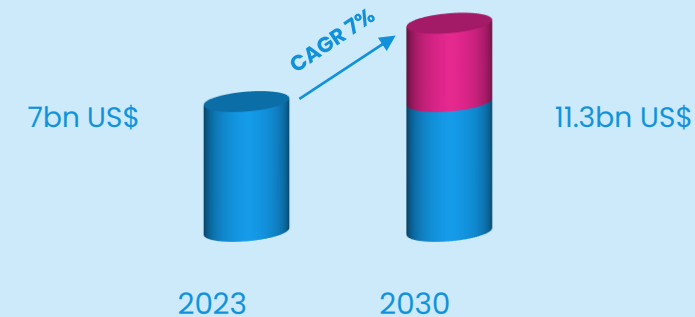
- Caused by either reduced production of tears or an increased evaporation of tears
- Symptoms: dryness, irritation, redness, fatigued eyes, and blurred vision
- Affects 360mn people with increasing prevalence due to growing use of screens and contact lenses increase in LASIK surgeries
- Up to 30% of the population is affected to some degree

- Markets expected to increase to **\$11.3bn** in 2027
- Largest market is the **US with \$3.1bn** in 2022
- Growth returning to pre-pandemic levels **CAGR 7%**
- Growth driven by huge **unmet medical need** and new products
- **Competitors:** Lubricants and pharmaceuticals

Global dry eye disease market share by product, 2019



Global dry eye disease market



Strategic intellectual property (IP) protection

Patents: 6 patents and two trademarks

European medical device registrations are owned by Marinomed

- Switch from MDD¹ to MDR² on track
- New MDR regulation favors high quality dossiers with clinical data

Additional IP

- Proprietary data packages including pre-clinical and clinical data
- Established production and stability of the products



www.marinomed.com
www.carragelose.com

Contact: bd@marinomed.com

