

ENZYMATICA AB (PUBL)

# 2017 Annual Report

 enzymatica

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Sid 14. ColdZyme studies in 2017

*The picture shows a schematic image of a cold virus. In 2017, Enzymatica conducted an in vitro study that showed that ColdZyme deactivates the majority of known virus types that cause colds.*



# The year in brief

## Important events in 2017

### First quarter

- » February: Enzymatica enters into an exclusive distribution agreement with STADA Arzneimittel AG for the German market.

### Q2

- » April: The distribution agreement with STADA is expanded to include the Austrian and Belgian markets.
- » April: The Annual General Meeting authorized the Board to resolve on the issuance of a maximum of 9,000,000 shares to take advantage of future opportunities, acquire long-term strong owners and further finance the Company's growth strategy.
- » April: The Annual General Meeting resolves to implement 2017/2023 Employee Warrant Plan I, which will be offered by the Board to selected individuals.
- » June: Enzymatica receives its largest order to date, totaling about SEK 12 million, for ColdZyme® Mouth Spray (co-brand ViruProtect®) from the German pharmaceutical company STADA for the German, Belgian and Austrian markets.
- » June: A study of elite athletes shows that ColdZyme provides protection as evidenced by fewer sick days and lost training days, as well as improved quality of life.

### Q3

- » July: Enzymatica recruits Johan Lindvall to serve as Chief Operating Officer with responsibility for production, logistics and product development.
- » July: Enzymatica recruits Claus Egstrand to serve as Chief Commercial Officer with responsibility for developing Enzymatica's international business with a focus on distributor agreements and in the long term, new product launches.
- » September: Enzymatica recruits Therese Filmersson to serve as the new Chief Financial Officer with responsibility for finances, HR, IT and legal affairs.

### Q4

- » October: ColdZyme publishes an observation study showing that ColdZyme reduces sick leave among preschool staff.
- » October: Enzymatica presents the complete published article from the COLDPREV I study of ColdZyme in the Open Journal of Respiratory Diseases

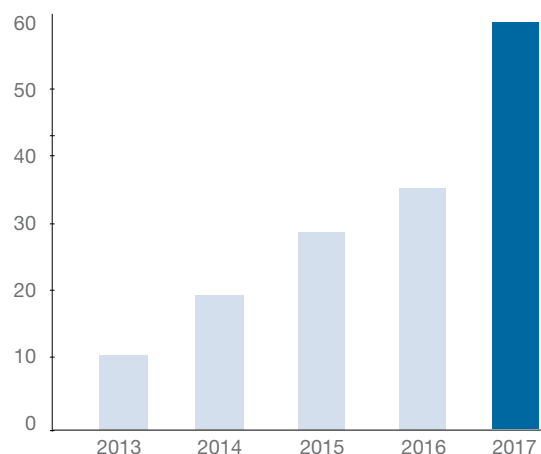
(OJRD). Data from the study results indicate that ColdZyme significantly reduces both viral load and the number of days with common cold symptoms.

- » October: An Extraordinary General Meeting resolves to implement 2017/2023 Employee Warrant Plan II to enable additional employees to participate in incentive programs.
- » November: A new market survey shows that ColdZyme is the cold product that pharmacy staff in Sweden recommend most.
- » November: Enzymatica presented the results of an in vitro study, published in a scientific journal, showing the ability of ColdZyme to deactivate most of our common cold viruses.
- » December: In a new consumer survey in Sweden, over 40 percent of customers stated that they use ColdZyme preventively, and that if they should catch a cold anyway, almost 80% state that they experience milder cold symptoms or shorter duration.

## GROUP

SEK m	2017	2016	2015
Net sales	59.4	36.5	27.9
Gross margin, %	61	61	70
Operating profit/loss	-30.2	-46.2	-40.5
Cash flow for the year operating activities	-22.5	-38.4	-37.6
Average number of employees	21	21	16

## SALES TREND (SEK M)



# Enzymatica in 2 minutes

Enzymatica AB is a Swedish life science company that develops and sells medical devices for infection-related diseases. The products are based on a barrier technology that includes marine enzymes. The company's first product is ColdZyme® Mouth Spray, which can prevent colds and reduce the duration of disease. The product has been launched in about ten markets. The strategy is to continue to grow by strengthening the Company's position in existing markets and expanding into new geographic markets through established partners.

## Business concept

Enzymatica's business concept is to develop products based on barrier technology and marine enzymes for self-care in major market segments. With successful sales in Scandinavia as a base, strengthened with patents and proven performance through patient studies, the products must be attractive to distribution partners in the rest of the world.

## Goals

Enzymatica's short-term goal is to establish ColdZyme as one of the leading brands in the cold category within Europe, and ultimately to become a leader in several markets.

## Business model

For the cold product ColdZyme the Company is working with two different business models, based on opportunity and risk. In both cases the product is sold to consumers via the pharmacy and health chains under its own brand or a combined brand, known as co-branding.

In Sweden, Denmark and Norway Enzymatica has its own industry-experienced sales force. This model provides Enzymatica with high margins and control, but also with higher risk since the Company is responsible for the fixed costs for both the sales organization and for market investments.

In markets outside Sweden, Denmark and Norway, Enzymatica sells via distributors who are responsible for the market investment. The model provides lower gross margins, but also entails lower costs and risks.

In the UK a hybrid of the two models is currently applied. Sales to the Boots and Lloyds pharmacy chains are handled by a contract sales organization under an arrangement in which Enzymatica provides the market investment.

## Enzyme technology

Enzymatica uses a unique marine enzyme, a cold-adapted trypsin that forms in the pancreas of cod. The enzyme is extracted as a byproduct of fish processing (from fish waste) and therefore leaves no negative ecological footprint. The unique properties of the enzyme makes it super-active at body temperature, about 37°C (98.6°F), and its catalytic activity is more than 40 times higher than the corresponding enzyme in mammals. These properties makes the enzyme highly effective in protecting against disease-related microorganisms such as viruses for different product areas.

## Growth strategy

The growth strategy is based on three cornerstones

### 1 INCREASE MARKET SHARE ON EXISTING MARKETS

In Scandinavia, where the company has its own sales organization, the Company will strengthen its market position, while maintaining its margin. ColdZyme is now an established product on the Swedish market and is among the top-selling cold products in Swedish pharmacies. Denmark follows the Swedish development curve.

### 2 GEOGRAPHIC EXPANSION

Expansion to large potential markets outside Scandinavia will take place via established partners. In order for Enzymatica to achieve profitability, both price and volume are important parameters in negotiations with distributors.

The focus in 2017 has been on discussions and negotiations with international operators regarding distribution agreements. Preparatory regulatory work for markets outside the EU has also begun, as have efforts to strengthen the quality system to be able to meet the high standards of international distributors and authorities. We are well prepared for the new EU legislation on medical devices, which will come into force in 2020.

### 3 MORE UNIQUE PRODUCTS

The Company's enzyme-based product portfolio will grow as a result of our own research and development. The strategy is to identify medical needs, primarily related to upper respiratory tract infections, for which there is no treatment or treatment is not fully effective. The strategy moving forward includes strengthening the Company's technology platform with more products and continuing to pursue research in barrier technology.



## Product portfolio

### Medical devices

- » ColdZyme® Mouth Spray for colds. ColdZyme is used preventive or for several colds.
- » ColdZyme® Mouth Spray OneCold for colds. 7 ml is enough for a single cold episode or to prevent a cold for a specific occasion.

In some markets, ColdZyme is sold under combined brands, known as co-branding, including Pre-Cold® (Iceland), Cortagrip® (Spain) and ViruProtect® in Germany, Austria and Belgium.

### ColdZyme Mouth Spray

ColdZyme can prevent colds or reduce their duration. ColdZyme captures and deactivates the cold virus, thereby protecting the throat. This means that there is less risk of coming down with a cold or the course of disease is shorter if a cold has already begun.

COMMENTS FROM THE CEO

# We achieved several important milestones in 2017

Enzymatica achieved several important milestones in 2017. Our major international breakthrough came with the agreement with pharmaceutical company STADA, a market leader in the cold segment in a number of major markets, including Germany and the UK. Our sales growth was strong at 63% during the year and ended at SEK 59.4 million, which can be compared with SEK 36.5 million for 2016. As a result, our operating result improved to SEK -30.2 million, compared with SEK -46.2 million the previous year. The fourth quarter was the 16th consecutive quarter with growing sales compared to same quarter during previous year. Sales in the Swedish market shows double-digit growth over the full year, with a rolling 12-month market share in value for ColdZyme® of more than 5% in the cold segment. Enzymatica also presented a number of clinical studies and market studies with exciting results, and we finalized several strategic recruitments.

Sales in Sweden, Denmark and Germany in particular contributed to the increased sales in 2017. The sustainable sales growth of ColdZyme on our home markets indicates that our customers experience clear benefit from the product. ColdZyme was the brand, among the top ten products in the cold segment in the Swedish market, that had the greatest growth in value over the past year. ColdZyme passed Nezeril® in sales value as a brand. Sales in Denmark also surged after our focus on advertising campaigns and our own sales force.

Our agreement with the German pharmaceutical company STADA is the result of years of work aimed at becoming an attractive partner for international pharmaceutical companies. We strengthened internal processes in production, as well as our quality management and regulatory systems. In addition, enzyme production at our Icelandic subsidiary Zymetech was upgraded during the year to be able to meet the demands of continued sales growth and quality. Zymetech was acquired in 2016 to gain control of the enzyme patents and production, as well as to strengthen our research expertise. In summary, we have become a much more interesting partner that can

offer patent protection for enzyme-based products, and therefore exclusivity for our partners, at the same time that advanced enzyme production and unique know-how have created a technical platform that enables expansion within new product areas. Signing a distribution agreement with a major international pharmaceutical company is a stamp of quality for our product and business, acknowledging the results of our strategic efforts.

STADA's market investments during the second half of the year produced results with a very satisfying sales trend for ViruProtect®, which is STADA's co-brand for ColdZyme. Since its launch last fall, ViruProtect has achieved a market share on a level with Esberitox® – a known cold product that has been on the German market for many years. The sales trend was also positive in Belgium and Austria, which are also covered by the agreement with STADA.

We strengthened the documentation for ColdZyme during the year. We published several clinical studies on pre-school staff and elite athletes. We announced several market and customer surveys, and also presented the complete article for the COLDPREV I study as well as an



in-vitro study of ColdZyme. The results of these studies show an unequivocal picture of ColdZyme's beneficial effect on colds. The in vitro study in particular was important since it demonstrates how ColdZyme deactivates four of our most common cold viruses by reducing the ability of virus to invade cells.

In 2017 we also filled several key positions such as our Chief Commercial Officer, Chief Operating Officer and Chief Financial Officer. The significant international experience they add to Enzymatica is crucial for our continued international expansion.

The trend in the fourth quarter followed the pattern from previous quarters with continued growth at a very strong 70%, compared to 4th quarter last year. STADA's follow-up order contributed to the robust growth during the quarter. I am also pleased that we had a positive cash flow during the fourth quarter.

As I summarize the year, I would also like to thank all of our employees and partners for their outstanding efforts, which have taken our business to a new level.

I have great expectations for 2018. We will continue to focus on sales, strengthened documentation of ColdZyme and geographic expansion. Our goal is to increase sales and to enter into at least one new distribution agreement for a key market, as well as to continue our growth in "mature" markets such as Sweden and Denmark.

Lund, March 2018  
Fredrik Lindberg, Chief Executive Officer

INTERVIEW WITH BENGT BARON, CHAIRMAN OF ENZYMATICA

# We have a product that works for a global need and we have a strongly dedicated organization

**You've been chairman of Enzymatica for a little over a year – what is your impression of the company?**

It's an incredibly exciting company with tremendous opportunities. We have a product that works for a global need and we have a strongly dedicated organization. We possess unique skills and technology – it is important that we continue to develop our expertise in enzyme and barrier technology and in relation to our competitors in order to maintain our lead in the market. Then we have to respect the fact that internationalization and geographical expansion take time. Yes, I think we have every reason to be optimistic.

**How do you view Enzymatica's development in 2017?**

After focusing on structural issues in 2016, we've been able to go on the offensive in 2017, in terms of both development in existing mature markets and in new markets. The agreement with the German pharmaceutical company STADA for the German, Belgian and Austrian markets is truly an international breakthrough. The agreement shows strong interest and that we are now an attractive partner for large international companies. We also strengthened the documentation for ColdZyme® during the year by publishing several successful clinical studies and market surveys. In addition, we filled several key positions through strategic recruitment campaigns and strengthened our expertise, which is important for our international expansion. Last, but not least, we demonstrated strong sales growth of over 60 percent. We are now even stronger as we enter 2018.

**How do you view the international cold market and its potential?**

Colds are a global problem that impact many lives. It is a huge market with few drugs that attack the cause of colds. Our challenge is to create accessibility through partners and then to create consumer awareness. The trends in Sweden and Denmark for ColdZyme show that the market really appreciates the product – quite simply, that it works. Even though five years have passed since we launched ColdZyme in Sweden, we still have double-digit growth figures.

**What issues have you focused on in the Board of Directors in 2017?**

We've focused on internationalization – how we can continue to roll out our product abroad, as well as issues related to strengthening the organization with the right skills. Other issues have involved conducting studies to improve the documentation for ColdZyme and to build trust, as well as "organizational" issues – ensuring procedures, processes and systems.

**What issues are most important for you with respect to corporate governance?**

Allocation of resources to achieve both short-term and long-term results in the business, as well as the need to have the right controlling bodies in place and the right skills in the right place in the company.





### What expectations do you have for Enzymatica in 2018?

We will continue our growth, which involves continued success together with STADA, but also new distribution agreements. We will also continue to work on strengthening our documentation, and on developing our technological expertise. We are the world leader in barrier technology and cod enzymes – based on our know-how, I believe that we will develop new products and applications. We are a growth company - I really have great confidence in our future.

Lund, March 2018  
Bengt Baron, chairman

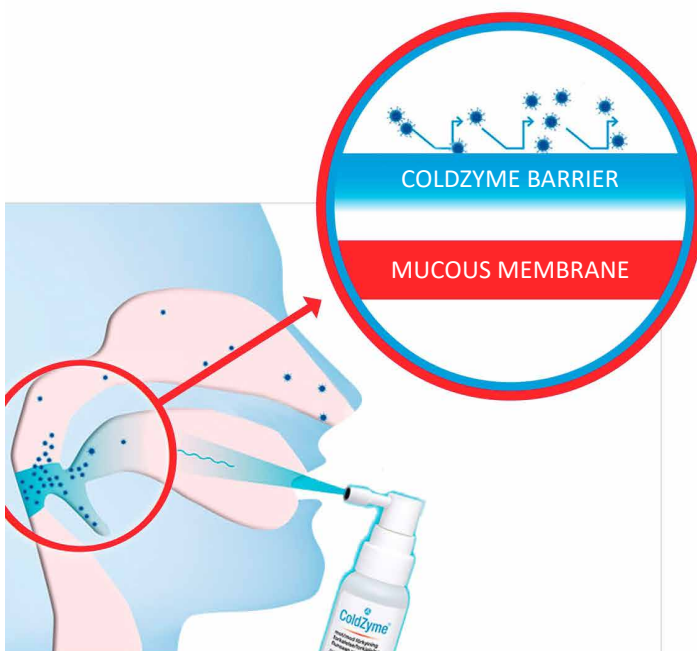
PRODUCT DESCRIPTION

# ColdZyme Mouth Spray treats the cause – instead of the symptoms

ColdZyme® Mouth Spray is unique because it treats the cause of the cold, the actual cold virus. ColdZyme Mouth Spray can prevent colds or shorten their duration among people who already have a cold. ColdZyme is easy to use and works immediately by forming a protective barrier in the mouth and throat.

### Barrier to block virus in the throat

The barrier works through osmosis – it captures the cold virus and deactivates the ability of the virus to infect cells, which protects the mouth and throat and allows the body to rid itself of the virus naturally. ColdZyme Mouth Spray reduces the risk of colds (works prophylactically) and can reduce the course of disease if it is used at an early phase of infection.



## THE COLDZYME BARRIER

The ColdZyme barrier consists of two ingredients that together provide an effective result.

Glycerol  Trypsin

1 TRAPS



The glycerol creates an osmotically active barrier that traps viruses.

2 DEACTIVATES



The trypsin inhibits the viruses' ability to bond, **deactivating** their ability to infect cells.

3 PROTECTS



The ColdZyme barrier **protects** the oral cavity and throat, allowing the body to get rid of deactivated viruses using its natural processes.

## Double effect

### Treatment:

If you should catch a cold, ColdZyme should be used as soon as possible to reduce the duration of the cold. Treating the cold with ColdZyme immediately makes it possible to reduce the viral load and thereby reduce the duration of the cold.

### Prevention:

In addition to treatment, ColdZyme can also be used preventively, when you are not ill, but are exposed to viruses and have an increased risk of catching a cold, such as on planes, in crowds, when traveling on public transportation, or if colleagues or family members have a cold. Many amateur and elite athletes use ColdZyme preventively, especially to prevent lost training and racing days, since athletes who catch colds suffer twice – from the cold itself, and from getting out of shape.



## Well-documented product

ColdZyme is well-documented in the general population, as well as in special groups where ColdZyme can help them avoid colds or reduce the duration if they should catch a cold. In 2017 Enzymatica published the results from several studies on the use of ColdZyme, including clinical studies, observation studies and one in vitro study. Read more about the positive effects of ColdZyme on colds in the section ColdZyme studies 2017: Strengthened documentation for ColdZyme through new studies.

## Socioeconomic benefits

Colds are the single biggest cause of sickness absence, corresponding to just over 30 percent of all sick leave according to occupational health company Previa. According to a survey carried out by Nordeg and commissioned by Enzymatica, major socioeconomic benefits can be achieved by reducing the number of sick days due to colds. The report shows that a reduction of a single sick day in Sweden would result in annual savings of SEK 1.4 billion for society, based on 10 percent of all 4.7 million full-time employed individuals.

DESIGN & DEVELOPMENT

# High quality medical devices through advanced marine enzyme technology

INTERVIEW WITH ÁGÚSTA GUÐMUNDSDÓTTIR OCH BJARKI STEFÁNSSON, RESEARCHERS AT ENZYMATICA ON ICELAND

Ágústa Guðmundsdóttir, Professor Emeritus and Scientific Adviser at Enzymatica, and one of the founders of Zymetech, which was acquired by Enzymatica in 2016, and Bjarki Stefánsson, who works with design and development, share their opinions on enzyme technology and its future potential in this interview.

## What is the primary focus of Enzymatica's design and development?

We mainly focus on supporting our existing products. This includes research, development and scientific support for all aspects of our products. Our design and development work are important for meeting the requirements relating to the legal framework for the products. Part of our research is also associated with patents, which are extremely important for protecting the enzyme technology on which the products are based. Patents and scientific publications provide support for the work behind the products.

## What are the biggest advantages of enzyme technology, both in general and specifically for Enzymatica?

The enzyme technology that Enzymatica uses is based on decades of research and development. The enzymes are very active and have a unique ability to cleave proteins, for example on the surface of the virus particles. Our product ColdZyme®, which protects against upper respiratory tract infections, is based on this important function.

## What are the potential indications for enzyme technology?

There are interesting in vitro studies on enzymes that show an array of possibilities for future product development, including damaged skin or mucous membranes, and conditions in which biofilms are formed.

## What is the future of Enzymatica's enzyme technology?

Our enzyme technology can be used for a variety of medical indications. Our medical device has proven safety and efficacy, and is accepted and popular with consumers, which bode well for enzyme technology. As a result, new enzyme-based medical devices may be developed for other indications on the market. The extensive research and development that we have carried out relating to enzyme technology, with a focus on our existing and future products, serve as the basis for the continued success of our medical devices. Continued support and development of Enzymatica's products will benefit consumer health worldwide.



#### Personal background:

Ágústa Guðmundsdóttir is one of the founders of Zymetech and currently serves as scientific adviser for Enzymatica. She has a bachelor's degree in food science from the University of Iceland and a PhD in microbiology and molecular biology from the Faculty of Microbiology at the School of Medicine of the University of Virginia, with a focus on genetic analysis of microbes and protein chemistry.

Bjarki Stefánsson has a bachelor's degree in biochemistry from the University of Iceland and a PhD in microbiology and molecular biology from the Faculty of Microbiology at the School of Medicine of the University of Virginia. He now works with design and development at Enzymatica.

Ágústa and Bjarki have focused their research on cold-adapted marine enzymes from Atlantic cod and Antarctic krill, with a focus on how they can be used in biomedicine and biotechnology.

COLDZYME STUDIES IN 2017

# Strengthened documentation for ColdZyme through new studies

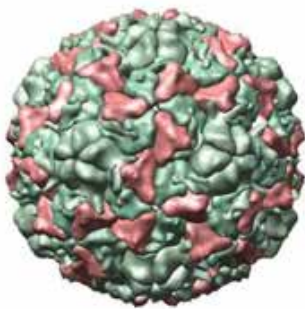
In 2017 Enzymatica published the results from several studies on the use of ColdZyme® Mouth Spray, including clinical studies, market surveys and an in vitro study. The results are clear and show the positive properties of the product for preventing and treating colds.

- ✓ Review article: Potential Use of Atlantic Cod Trypsin in Biomedicine, Jan 2013
- ✓ Review article: Cold-Adapted Proteases as an Emerging Class of Therapeutics, Jun 2013
- ✓ Patient-case report: Evaluation of ColdZyme® Mouth Spray on prevention of upper respiratory tract infections in a boy with primary immunodeficiency: a case report. Nov 2016
- ✓ Abstract: Prevention of upper respiratory tract infection among elderly care personnel and residents at a nursing home. Dec 2016
- ✓ Article: Prevention of common colds among elite athletes teams using ColdZyme Mouth Spray. June 2017
- ✓ Article: Evaluation of ColdZyme Mouth Spray against common cold in preschool staff. Oct 2017
- ✓ Full Article: COLDPREV – A Randomized, Double-Blind, Placebo-Controlled Pilot Clinical Study on ColdZyme® Mouth Spray against Rhinovirus-Induced Common Cold. Oct 2017
- ✓ Article: A medical device forming a protective barrier that deactivates four major common cold viruses (Rhinovirus type 1A and type 42, Seasonal Flu virus (H3N2), Respiratory Syncytial Virus, Adenovirus type 2). Nov 2017

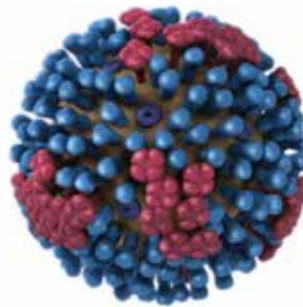


## ColdZyme deactivates the majority of viruses that cause colds

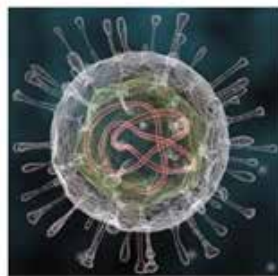
One study<sup>1</sup> that was carried out in the autumn of 2017 shows that ColdZyme® deactivates the majority of viruses that cause colds. This effect is unique, since its nonspecific action affects a variety of viruses. The published study was carried out by Microbac, an independent accredited and certified laboratory in the US.



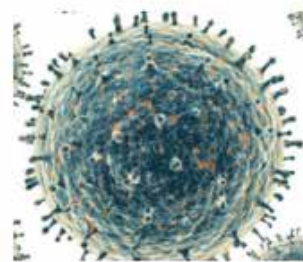
**Rhinovirus**



**Influenzavirus**



**Adenovirus**



**Respiratory Syncytial Virus (RSV)**

The in vitro study is based on standardized and validated methods for investigating viral cell damaging effects when inoculated on host cells.

ColdZyme was able to deactivate the majority of known viral types that cause colds. ColdZyme deactivated the effects of rhinovirus type 1A by 91.7%, rhinovirus type 42 by 92.8%, human influenza A virus H3N2 by 96.9%, RSV virus by 99.9%, and adenovirus type 2 by 64.5%. ColdZyme had no harmful effect on the cells that were studied.

1) Stefansson et al, A medical device forming a protective barrier that deactivates four major common cold viruses. Virology Research Reviews, Issue 5, 2017

## COLDZYME STUDIES IN 2017

### Most recommended product

“Mystery shoppers” who pretended to be consumers with symptoms that included feeling sick and a sore throat asked pharmacy staff to recommend something that could help with a cold. The results were statistically significant: ColdZyme® was the product recommended more often than other cold products to prevent and shorten the duration of a cold.

A total of 93 pharmacies were visited in the Stockholm, Gothenburg and Skåne metropolitan areas.

Mystery Shopping conducted by GfK shows that ColdZyme is recommended by pharmacists significantly ( $P < 0.001$ ) more often than other cold products to prevent and reduce the duration of a cold.



## ColdZyme – the most recommended cold product at pharmacies

Enzymatica conducted a new market survey showing that ColdZyme® Mouth Spray is the cold product that pharmacy staff in Sweden recommend most <sup>1</sup>. The majority of consumers who asked for help and recommendations at the pharmacy regarding colds were advised to use ColdZyme. In addition, recent statistics from Nielsen Data show that ColdZyme is the most successful brand launch of a new cold product in Sweden in over 30 years <sup>2</sup>. By the end of 2017, the product had achieved a market share greater than 5 percent in the cold category, and it continues to increase its market share after 5 years in the Swedish market.

Market research company GfK was commissioned by Enzymatica to conduct a market survey at 93 pharmacies in the Stockholm, Gothenburg and Skåne metropolitan areas. “Mystery shoppers” who pretended to be consumers with symptoms that included feeling sick and a sore throat asked pharmacy staff to recommend something that could help with a cold. ColdZyme was the product

recommended more often than other cold products to prevent and shorten the duration of a cold. ColdZyme was recommended by 67 percent of pharmacy staff, while only 26 percent recommended the product that received the second highest number of votes. The results are statistically significant.

1) © GfK Mystery Shopping and Attitudinal Study | May 2017

2) Nielsen Data, 12M MAT, Sept. 30, 2017





## ColdZyme cold spray reduces sickness absence among preschool staff

Enzymatica conducted an evaluation of ColdZyme® Mouth Spray for colds among preschool staff during cold season. The results show that the use of ColdZyme reduced sickness absence by more than three days, from 7.4 to 4.1 days. In cases where the staff in the study did catch a cold, the symptoms of infection were less severe.

Enzymatica conducted an observation study with 15 people who used ColdZyme to prevent colds during cold season (October-March). The 15 people, who work at a preschool, all completed the study. Participants were instructed to use ColdZyme as soon as they were exposed to colds, and also to use ColdZyme at the first sign of cold symptoms and continue until the symptoms disappeared. Sickness absence records for the control period during the previous winter were available for the participants.

The purpose of the study was to evaluate whether ColdZyme can be used to prevent colds or to reduce the duration and severity of colds among preschool staff, thereby reducing socioeconomic costs. Conditions at preschools are conducive to the spread of infections. An infected child can easily infect the staff, resulting in reduced work capacity and sickness absence.

- The study results show that when taken preventively and at the first signs of cold symptoms, ColdZyme reduced short-term sick leave among personnel from 7.4 to 4.1 days during a six-month period compared with the control period,” says Fredrik Lindberg, CEO of Enzymatica.

As a result, average sickness absence decreased by 3.3 days compared with the previous year. In addition, study participants reported that they had not noticed any side effects when using ColdZyme.

Colds are the single biggest cause of sickness absence, corresponding to just over 30 percent of all sick leave according to occupational health company Previa. According to a survey carried out by Nordeg and commissioned by Enzymatica, major socioeconomic benefits can be achieved by reducing the number of sick days due to colds. The report shows that a reduction of a single sick day in Sweden would result in an annual savings of SEK 1.4 billion for society, based on 10 percent of all 4.7 million full-time employed individuals.

## COLDZYME STUDIES IN 2017



### Study of elite athletes – fewer sick days and improved quality of life

Enzymatica conducted a study<sup>1</sup> in which Swedish elite athletes used ColdZyme® Mouth Spray to protect against and reduce the symptoms of colds. The results of the study show that ColdZyme reduced the number of sick days by more than 50 percent in the two groups of hockey players and biathlon skiers compared with previous control periods. The study also shows that the elite athletes who came down with colds and who used ColdZyme experienced milder symptoms and improved quality of life compared with untreated common colds.

Enzymatica conducted a study of elite athletes who used ColdZyme for 3-12 months during the winter seasons 2012-2014 in Sweden. In all, 11 biathlon skiers, 29 hockey players and 20 handball players participated and submitted information on number of days absent from training and competition. In addition, those who came down with colds responded to questions about their symptoms and quality of life.

- “The study results show that the average number of sick days per athlete and month when using ColdZyme significantly declined, by 51 percent for the biathlon skiers and 67 percent for the hockey players, compared with the control periods when ColdZyme was not used,” says Ulf Blom, Executive Vice President of Marketing and Sales at Enzymatica.

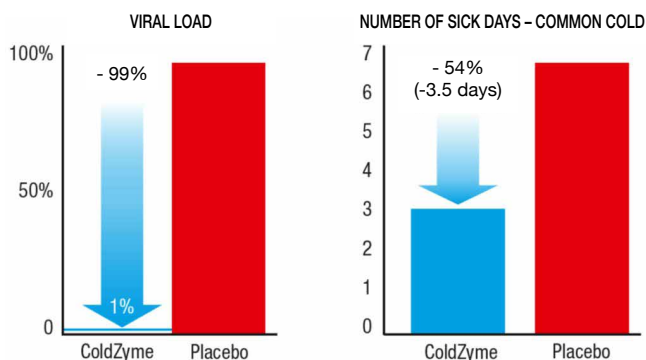
The athletes in the study who became infected reported milder symptoms and significant improvement in quality of life (for example, improved sleep and performance) compared with common cold sufferers not treated with ColdZyme. Nine of eleven biathlon skiers reported that they felt better or much better when using ColdZyme and that they had milder or much milder cold symptoms. The handball players reported similar results, where 76 percent responded that when using ColdZyme the cold was so mild that it had little or no effect on quality of life.

- “Using ColdZyme has been very important for my training as a biathlon skier. Before I began using ColdZyme I could have 30 to 40 days of sick leave per season, compared with 3-5 days when using ColdZyme,” says Torstein Stenersen, who belongs to the Swedish biathlon team.

1) Clarsund, M. Evaluation of ColdZyme Mouth Spray for the Protection against Common Cold in Elite Athletes to Reduce Unwanted Absence from Training and Competition. Open Journal of Respiratory Diseases, 2017, 7, 103-109

## Complete results from the COLDPREV study

In the fall of 2017 the complete results from the complete article about the COLDPREV I study were published in the Open Journal of Respiratory Diseases (OJRD). The double-blind placebo-controlled study evaluated ColdZyme® Mouth Spray for experimentally induced colds in healthy volunteers. The study results indicate that ColdZyme significantly reduces viral load and reduces the number of days with common cold symptoms.



The viral load in the throat was reduced by 99% in the ColdZyme group, a result that was statistically significant in relation to placebo ( $p = 0.023$ )

Number of sick days with common cold was reduced by 3.5 days or 54% in the ColdZyme group, a result that was statistically significant in relation to placebo ( $p = 0.014$ )

The study was a pilot study conducted by the Department of Otorhinolaryngology (Ear, Nose and Throat) at Skåne University Hospital, and was previously published as both an abstract and a poster. In this randomized, double-blind placebo-controlled study, 46 subjects were inoculated (infected) with rhinovirus (cold virus). The results show a statistically significant difference between ColdZyme and placebo in reduction of both viral load (quantity of virus) in the throat (-99%) and number of days with common cold symptoms (-54%) from 6.5 to 3 days.

- “The extremely interesting study results have provided us with valuable information that will aid in the design of future follow-up studies of ColdZyme,” says Fredrik Lindberg, CEO of Enzymatica.

## Consumer survey shows that ColdZyme is used preventively and that it reduces the intensity of symptoms and duration of colds

In November 2017, the market research company GfK conducted a consumer survey commissioned by Enzymatica. In the survey over 40% of customers stated that they use ColdZyme® preventively, and that if they should catch a cold anyway, almost 80% state that they experience milder cold symptoms or shorter duration.

The purpose of the consumer survey was to investigate ColdZyme users' views on ColdZyme and to assess the market in general. The survey included 100 customers in need of cold products and 100 ColdZyme users in Sweden. The findings confirmed that most ColdZyme users either take ColdZyme preventively, or for early symptoms such as sore throat or malaise. The most common reasons that consumers chose to use ColdZyme was either the beneficial effect of the product, or based on the recommendation of a pharmacist, colleague or friend. Among ColdZyme users, 42 percent state that they use ColdZyme preventively, and that if they should catch a cold anyway, almost 79 percent state that they experience milder cold symptoms or shorter duration.

In general, ColdZyme users thought that the product was well tolerated and effective. The Swedish pharmacy market has about 170 products in its cold category and both ColdZyme products (7 and 20 ml) are on the top ten list. As a brand, ColdZyme is currently established on the top five list of best-sellers in value.

INTERVIEWS WITH PHARMACISTS

## Extremely positive reaction to ColdZyme from customers

Marianne Schwartzbach, pharmacist at Ringsted Apotek, and Birgit Nielsen, pharmacist at Roskilde Dom Apotek, express their views on marketing and sales of ColdZyme® at their respective pharmacies.



*Birgit Nielsen, pharmacist at Roskilde Dom Apotek*

### What do you think of ColdZyme Mouth Spray?

Marianne: ColdZyme is a good product, it works well and it's easy to sell, especially to men who have come down with colds or to their wives who are tired of listening to their complain.

Birgit: I really like the product. I've tried it personally and that makes it easy to sell.

### How have customers reacted to ColdZyme?

Marianne: Consumer reaction has been extremely positive and it's easy to explain how the product works.

Birgit: I think the reaction to ColdZyme has been extremely positive. But the fact that it is a mouth spray makes it different from the more traditional products that we usually recommend for colds. This means that both pharmacists and customers have to get used to it and that it is actually a product that can reduce the viral load.

### How do you market ColdZyme in your pharmacy?

Marianne: We market ColdZyme through campaigns, both in the pharmacy chain and locally. We display ColdZyme next to other cold products behind the checkout counter, and on the sales counter during campaigns. We also market ColdZyme on our Facebook page and sometimes we have product demonstrations with the ColdZyme sales representatives. In addition, we sometimes have campaigns for specific products at the pharmacy, including ColdZyme.

Birgit: It's similar for us, with campaigns in the pharmacy chain and locally. We display ColdZyme in different places in the pharmacy. We also market the product on our Facebook page and have product demonstrations.

### What has the sales trend for ColdZyme been like?

Marianne: The trend is great, and we see customers come back to buy ColdZyme.

Birgit: We sell more during campaigns. Remember that ColdZyme is still a new product for many consumers and it's difficult for us to keep the focus on the product all the time, especially when we also have campaigns for competing products.

### Any other thoughts?

Marianne: The price is high, but it is also a product that is good for us to sell, since we earn more money on ColdZyme than on many other cold products.

Birgit: The price is high compared with other cold products, but at the same time I like the ways in which Enzymatica supports us with visits, sales material, relevant facts and especially TV commercials.

## Cortagrip – a revolutionary product

Miguel Angel Martínez Gongora, Sales Rep Team Manager, at Enzymatica's partner Esteve, is extremely enthusiastic about Cortagrip – ColdZyme®'s name on the Spanish market. Although the introduction of a new product takes time, customer response is positive – regarding the potential for both cold prevention and milder symptoms.

### What do you think about Cortagrip Mouth Spray?

I think it's a revolutionary product. It's the first product that covers the needs of many patients for treatment of viral upper respiratory tract infections.

### How have customers reacted to Cortagrip?

Initially, consumers were particularly surprised at how effective Cortagrip is at preventing colds. Now they are starting to believe in this product as a basic product to have at home during cold season.

### What have consumers specifically said about Cortagrip as a cold product?

They don't consider Cortagrip to be just a cold product. They understand that it is a product that also deactivates viruses and reduces viral load.

### How is Cortagrip marketed in the pharmacies?

Most importantly, by displaying the product in the pharmacy so that the customer asks for it. But it is also proactively presented for use both preventively in situations that can cause infections and for treatment at the first sign of cold symptoms.



On the left Ana Carmona and on the right Cristina Delgado, who sell Cortagrip in their pharmacy Farmacia La Banda in Chiclana de la Frontera (Cadiz).

### What has the sales trend for Cortagrip been like?

It's a new product, so it takes a bit longer to introduce it to customers, especially in Spain where there isn't a tradition of working preventively. The pharmacist needs to carefully explain Cortagrip to consumers. It takes time, but it has the potential to become a leading product within a few years.

VALUE CHAIN

# Successful integration strengthens Enzymatica's value chain

In 2016 Enzymatica acquired the Icelandic company Zymetech. In 2017 the two organizations were successfully integrated through joint teams for production, research, product development, patents and business. The purpose of the new organization is to coordinate resources and increase cooperation to leverage the aggregate knowledge within the company. As a result of the acquisition and the integration process, Enzymatica has full control of its value chain.

The acquisition of Zymetech was strategically important for Enzymatica and provided the opportunity to achieve international expansion. The Company gained international exclusive rights to a patent-protected enzyme, a key component of ColdZyme® Mouth Spray, as well as control over production of the enzyme, access to international research and development expertise and Zymetech's research portfolio. As a result of the acquisition, Enzymatica also has ensured exclusivity for ColdZyme throughout Europe and ten additional countries, which enables the Company to sign exclusive agreements with leading international distributors to obtain broad market coverage. One example of this is the agreement signed in 2017 with the German pharmaceutical company STADA for marketing and sales of ColdZyme in the German, Belgian and Austrian markets.

## Patent protection and production

Enzymatica previously had a commercial agreement with Zymetech that guaranteed an unlimited supply of enzymes, and that also gave Enzymatica the exclusive right to sell proprietary products in the Nordic region. Outside the Nordic region Enzymatica had non-exclusive sales rights. As a result of the acquisition of Zymetech, Enzymatica has patent protection for its own products and for Zymetech's products in, for example, the EU, China, Australia, Russia and Canada. Since Zymetech is the sole producer of the deepwater enzyme in question, the acquisition also entails global control of enzyme production, which could significantly delay competition in key countries where there is not full patent protection. Enzymatica thus has exclusive rights in countries with patent protection until 2020 and a technological lead of several years over the rest of the world. Now that Zymetech is part of Enzymatica, the Company has control of Design & Development, as well as the production and manufacturing process. Enzymatica has submitted several new patent applications, including to protect recombinant

production of marine enzymes, use in immunodeficiency diseases, use combined with antibiotics, and use of active isoenzymes.

## Design & Development

Enzymatica has refined its research portfolio in recent years. The focus has been on documentation and research related to ColdZyme. Enzymatica is working in close collaboration with clinical researchers to develop medical devices in the therapeutic areas of upper respiratory tract infections and oral health.

Zymetech has extensive knowledge in enzyme technology, applied enzyme research, and processing and formulation of the relevant enzyme, which also allows for a broadening of the areas of use for ColdZyme and facilitates development of new products based on the two companies' common technology platform. Access to international research expertise and clinical data provide the opportunity for a broader product portfolio in the long term. The Company also considers it to be an advantage that Zymetech focuses on research and development relating to upper respiratory tract infections, which is a priority area for Enzymatica.

## Control over value chain

After the merger with Zymetech, the Company's operations cover the entire value chain from production of enzymes to the sale of medical devices. The Company combines expertise in enzyme research and development of medical devices with its experience of global market penetration and sales. As a result of the acquisition, we have the opportunity to offer exclusive rights to the active enzyme that is part of the Company's product development. In 2017, we improved and optimized production of enzymes, in part by moving to new premises suited for the purpose, as well as an update and review of the documentation governing production. We now have control of all manufacturing steps in our products.

### Value chain for Enzymatica

Following the acquisition of Zymetech Enzymatica now has full control of enzyme production, product development and registration. Products are manufactured through contract manufacturing in accordance with Enzymatica's specifications and quality requirements. Marketing and sales are both in-house and through partners, depending on the market.



# Shares, share capital and ownership

Enzymatica has been listed on Nasdaq First North since 2015. At year-end 2017 Enzymatica had 2,463 shareholders and market capitalization of approximately SEK 459 million. In 2017, the share price increased by 88 percent, from SEK 2.68 to SEK 5.05. Erik Penser Bank is Enzymatica's certified adviser.

## Shares and share capital

At the end of 2017, the share capital of Enzymatica AB was SEK 3,635,512 SEK, distributed among 90,887,808 shares, each with a par value of SEK 0.04. The Company has only one class of stock. Each share entitles the holder to one vote at Enzymatica's general meeting of shareholders. Each shareholder who is entitled to vote at the general meeting for the full number of shares that he or she owns and represents. Each share carries equal rights to a part of the Company's assets and profit.

### Rights issue

The Annual General Meeting authorized the Board to resolve on the issuance of a maximum of 9,000,000 shares, with or without deviation from preferential rights, in order to enable the company to raise working capital and to take advantage of future opportunities to acquire long-term strong owners as well as to further finance the company's growth strategy.

### Employee Warrant Plans I and II

The Annual General Meeting on April 20, 2017, and the Extraordinary General Meeting on October 25, 2017, resolve to authorize the employee warrant plans 2017/2023 I and 2017/2023 II. The total number of employee warrants allocated in the two employee warrant plans is 3,740,000. In order to enable the Company to deliver shares under the plans for issuance of warrants to Company employees and to ensure payment of costs associated with the employee warrants, primarily social security contributions, the General Meetings resolved to carry out directed issues of a maximum of 4,915,108 warrants to Enzymatica's wholly owned subsidiary Enzymatica Care AB.

If all warrants related to the two outstanding employee warrant plans that have been issued are exercised, a total of 4,915,108 shares will be issued, corresponding with dilution of approximately 5 percent of the Company's share capital and votes after full dilution. Upon full exercise of the warrants for subscription of new shares, the share capital will increase by a total of SEK 196,604.40.

For further information, please refer to the Administration Report in this annual report.

### Expanded authorization for the Board to decide on the issuance of shares

The Extraordinary General Meeting on October 25 expanded the Board's existing authorization to issue new shares as resolved at the 2017 Annual General Meeting of shareholders for appropriate reasons. In addition to allowing the Company to acquire working capital and to take advantage of future opportunities for obtaining long-term strong owners and to further fund the Company's growth strategy, the reason for deviating from shareholders' preferential rights is also to enable the Company to acquire outstanding minority shares in the subsidiary Zymetech ehf. through a non-cash issue. Otherwise, the Annual General Meeting's authorization shall remain unchanged.

*For more information please see Enzymatica's website under Press Releases/Bulletin from Extraordinary General Meeting.*





Registered	Transaction	Increase in number of shares	Total number of shares	Change in share capital	Total share capital	Par value
2006	Founded	1,000	1,000	100,000	100,000	100.00
2009	Rights issue	200	1,200	20,000	120,000	100.00
2011	Rights issue	3,800	5,000	380,000	500,000	100.00
2011	Split	12,495,000	12,500,000	–	500,000	0.04
2011	Rights issue	2,220,000	14,720,000	88,800	588,800	0.04
2012	Rights issue	1,783,832	16,503,832	71,353	660,153	0.04
2012	Rights issue	1,375,319	17,879,151	55,013	715,166	0.04
2013	Rights issue	890,000	18,769,151	35,600	750,766	0.04
2014	Rights issue	4,692,287	23,461,438	187,691	938,457	0.04
2014	Rights issue	1,500,000	24,961,438	60,000	998,457	0.04
2016	Non-cash issue	20,905,942	45,867,380	836,238	1,834,695	0.04
2016	Rights issue	27,520,428	73,387,808	1,100,817	2,935,512	0.04
2016	Rights issue	17,500,000	90,887,808	700,000	3,635,512	0.04

Amounts above are stated in SEK



## Analyses

### Share capital trend

Since its formation, the Company's share capital has changed as shown in the table on the previous page.

### Trading with the Enzymatica share on First North

Enzymatica's shares were admitted for trading on Nasdaq First North on June 15, 2015. The number of shares is 90,887,808. Closing price on December 29, 2017 was SEK 5.05, corresponding to a market capitalization of approximately SEK 459 million. In 2017, average turnover per trading day was approximately 68,196 shares, equivalent to approximately SEK 217,000.

### Ownership structure

The number of shareholders at year-end was 2,463, an increase of 2 percent during the year. The table below shows information about ownership of the company as of December 29, 2017.

## Dividend policy

The Board of Directors does not intend to propose any dividend until the Company generates a profit and a positive cash flow. Enzymatica has not paid a dividend since the Company was founded in 2007.

## Share-based incentive programs

See above under Shares and capital, Employee Warrant Plans I and II.

## Analyses

During the year Enzymatica was analyzed by Remium AB and Erik Penser Bank.

- » Björn Rydell, Remium: bjorn.rydell@remium.com
- » Johan Löchen, Penser: johan.lochen@penser.se

## The Enzymatica share

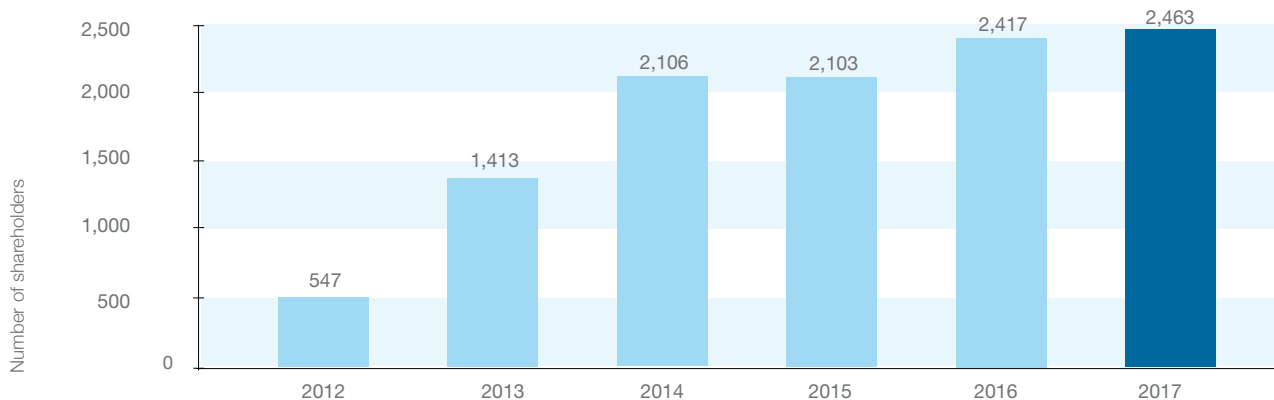
Ticker: ENZY  
ISIN code: SE0003943620  
Sector: Health care

## Enzymatica's ten largest shareholders

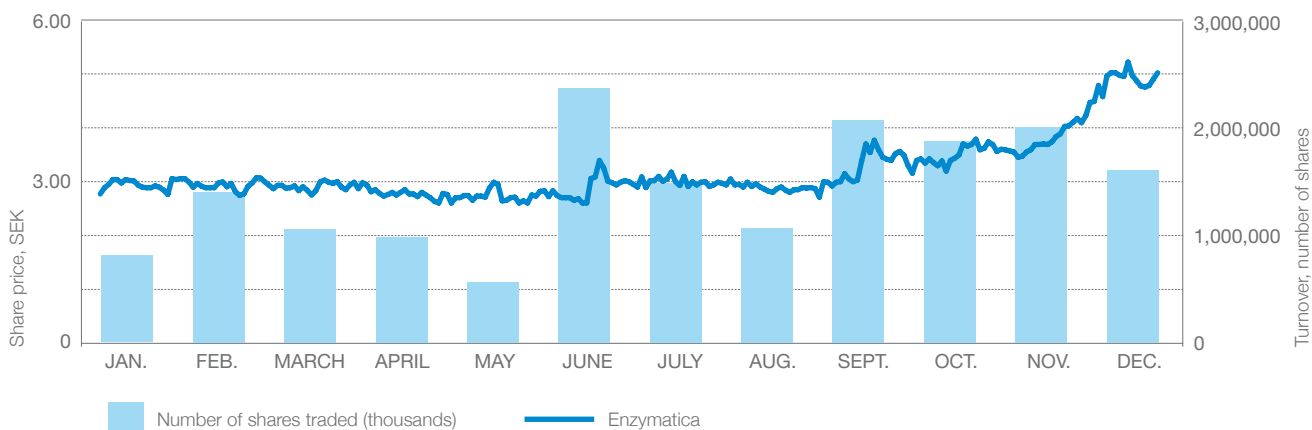
Name	Number of shares	Percentage of capital and votes (%)
Mats Andersson, privately and through company	11,821,951	13.0%
Gudmundur Palmason, privately and through company	9,360,622	10.3%
Augusta Gudmundsdottir, privately and through company	8,200,237	9.0%
Håkan Roos, through company	6,033,333	6.6%
Björn Algvist, through company	5,833,334	6.4%
Ulf Blom, through company	2,130,047	2.3%
Avanza Pension Försäkring AB	2,023,233	2.2%
Jörgen Rexö, through company	2,002,202	2.2%
Sigurgeir Gudlaugsson, through company	1,680,001	1.8%
Nordnets Försäkring AB	1,564,059	1.7%
<b>Holdings 10 largest shareholders</b>	<b>50,649,019</b>	<b>55.7%</b>
Other	40,238,789	44.3%
<b>Total</b>	<b>90,887,808</b>	<b>100.0%</b>

Source: Euroclear, December 2017

## Shareholder trend 2012-2017



## Share price trend 2017



## Financial Overview

(SEK thousand)	2017	2016	2015	2014	2013
Net sales, SEK thousand	59,446	36,482	27,912	19,063	10,489
Capitalized development costs, SEK thousand	-	7,625	3,053	3,758	4,377
Cash flow for the period, SEK thousands	-24,656	27,189	-29,855	33,682	-5,413
Gross margin, %	61	61	70	74	69
Equity/assets ratio, %	83	87	50	86	60
Debt/equity ratio, times	0.2	0.1	1.0	0.2	0.7
Equity (SEK thousand)	110,695	142,041	21,985	62,425	15,728
Cash flow for the year, operating activities, SEK thousands	-22,545	-38,434	-37,648	-40,666	-18,429
Net investments, SEK thousands	-1,265	-18,995	-3,146	-3,918	-4,600
Average number of employees	21	21	16	14	8
Number of shares at end of period	90,887,808	90,887,808	24,961,438	24,961,438	18,769,151
Earnings per share, basic and diluted, SEK <sup>1</sup>	-0.35	-0.69	-1.64	-1.41	-0.89
Equity per share, SEK	1.22	1.56	0.88	2.50	0.84

<sup>1</sup> Based on weighted average of the number of outstanding shares.

### Definitions of – Alternative performance measures

Enzymatica uses alternative performance measures to increase understanding of the information in the financial statements, both for external analysis and comparison, and for internal evaluation.

Alternative performance measures are measures that are not defined in financial statements prepared in accordance with IFRS. The following ratios are used:

#### Gross margin

Net sales for the period less costs for raw materials and supplies in relation to net sales. Gross margin shows earnings in relation to net sales and margin to cover other expenses, as well as profit margin.

#### Equity per share

Reported consolidated shareholders' equity divided by the number of outstanding shares. Shows the share of equity attributable to each share.

#### Earnings per share

Profit/loss for the year in relation to average number of outstanding shares. Shows the share of profit/loss for the year attributable to each share.

#### Earnings per share, diluted

Profit/loss for the year in relation to average weighted number of shares increased by the amount at full dilution. Shows the share of profit/loss for the year attributable to each share after taking potential shares such as warrants into account.

#### Debt/equity ratio

Total liabilities divided by shareholders' equity. Shows the company's net debt and is used as a measure to measure debt and future financing needs.

#### Equity ratio

Equity as a percentage of total assets. Shows the share of equity in relation to total assets.

#### Net investments

Cash flow from investing activities Shows the amount used to invest in property, plant and equipment during the year.



*Enzymatica's business idea is to develop medical devices based on barrier technology and marine enzymes for self-care in large market segments.*

*Using successful sales in Scandinavia as a base, strengthened by patents and proven efficacy through patient studies, these products will be attractive to distribution partners in the rest of the world.*



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