



Q3 2018 Presentation

18.10.2018, Oslo

Agenda

- **Highlights**
- **Beta-glucans**
 - Animal- and Consumer health
 - Cancer
 - Advanced wound care
- **Enzymes**
 - Molecular and new markets
- **Q3 Financials**
- **Outlook for 2018**



Biotec in brief

A corporation with two independent versatile technology platforms who both benefit from underlying market growth

Beta-glucans

- A common unique technology platform with immune modulating products for improved outcome
- Woulgan proven to reactivate wound healing and with commercial progress in key markets
- An adjuvant in selective cancer treatments

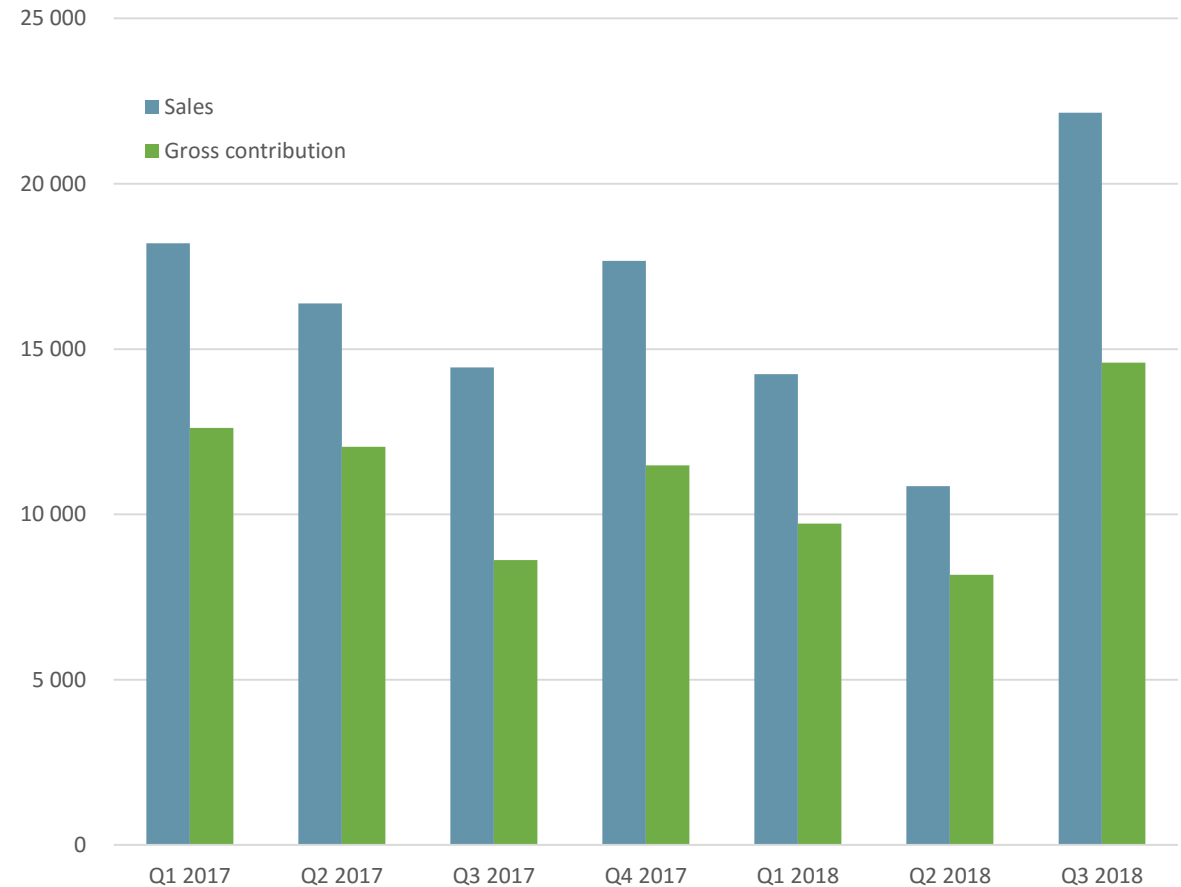
Enzymes

- Fast growing business that is developing and selling unique enzymes for tomorrows personalized healthcare:
 - DNA sequencing
 - Gene therapy
 - Diagnostics

Highlights Q3 2018

- Q3 sales of MNOK 22.1 (14.4)
- EBITDA of MNOK -0.2 (-7.3)
- ArcticZymes secured first supply agreement for SAN in gene therapy
- New VP wound Care, Finn Ketler
- Woulgan Q3 sales of MNOK 0.9 (0.4)

Sales & Gross contribution



Beta-glucans

Status Woulgan®



- Finn Ketler started as new VP for the Wound Care business.
- Number of Woulgan accounts increasing
 - Sellers focus on increasing number of users & driving adoption of new, additional treatment.
 - Germany experiencing growth despite reimbursement uncertainty.
 - Time span from acceptance of product to be listed on formulary is long.
- Continue exploring additional partners for faster growth of franchise.

Activities in all markets

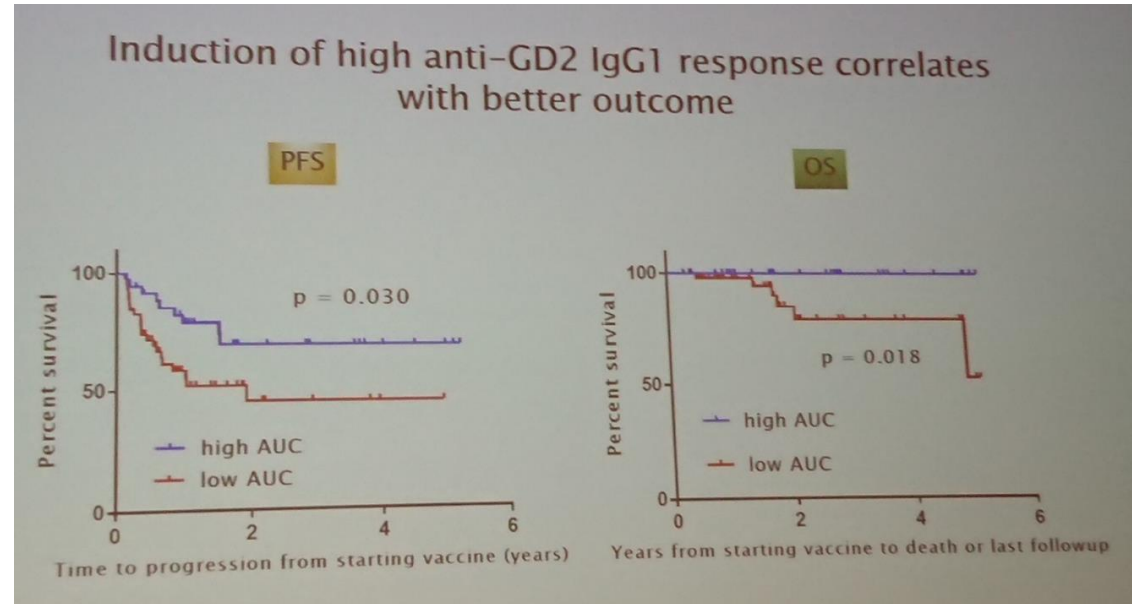


	UK	Nordics	Germany
Clinical	<p>300 patient study manuscript published in September's Journal of Wound Care</p> <p>In ulcer-type wounds, Woulgan shows 62% 12 week healing rates vs. 30% for standard care which continued rise to 92% at week 24 vs 46% for standard care.</p>	<p>2 publications from the Nordic case series in "Sårmagasinet" and "Sår" respectively</p> <p>35 patients with 42 wounds were enrolled across the sites. 10 wounds were excluded. 12 of 32 wounds healed completely and a further 16 wounds had more than 50% size reduction.</p>	<p>No studies ongoing</p>
Market Access	<p>Sales team are working to add Woulgan onto local formularies so clinicians are allowed to use Woulgan</p> <p>To drive fuller adoption and encourage cost-conscious clinicians to use Woulgan, sellers will work to add it onto treatment pathways</p>	<p>Continue to work on tender access.</p>	<p>Sick Funds continue to reimburse Woulgan</p> <p>Ministry of Health in legal action with the G-BA having rejected their proposed changes to dressing reimbursement. No resolution is expected in the short-term</p>
Go-to-market	<p>Woulgan accepted on 5 formularies.</p>	<p>Together with Navamedic, Biotec actively promoting Woulgan in 5Klovern and Kalmar</p>	<p>Experiencing an expansion of customers and increased sales.</p>

SBG[®] in current neuroblastoma vaccine trial

SBG[®] and Neuroblastoma

- High impact indication in children with a large unmet medical need (patient relapsed high-risk neuroblastoma have very poor prognosis)
- Development of an effective therapy to treat and prevent relapsed neuroblastoma highly desired
- Proof of concept study for use of SBG[®] as adjuvant in immunotherapy of cancer



Progression-Free Survival (left) and Overall Survival (right) of the 84 study patients from the start of the vaccination. Low responders (red line) and high responders (blue line) to vaccine measured as antibody titer (AUC) after vaccination and SBG treatment.

Data from trial presented at Advances in Neuroblastoma Research 2018 at 9-12 May in San Francisco

- Improved outcome correlate with immune response to vaccine (high AUC versus low AUC)
- SBG seem to induce improved immune response and higher antibody titer towards the vaccine

Vaccine trial outcome (Cheung et al presented at ANR 2018).

SBG® in immunotherapy of neuroblastoma

Clinical trials of the bivalent ganglioside vaccine in combination with SBG® for high-risk neuroblastoma

2009 – 2013 Phase I Safety	2013 – 2016 Phase I/ II Efficacy	2016 – 2019 Phase II Efficacy	2020 – 2021 Phase II/III Efficacy
≥2nd remission patients	≥2nd remission patients	≥1st remission patients	Multi-site Randomised Controlled Trial ≥1st remission patients
15 patients. Results published in Clinical Cancer Res 2014	84 patients. Initial results presented at ANR18 in San Francisco May 2018.	115 additional patients to be included (215 in total). About 100 included by end Sept 2018.	
Safety in relapsed patient population	Efficacy in relapsed patient population.	Commence initial approval process in co- operation with clinicians and vaccine owner	Possible approval of combined treatment for relapsed neuroblastoma

Activities for M-Glucan® and M-Gard®

Over 20 years experience with immune-modulating beta-glucans

Animal health

- Sales experiences annual and seasonal fluctuations driven by demand for health feed within the aquaculture sector.
- Difficult for Biotec to influence consumption in the aqua marine sector as M-Glucan® is sold as integral part of an animal feed product.
- Our brand is strong in terms of quality, documentation and security of supply, but the aqua marine feed market is under pressure.

Consumer Health:

- Have in 1H 2018 passed 2017 annual sales.
- Actively working on expanding the customers base – participating in fairs etc.
- Potential new customers perform stringent due-diligence as part of purchasing processes.
- Have retained new regular customers in Asia.



ArcticZymes

Molecular and new markets

Commercial Updates

Combination of factors attributed to third quarter performance:

- New business development team in full force
- Re-establishment of sales of our main product to ArcticZymes largest customer:
 - ✓ Orders received to replenish sequestered stocks
 - ✓ Mutual efforts ongoing to achieve a more regular supply and provide greater visibility to supply chain needs
 - ✓ Over next few years expect a reduction in quarterly fluctuations as business grows
- Steady growth in the SAN-HQ business
- Two new supply agreements secured



First Supply Agreement

- 1st supply agreement with a major Molecular Diagnostics (MDx) company who has integrated Shrimp Alkaline Phosphatase (SAP) into their liquid biopsy tests
- Customer is a global leader in non-invasive oncology and prenatal testing
- As business matures sales will be in the range of 1-2 MNOK per year
- Onsite customer audit earlier in the year was a key deal factor: AZ's focus on quality manufacturing and recent ISO13485 certification led to a successful audit
- Customer has confidence that AZ is a premium OEM supplier
- Paved the way for several future deal opportunities relating to the customers' new diagnostic test developments



Second Supply Agreement

- 1st supply agreement for utility of Salt Active Nuclease (SAN-HQ) in the cGMP manufacturing of viruses for gene therapy. Milestone achievement for ArcticZymes
- The undisclosed customer is a leading pioneer in the rapidly growing gene therapy market
- Unlike traditional therapeutics, gene therapy provides a realistic opportunity to cure devastating childhood genetic diseases and cancers by using viruses to modify DNA within a patient's cells.
- Expected average annual sales will range between 1-3 MNOK
- Other similar deals in the pipeline. Anticipate approx. 10-20+ customers will lock down their large-scale cGMP manufacturing processes with SAN-HQ over the next 3 years

A wide range of bioreactors are used in upscaling cGMP manufacturing



For illustration purposes only. Source: <https://www.sartorius.com>

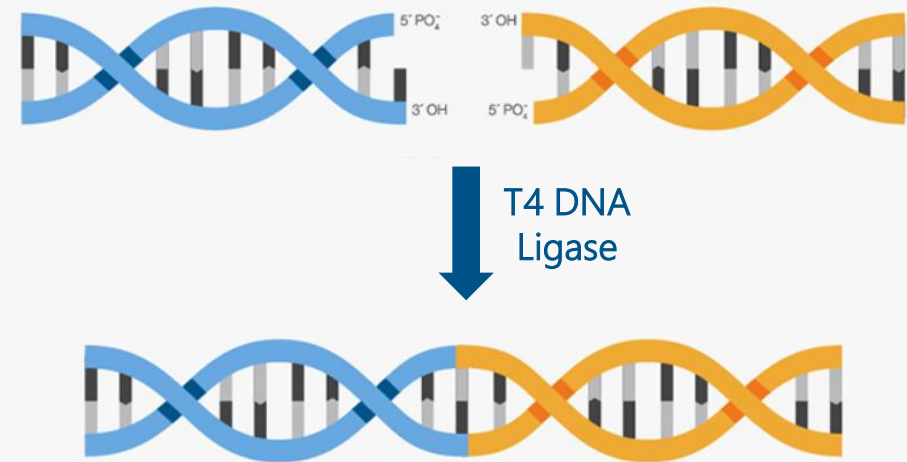
cGMP (current Good Manufacturing Practice) regulations are relevant when a drug leaves the laboratory and enters into production. cGMP regulations assure proper design, monitoring, and control of manufacturing processes and facilities.

Innovation Update

- Prototypes of our novel ligases have been sent to several key customers for evaluation
- High market demand for novel ligases; especially within our existing customer base
- Ligases represent the 2nd largest molecular enzyme market segment (1 BNOK in 2017) and have the 2nd highest growth rate (14% CAGR)
- The market is largely dominated by T4 DNA ligase which is a generic and commodity enzyme
- ArcticZymes will open up new possibilities for their utility by launching novel ligases
- Launch of our first novel ligase is anticipated during the next 3-6 months
- Fits synergistically alongside AZ's other novel enzymes

Function of Ligases

- Ligases are enzymes that join together genetic material
- DNA ligases join together DNA fragments



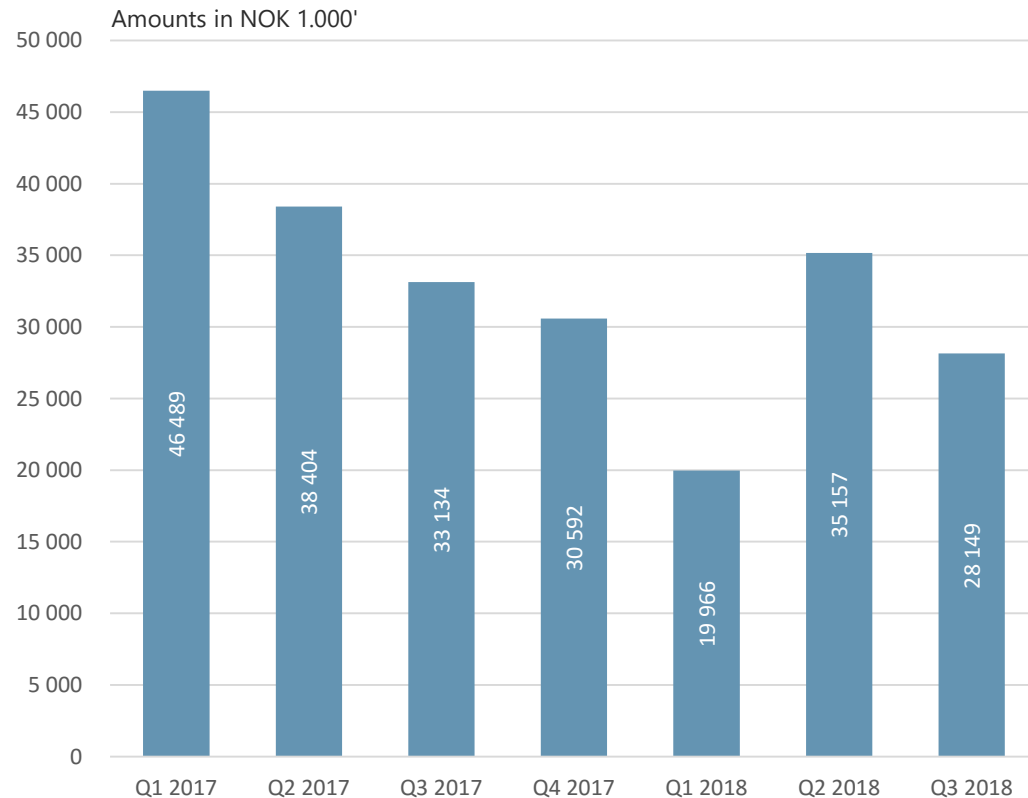
- Wide range of applications such as cloning, sequencing and synthetic biology (*building synthetic genomes and organisms in the test tube*)

Adapted from <https://www.thermofisher.com/no/en/home/life-science/cloning/cloning-learning-center/invitrogen-school-of-molecular-biology/molecular-cloning/cloning/traditional-cloning-basics.html>

Q3 Financials

Cash flow explained by increase in receivables

Net cash position



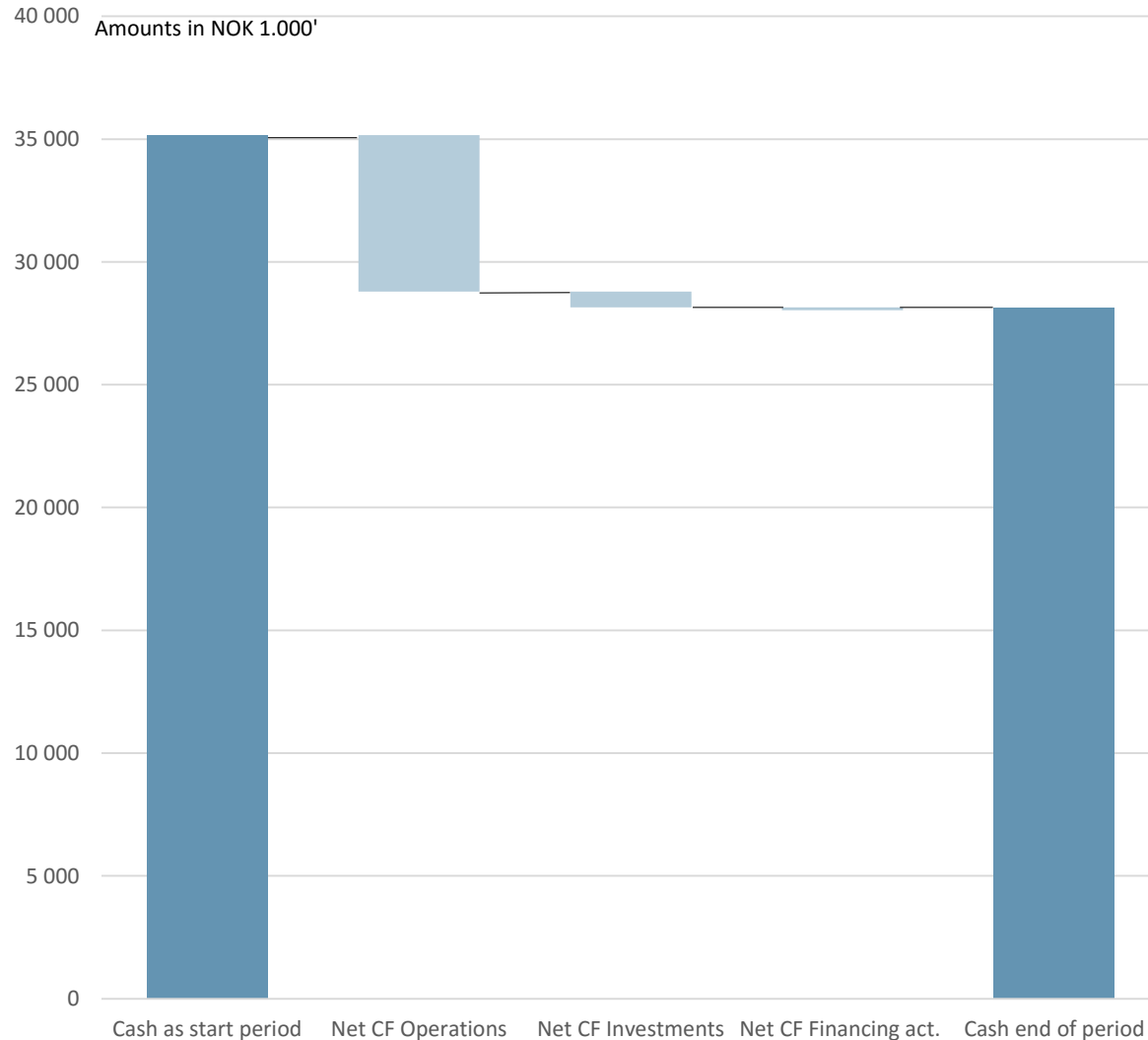
Third quarter changes in cash of -7.0 MNOK

- 22.3 (19.1) MNOK in short-term receivables
- 12.8 (15.3) MNOK in short-term payables

Cash balance of 28.1 MNOK end of Q3 2018

Q3 2018 Cash flow detailed

Q3 2018 Cash flow

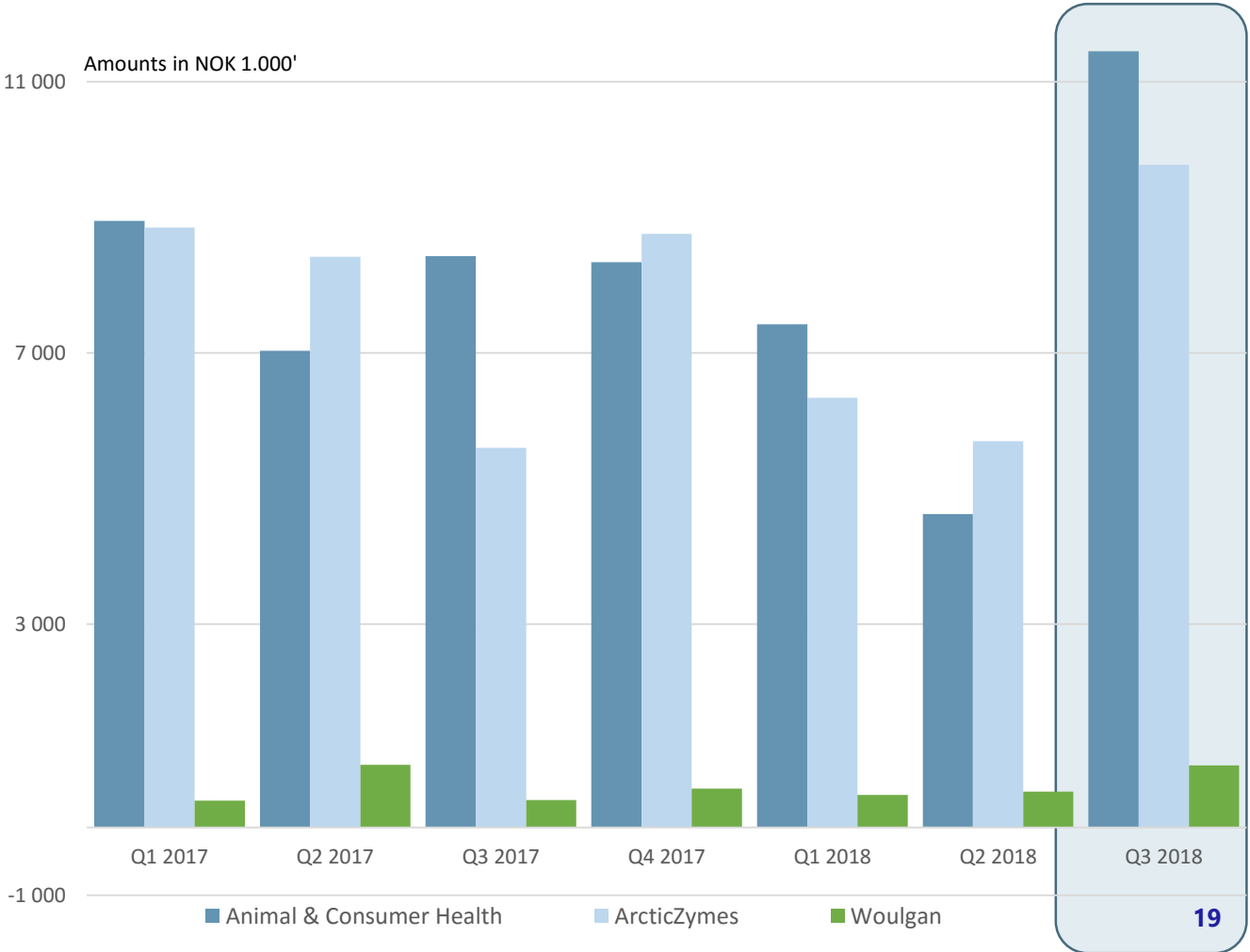


- Q3 2018 Cash flow from operations -6.4 MNOK
 - Explained by change in working capital of
 - Receivables -8.6 MNOK
 - Payables 2.0 MNOK
 - Inventory 0.3 MNOK
- Q3 2018 Cash flow from investments -0.6 MNOK
 - Investment of MNOK 0.25 in intangible assets
- Q3 2018 Cash flow from financing 0 MNOK
 - Private placement of 4.4 million new shares in Q2

Good Q3 sales in all segments

Segment	Q3 Sales
ArcticZymes	MNOK 9.7
Animal & Consumer Health	MNOK 11.5
Woulgan	MNOK 0.9
Group	MNOK 22.1

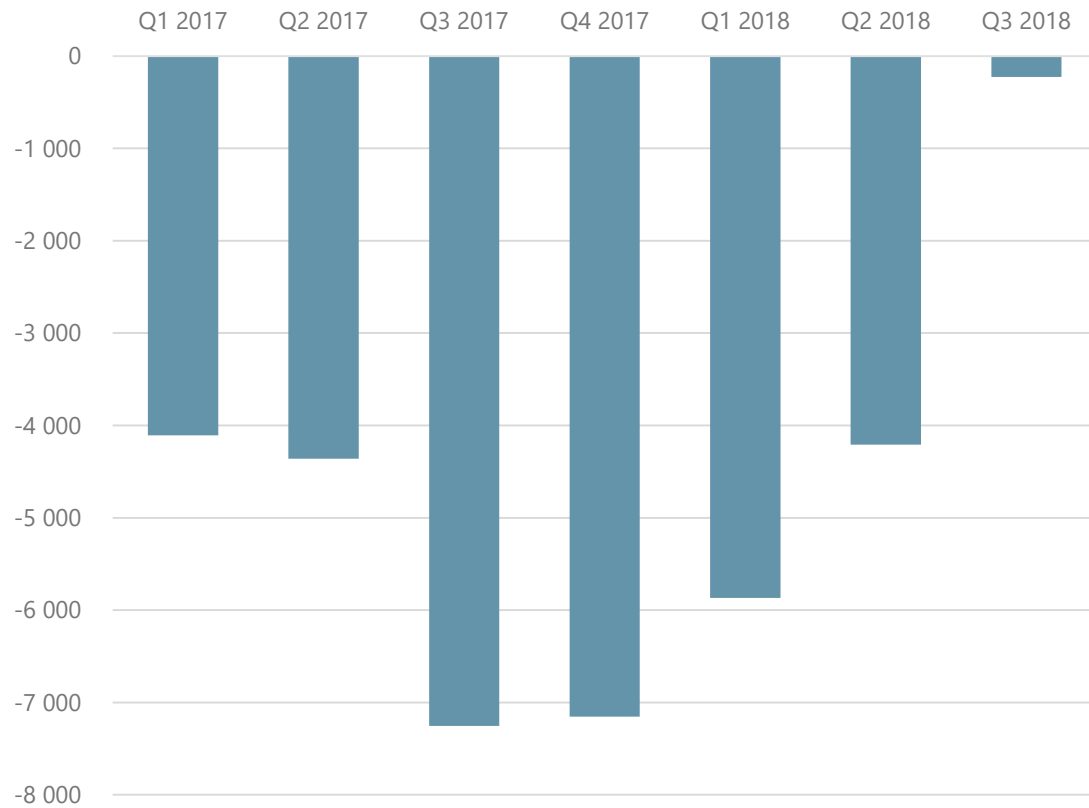
Biotec revenues per segment



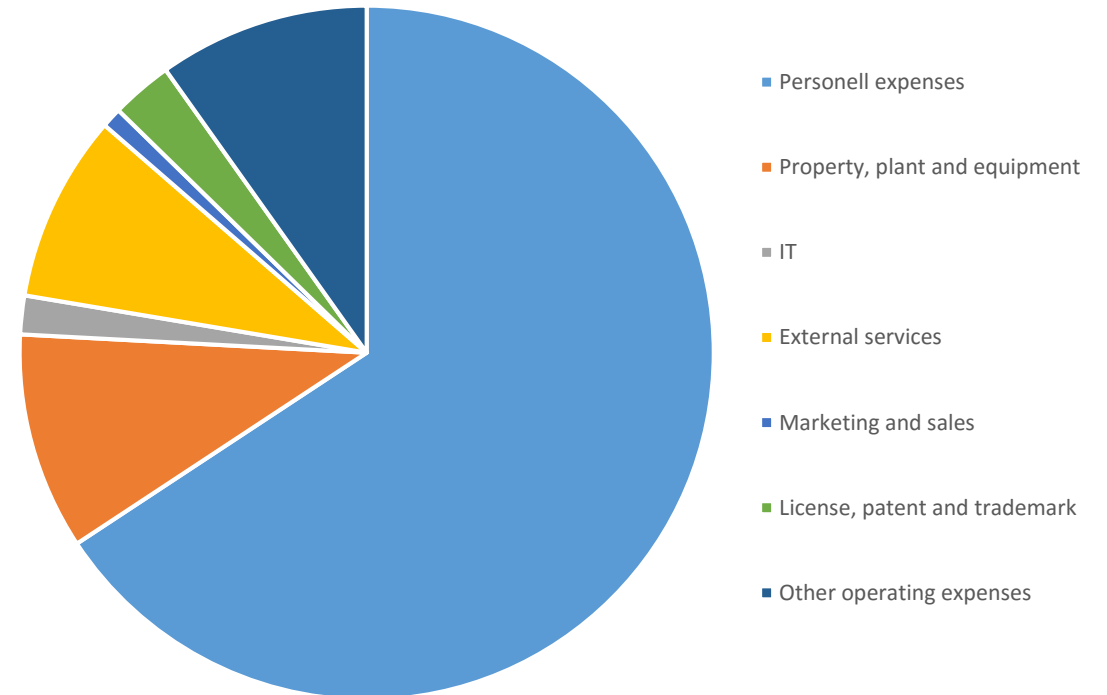
Solid quarter with improved EBITDA

EBITDA

Amounts in NOK 1.000'



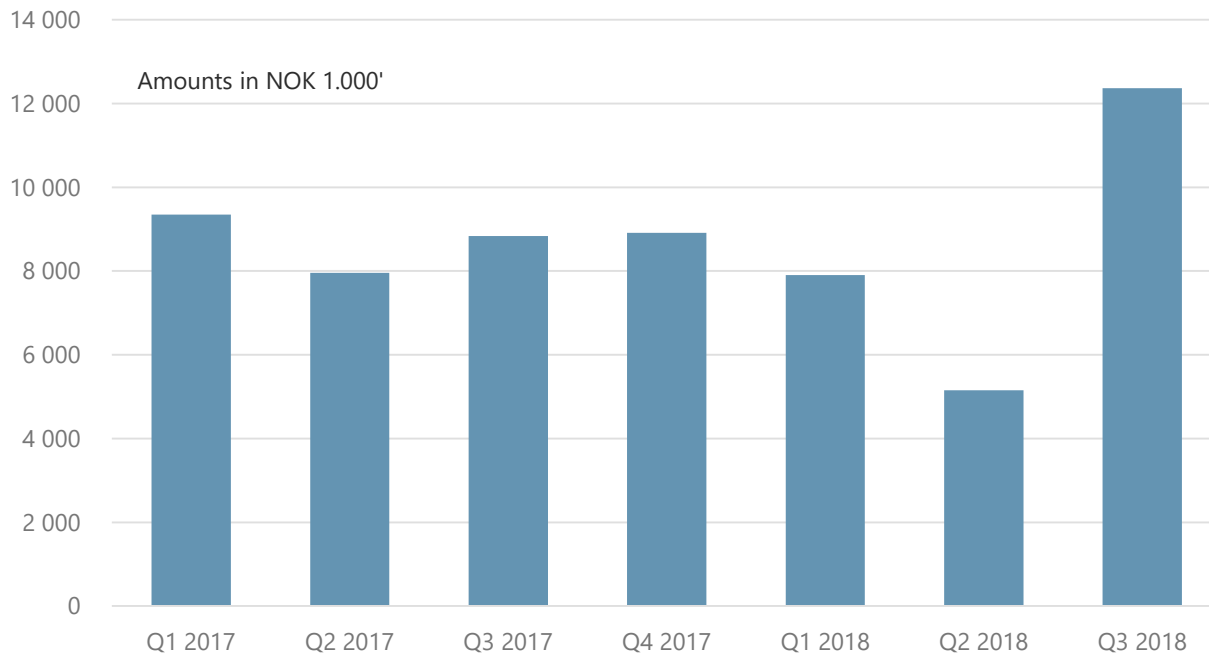
Operating Expenses



Beta-Glucan performance

Beta-Glucans	Q3		YTD	
(Amounts in NOK 1.000)	2018	2017	2018	2017
Sales revenues	12 372	8 835	25 447	26 140
Gross profit	5 033	3 081	11 283	10 171
Operating expenses	-7 955	-8 653	-22 834	-26 344
EBITDA	-2 423	-4 795	-10 053	-14 060

Sales per quarter

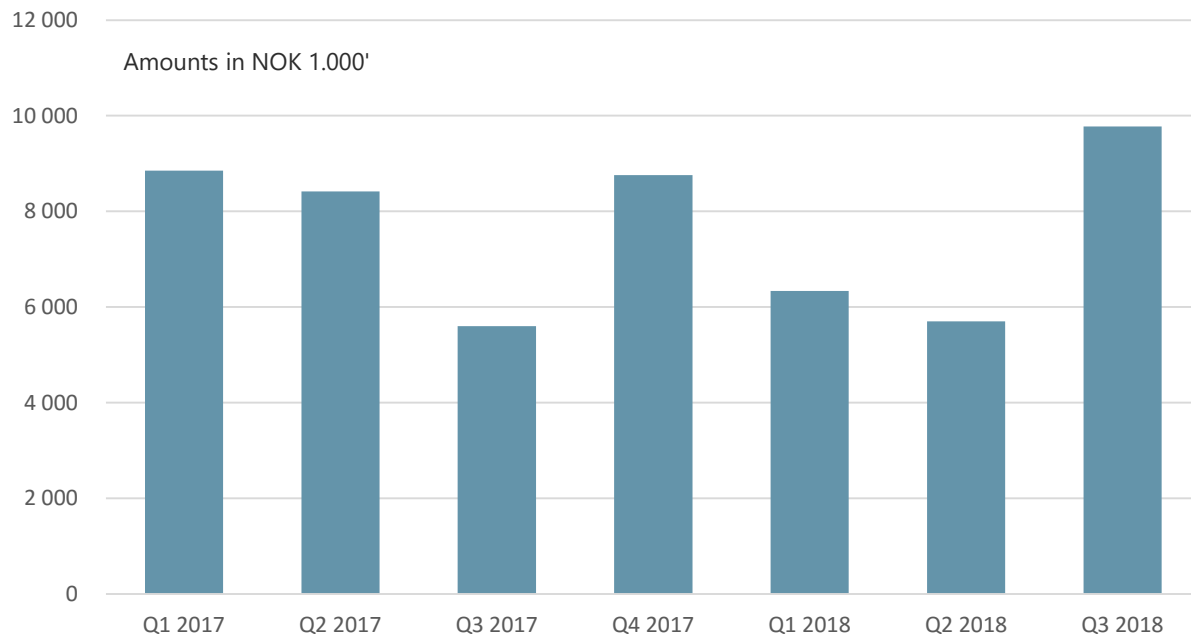


- Sales continues to be driven by Animal Health.
- Reduced expenses on an quarterly basis primarily related to personnel and marketing
- Woulgan sales are stronger that previous quarters
- EBITDA continuous to be improved due to favourable product mix and cost control

ArcticZymes performance

Enzymes <i>(Amounts in NOK 1.000)</i>	Q3		YTD	
	2018	2017	2018	2017
Sales revenues	9 776	5 602	21 814	22 871
Operating expenses	-6 940	-7 334	-20 741	-21 424
EBITDA	3 064	-750	3 044	4 411

Sales per quarter



- Improvement of 4.2 MNOK in quarterly sales compared to same quarter in 2017
- Operating expenses decreased compared to Q3 2017 due to reduction in personnel and IP expenses
- EBITDA significantly improved due to strong sales and cost control

Outlook 2018

Outlook 2018

- Overall sales growth versus 2017 uncertain
- Reduction in cash consumption
- Review of Woulgan go-to-market model to ensure further growth
- AZ aims to grow the business organically while also looking for inorganic growth opportunities

