






# **The transformational power of enzymes:** Solutions for sustainable animal farming

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Our purpose

**T**  **GETHER** WE  
FIND  
**BIOLOGICAL**   
ANSWERS FOR  
BETTER **LIVES** IN A  
GROWING  
**WORLD**   
LET'S RETHINK TOMORROW



# Novozymes in numbers

**6,000+**

employees

**700+**

products

**30+**

different industries

**130**

countries

**6,500**

patents

**18.9%**

ROIC

**14,012**

sales (DKK million)

**26.1%**

EBIT margin



# New challenges in the global feed industry call for new pathways in animal production

Growing population  
=  
more animal protein



Land scarcity  
and biodiversity loss



Antibiotic phase-out



Diseases impacting  
lifetime performance



Limited  
natural resources



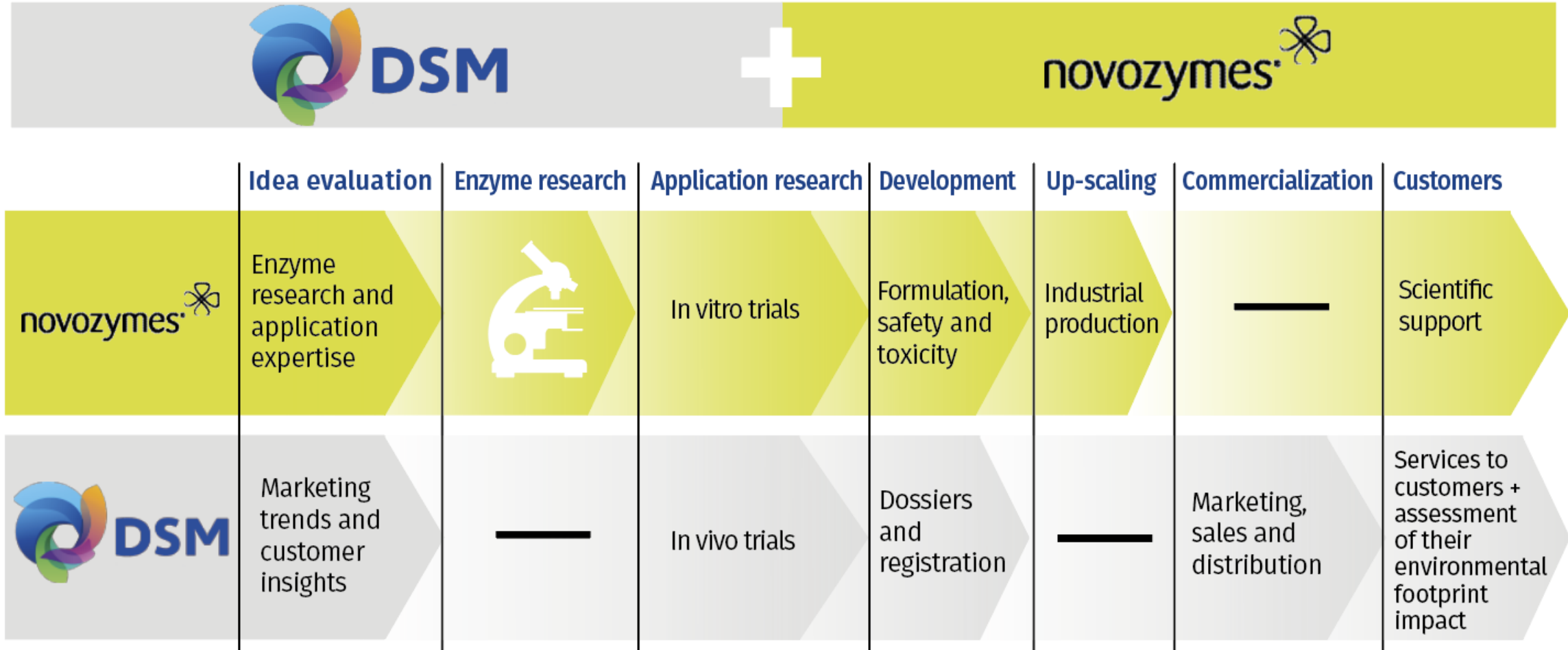
Environmental  
restrictions and  
planetary boundaries



novozymes 



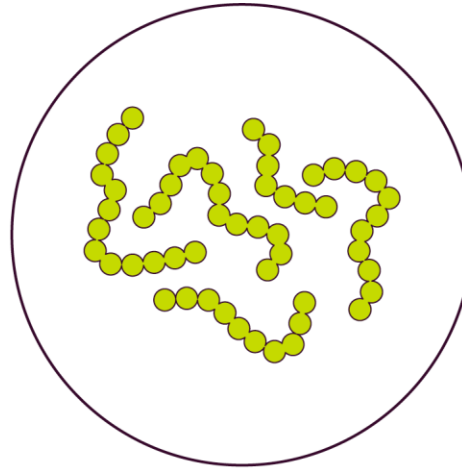
# The combined strength of two leaders










**How can enzymes  
improve animal feed?**

## Enzymes



-  **Increase efficiency**
-  **Lower feed cost**
-  **Better performance**
-  **Reduce impact on the environment**
-  **Animal nutrition**



# Balancius™

It's all in the detail

## A Game Changing Innovation





# What makes Balancius® novel and unique?

- Unlike any other feed enzyme in the market today
- Not targeting substrate present in the feed
- Meets all criteria of a premium feed enzyme product
- Unique mode-of-action targeting dead bacterial biomass accumulation in the gastrointestinal tract
- Additional value propositions beyond animal performance



# Peptidoglycan present in the GIT



**Gut bacterial biomass**

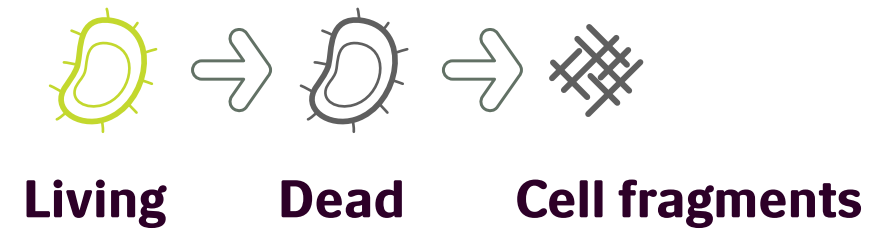
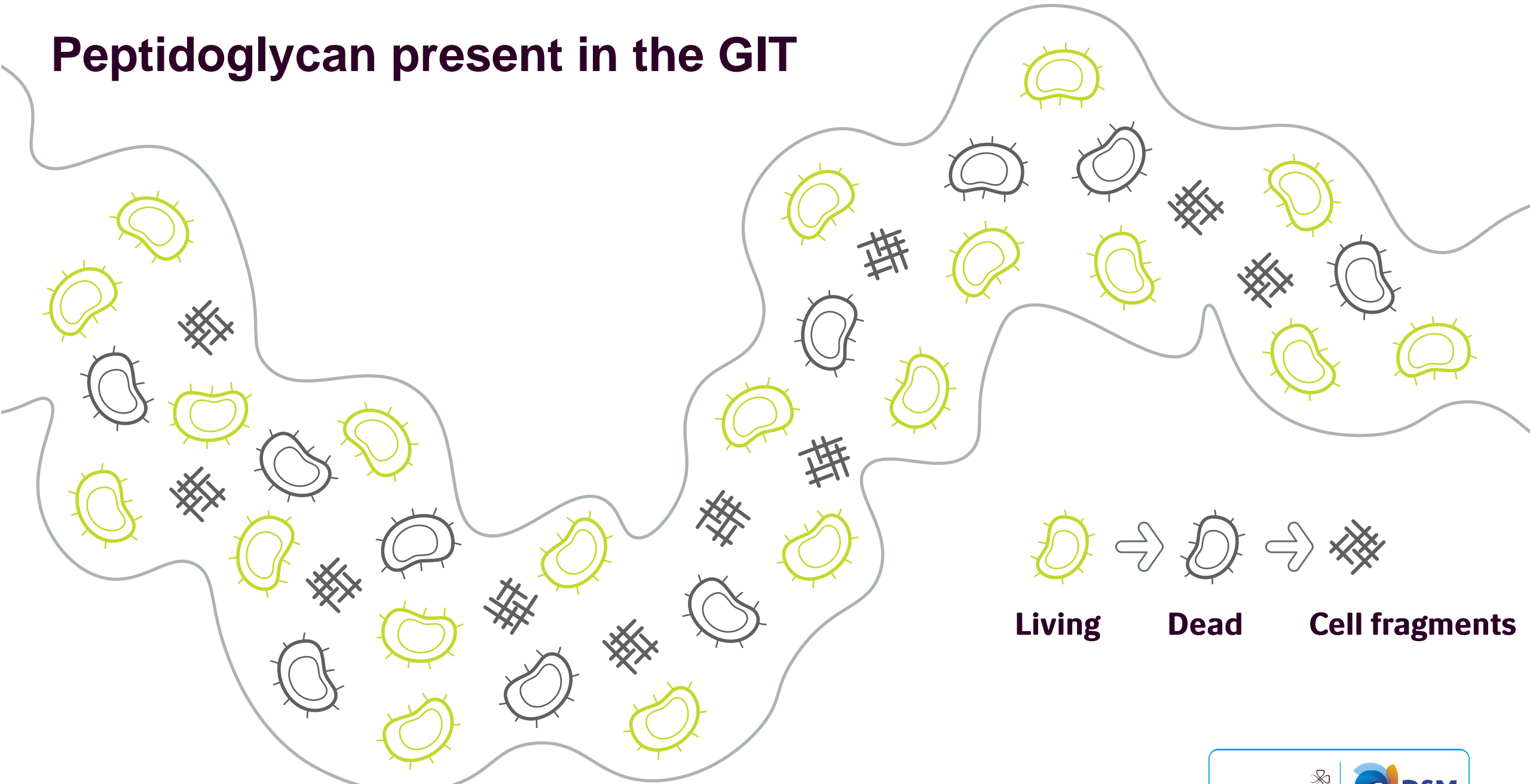
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**Live bacteria**

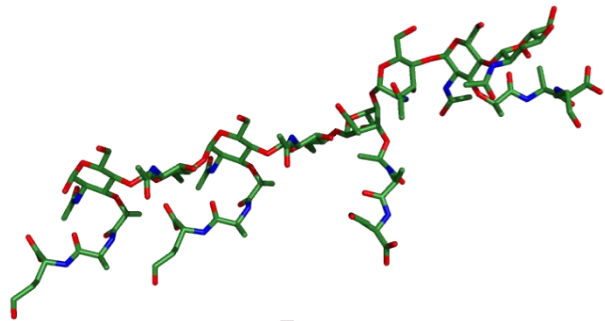
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**Dead bacteria (whole cells + fragments)**

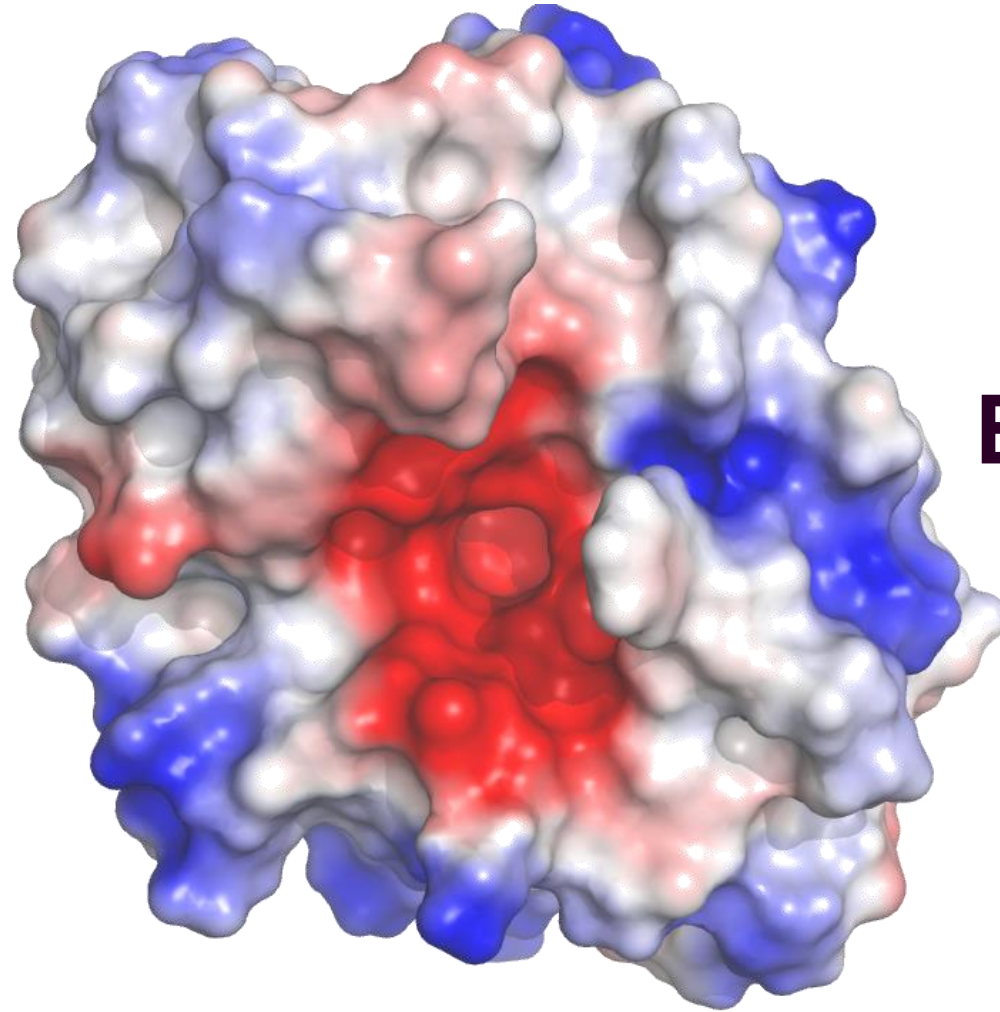
# Peptidoglycan present in the GIT



# How muramidases break down peptidoglycan

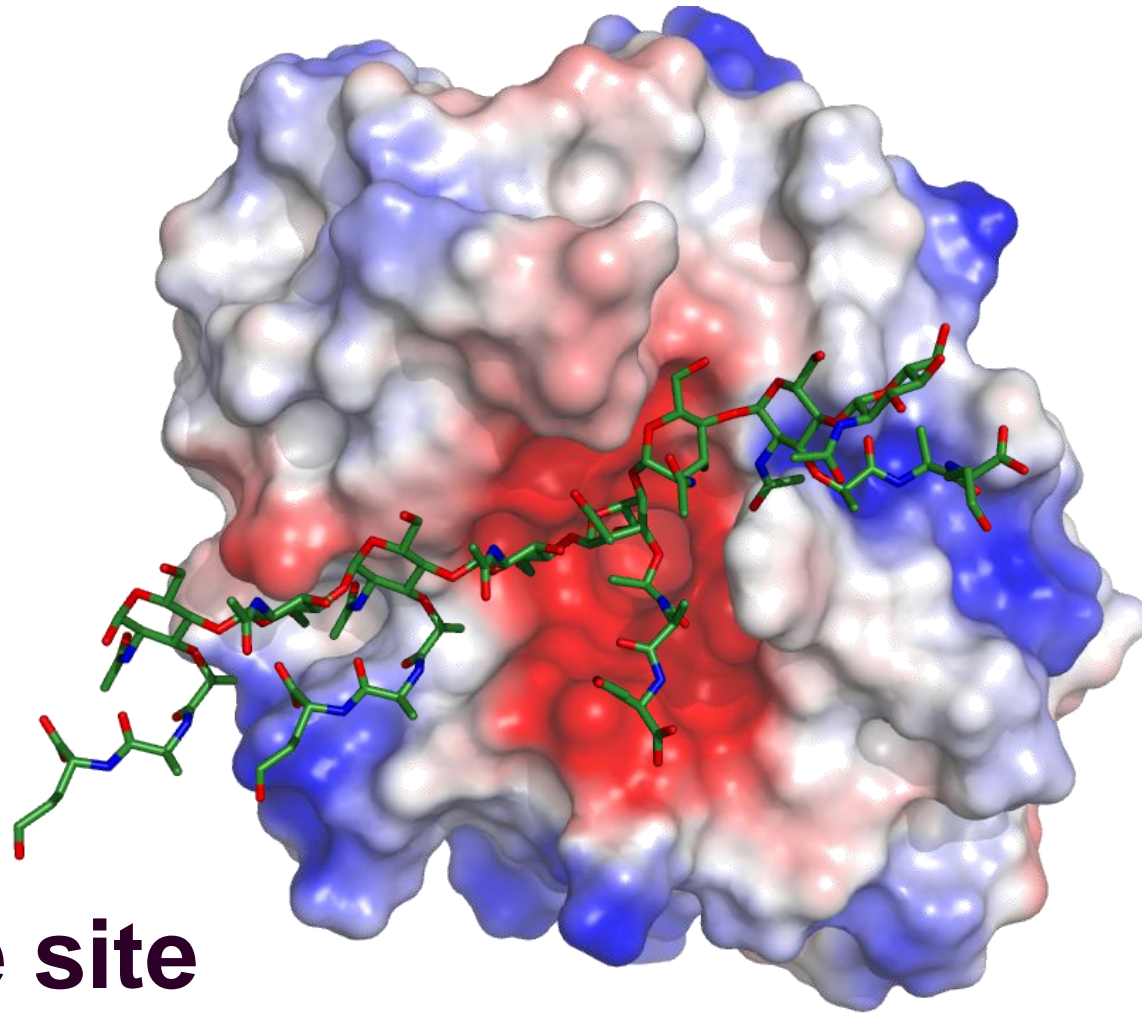


**Peptidoglycan**



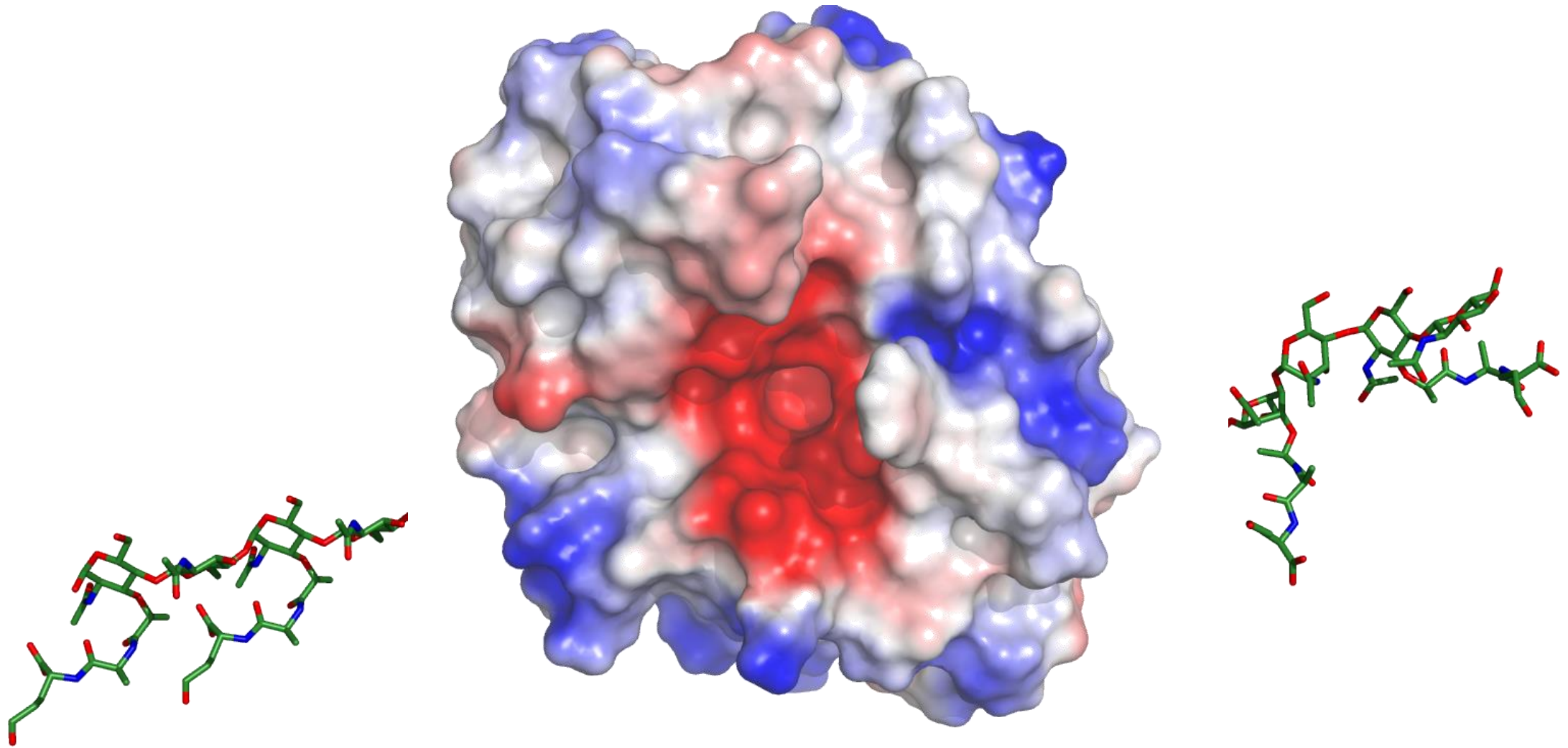
**Balancius®**

# How muramidases break down peptidoglycan



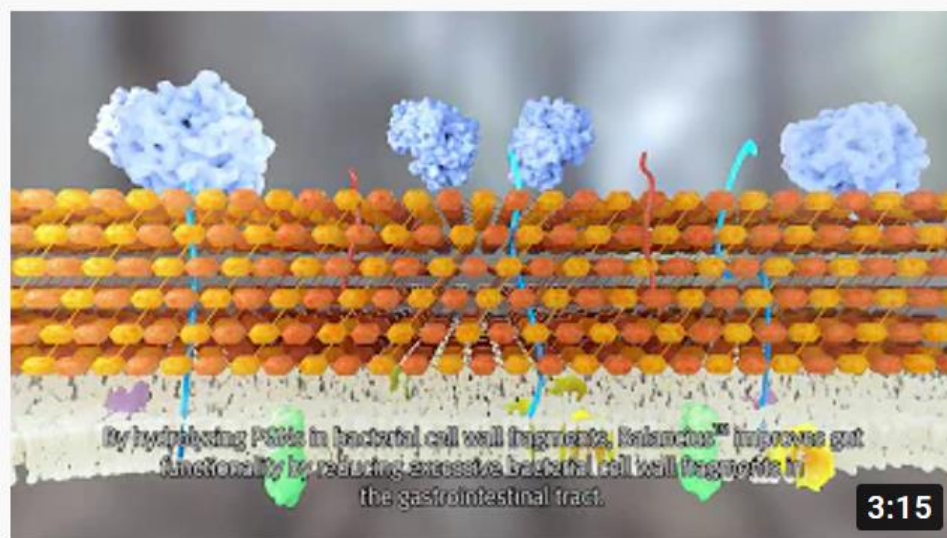
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# How muramidases break down peptidoglycan



**Balancius cleaves peptidoglycan**

# Balancius® Mode of action video available on YouTube



## The unique Balancius™ mode of action - It's all in the detail

3.9K views • 2 years ago



DSM Animal Nutrition & Health

Poultry production faces increasing challenges. There are so many things to consider that it can be hard to find the balance ...

<https://youtu.be/Wd93YLxS78E>

novozymes



# Together with our customers we help shape the future of farming

- Improving animal nutrition and health
- Improving the sustainability of the industry through the efficient use of natural resources
- Providing thought leadership and consistently bringing new innovations to market at scale for transformational change
- Setting our sights higher than ever as we move forward into a new decade of our market-shaping alliance

Working together with our customers to create the future of animal farming.

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novozymes®   
Rethink Tomorrow