



# Molecular microbiological identification and typing

**Course 17-18 January 2018**

Molecular analysis methods used for identification and typing of microorganisms are important to determine properties of the microbial strain, e.g. antimicrobial resistance, or to trace outbreaks in the food production chain.

In recent years, novel technologies have been introduced based on thorough investigations of the nucleic acid content (DNA/RNA) of the microorganism.

This course provides you with an overview of some of these techniques and gives advice on how to interpret the complex data that are generated.

The course focuses on quantitative PCR, whole genome sequencing and metagenomics. Some examples of software and approaches to data analysis of sequencing data will be provided.

## Who should attend this course?

The target group for this course includes persons with experience with microbiological analysis methods in e.g. the food or pharmaceutical industry, who needs

increased knowledge about methods used for microbial identification, with focus on new DNA/RNA based analysis techniques.

We recommend that you have good knowledge and experience with microbiological laboratory work.

## Learning objectives

After attending this course, participants will have obtained knowledge about molecular methods for identification and typing of microorganisms.

## Content

Focus in the course is on novel molecular techniques such as qPCR, whole genome sequencing and metagenomics. Some tools for data analysis will also be demonstrated.

## Course leaders

Charlotta Löfström & Erik Nygren, RISE Agrifood and Bioscience

Johanna Edlund & Filip Stern, TATAA Biocenter

## Program

### Day 1- Wednesday 17 January

Venue: RISE Agrifood and Bioscience, Frans Perssons väg, Göteborg

- 09.00 Registration and coffee
- 09.30 Presentation of RISE Agrifood and Bioscience, course introduction  
*Charlotta Löfström & Erik Nygren*
- 10.00 Molecular microbiology methods for identification and typing  
*Charlotta Löfström*
- 11.00 Implementation of DNA based methods  
*Charlotta Löfström*
- 12.00 Lunch
- 13.00 Practical: DNA extraction
- 14.00 NGS  
*Erik Nygren*
- 15.00 Coffee
- 15.30 NGS cont.  
*Erik Nygren*
- 16.00 Summary of day 1 and discussion
- 16.30 End of day 1

### Day 2 – Thursday 18 January

Venue: TATAA Biocenter, Odinsgatan 28, Göteborg

- 08.30 Presentation of TATAA Biocenter  
*Johanna Edlund*
- 10.00 Introduction to qPCR  
*Johanna Edlund*
- 11.00 Coffee
- 11.15 Demonstration of instruments and practical qPCR experiment  
*Johanna Edlund*
- 12.30 Lunch

13.30	Introduction to NGS <i>Filip Stern</i>
15.00	Coffee
15.30	NGS cont. <i>Filip Stern</i>
16.00	Evaluation of qPCR experiment and discussion
16.30	End of day 2

## General information

### Time and place

17-18 January 2018, Göteborg, Sweden

17 January 2018  
RISE Agrifood and Bioscience  
Frans Perssons väg 6, Göteborg

18 January 2018  
TATAA Biocenter  
Odinsgatan 28, Göteborg



### Course fee

9 000 SEK excl. VAT per participant  
Course fee includes course literature, course certificate, lunches and coffee.

### Registration

Please register latest 2 January 2018 at <http://www.sp.se/conffood> or <http://www.tataa.com/courses/>

Following registration, an order confirmation will be sent to you by email. Payment can be done with credit card via PayPal or with invoice.

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### Course responsible

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