

Education services

# Keep learning. We've got your back.

**Training at Thermo Fisher Scientific Training centers, at your lab, or online**

It can be challenging to prepare for what's next while you're focused on the work you have now. Our professional, interactive training courses make it easier. We offer a combination of virtual and in-person classroom instruction for your convenience. We also offer hands-on learning in your lab to support your schedule, budget, and learning preferences.

Our courses are delivered by scientists experienced in the field of training and troubleshooting for sequencing, real-time PCR, cell culture and molecular biology techniques. The collective knowledge our team has, combined with our world-class facilities, make Thermo Fisher an ideal choice for your training needs.

- Training for experimental design, data analysis, troubleshooting, and instrument operation
- Hands-on laboratory courses and computerbased training; lecture and discussion sessions
- Direct access to professional application scientists with years of training experience

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## qPCR (Real-time PCR)

| Course title      | Length   | Location      | Reference                          |
|-------------------|----------|---------------|------------------------------------|
| qPCR FAS Training | 1 day    | Customer site | TRAIN-SDS2 (Research applications) |
|                   | 0.5 days | Customer site | TRN00076 (Clinical applications)   |
|                   |          |               | A24615                             |

These training courses provide the knowledge needed to set up, run, and analyze runs on a qPCR instrument, as well as maintenance and calibration protocols to help ensure high-quality results. In addition, one-day trainings include a slideshow session covering general qPCR concepts and chemistries, as well as one specific application, such as gene expression (mRNA or miRNA), absolute quantification, or genotyping (CNV or SNP). These trainings can be adapted from beginner to advanced levels. For any specific request, please contact your application scientist.

|                           |       |        |          |
|---------------------------|-------|--------|----------|
| Virtual qPCR FAS Training | 2 hrs | Online | TRN00310 |
|---------------------------|-------|--------|----------|

This remote session can be used for a software data analysis training or for an interactive consultation to answer all of your questions.

## dPCR (Digital PCR)

| Course title            | Length | Location      | Reference |
|-------------------------|--------|---------------|-----------|
| Absolute Q FAS Training | 1 day  | Customer site | A52632    |

This training course provides an overview of dPCR applications and the fundamental knowledge necessary to operate with the Applied Biosystems™ QuantStudio™ Absolute Q™ Digital PCR System. A laboratory exercise can be included as an introduction to the workflow using a universal starter kit (reagents not included in the Cat. No.). It is possible to add one day or remote hours to focus on a specific application, such as gene expression (mRNA or miRNA), rare events (somatic mutations, fusion transcripts, chimerism, non-invasive prenatal testing), DNA methylation, gene-editing events, GMOs, viral titer dPCR assays, NGS library quantification, microbiology detection/quantification, or genetic diseases.

|                                 |        |        |        |
|---------------------------------|--------|--------|--------|
| Virtual Absolute Q FAS Training | Hourly | Online | A57655 |
|---------------------------------|--------|--------|--------|

This remote session can be used for a software data analysis training with the Applied Biosystems™ QuantStudio™ Absolute Q™ Digital PCR Software or for an interactive consultation to answer all of your questions.

Application-based training courses can cover specific customer requirements such as gene expression and genotyping experiments, or other qPCR application areas. An application scientist from Thermo Fisher will work with the customer to discuss the appropriate content and length of training needed to meet the customer's training requirements. All on-site courses are for 3 people.

## Sanger sequencing

### Research Use Only (RUO) training

|          | Content                                                                                                                                                                                              |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module 1 | Understanding and handling your capillary sequencer, and gaining autonomy on maintenance, backup, calibration and quality control (QC).                                                              |
| Module 2 | Understanding and analyzing amplicon sequencing using Sanger sequencing technology (including Applied Biosystems™ Innovigene™ sequencing analysis software, SeqScape™ software and sequence scanner) |
| Module 3 | Understanding and analyzing Fragment detection like microsatellite, Snapshot, AFLP etc. (including Applied Biosystems™ Innovigene™ and GeneMapper™ software)                                         |
|          | You have the flexibility to customize your training by choosing from three different modules. This allows you to tailor the program to best suit your needs and goals.                               |

| Course title                        | Length | Location      | Reference |
|-------------------------------------|--------|---------------|-----------|
| Genetic Analysis Training 1 Module  | 1 day  | Customer site | TRAINDNE2 |
| Genetic Analysis Training 2 Modules | 2 days | Customer site | TRAINDNE4 |
| Genetic Analysis Training 3 Modules | 3 days | Customer site | TRAINDNE6 |

This one-day training session is designed to provide participants with a comprehensive understanding of one of the modules selected by the customer.

This two-day training session is designed to provide participants with a comprehensive understanding of two of the modules selected by the customer.

This three-day training session is designed to provide participants with a comprehensive understanding of three of the modules selected by the customer.

## MicroArray

| Course title                                      | Length          | Location             | Reference                                     |
|---------------------------------------------------|-----------------|----------------------|-----------------------------------------------|
| <b>CytoScan HD Accel/750 K Accel FAS Training</b> | <b>4 days</b>   | <b>Customer site</b> | <b>000.802</b>                                |
|                                                   | <b>1.5 days</b> | <b>Customer site</b> | <b>000.803 (existing CytoScan users only)</b> |

This course is designed to provide trainees with hands-on experience and training for the Applied Biosystems™ CytoScan™ HD Accel/750K assay, array, and data analysis. The assay training part is designed for a maximum of one trainee, an additional technician may observe. The training includes an overview of the assay procedure, hands-on training on the assay and Applied Biosystems™ GeneChip™ (GCS) 3000 instrument and (first level) Chromosome Analysis Suite (ChAS) software for sample quality control and data analysis.

Training course 000.802 includes 10 hours of remote ChAS training/follow-up and course 000.803 includes 2 hours of remote ChAS training/follow-up.

|                                  |                 |                      |                                                |
|----------------------------------|-----------------|----------------------|------------------------------------------------|
| <b>CytoScan XON FAS Training</b> | <b>4 days</b>   | <b>Customer site</b> | <b>TRN00810</b>                                |
|                                  | <b>1.5 days</b> | <b>Customer site</b> | <b>TRN00800 (existing CytoScan users only)</b> |

This course is designed to provide trainees with hands-on experience and training for the Applied Biosystems™ CytoScan™ XON assay, array, and data analysis. The assay training part is designed for a maximum of one trainee, an additional technician may observe.

The training includes an overview of the assay procedure, days hands-on training on the assay and GeneChip (GCS) 3000 instrument and (first level) Applied Biosystems™ Chromosome Analysis Suite (ChAS) software for sample quality control and data analysis.

|                                           |                 |                      |                |
|-------------------------------------------|-----------------|----------------------|----------------|
| <b>OncoScan CNV/CNV Plus FAS Training</b> | <b>2.5 days</b> | <b>Customer site</b> | <b>000.878</b> |
|-------------------------------------------|-----------------|----------------------|----------------|

This course is designed to provide trainees with hands-on experience and training for the Applied Biosystems™ Oncoscan™ CNV and Oncoscan™ CNV Plus assay, array, and data analysis. The assay training part is designed for a maximum of one trainee, an additional technician may observe. The training includes an overview of the assay procedure, days hands-on training on the assay, and GCS 3000 instrument and (first level) Chromosome Analysis Suite (ChAS) software for sample quality control and data analysis.

|                                     |               |                      |                                          |
|-------------------------------------|---------------|----------------------|------------------------------------------|
| <b>Gene Expression FAS Training</b> | <b>3 days</b> | <b>Customer site</b> | <b>000.825 (GCS 3000/ GCS3000 Dx V2)</b> |
|                                     | <b>4 days</b> | <b>Customer site</b> | <b>000.824 (GeneTitan)</b>               |

These courses are designed to provide trainees with hands-on experience and training on the gene expression assay, arrays and data analysis. The assay training part is designed for a maximum of one trainee, an additional technician may observe.

The training includes an overview of the assay procedure and hands on training on gene expression assays, including the instrument and Transcriptome Analysis Software (TAC) sample quality control and differential gene expression data analysis.

|                                                   |               |                      |                |
|---------------------------------------------------|---------------|----------------------|----------------|
| <b>Axiom V2.0 &amp; Axiom Propel FAS Training</b> | <b>5 days</b> | <b>Customer site</b> | <b>000.804</b> |
|---------------------------------------------------|---------------|----------------------|----------------|

This training is designed for a maximum of one trainee for Applied Biosystems™ Axiom™ v2.0 manual or automated instrument and two trainees for Applied Biosystems™ Axiom™ Propel instrument, an additional technician may observe. The training includes an overview of the assay procedure, hands-on-training (manual or automated) on the assay and Applied Biosystems™ GeneTitan™ instrument and (first level) analysis software for sample quality control and data analysis.

|                                |               |                                      |                 |
|--------------------------------|---------------|--------------------------------------|-----------------|
| <b>Microarray FAS Training</b> | <b>1 day</b>  | <b>Customer site</b>                 | <b>000.398</b>  |
|                                | <b>1 day</b>  | <b>Thermo Fisher Training Center</b> | <b>000.826</b>  |
|                                | <b>Hourly</b> | <b>Online</b>                        | <b>TRN00397</b> |

These interactive training courses are designed to provide customized training based on trainee needs. The one-day training can be used, for example, for application introductions or refreshers onsite or in a Thermo Fisher training center. The remote online training can be used for remote software data analysis training. The number of hours depends on the content that will be covered. Included content is prearranged with a field application scientist.

## Next-generation sequencing

### Research Use Only (RUO) instrument & application trainings

| Genexus trainings                                                                                                                                                                                                                                                                                                                                                                     |        |               |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------|-----------|
| Course title                                                                                                                                                                                                                                                                                                                                                                          | Length | Location      | Reference |
| Genexus System SmartStart Orientation                                                                                                                                                                                                                                                                                                                                                 | 2 days | Customer site | TRN00330  |
| Ion Torrent™ Genexus™ instrument workflow training. Including introduction to NGS for new users and overview of both hands-on workflow and software. Enables users to handle instrument workflow steps and Ion Torrent™ Genexus™ software and interpret key run metrics & QC.                                                                                                         |        |               |           |
| Genexus Purification System SmartStart Orientation                                                                                                                                                                                                                                                                                                                                    | 1 day  | Customer site | TRN00331  |
| Genexus Purification System instrument workflow introduction and training, Genexus purification/Genexus software and interpret key run metrics & QC.                                                                                                                                                                                                                                  |        |               |           |
| Ion torrent trainings                                                                                                                                                                                                                                                                                                                                                                 |        |               |           |
| Course title                                                                                                                                                                                                                                                                                                                                                                          | Length | Location      | Reference |
| Ion System Operation Training                                                                                                                                                                                                                                                                                                                                                         | 2 days | Customer site | 4476720   |
| Full Ion Torrent™ instrument workflow training. Including introduction to NGS for new users and overview of both hands-on workflow as well as software. Enables users to handle both Ion Chef™ and Ion GeneStudio™ S5 instruments workflow steps as well as Ion Torrent Suite™ software and interpret key run metrics & quality control. Ideal to start with Ion Torrent™ technology. |        |               |           |
| Ion FAS Training                                                                                                                                                                                                                                                                                                                                                                      | 1 day  | Customer site | TRN00230  |
| Customized 1-day onsite training on Ion Torrent applications. Can be combined with Ion Torrent™ SmartStart™ training for the Applied Biosystems™ GeneStudio™ S5 to include wet-lab library preparation. Perfect if you need to develop a custom library construction workflow.                                                                                                        |        |               |           |
| Ion AmpliSeq Training                                                                                                                                                                                                                                                                                                                                                                 | 1 day  | Customer site | TRN00280  |
| This 1-day course features classroom and laboratory sections for Ion AmpliSeq™ library construction. Course covers hands-on lab training of ultra-high multiplex PCR of targets using Ion AmpliSeq™ technology, adapter ligation, amplification, and quantification methods. Ion AmpliSeq™ Custom Primer Pools and Ion AmpliSeq™ ready-to-use panels are also covered.                |        |               |           |

## Protein & cell analysis

### Flow cytometry and cell sorting

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Length        | Location             | Reference       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----------------|
| <b>Attune Xenith System Operation Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>3 days</b> | <b>Customer site</b> | <b>TRN00390</b> |
| This interactive course focuses on basic operation and maintenance of the Invitrogen™ Attune™ Xenith™ Flow Cytometer, which includes the following topics: introduction/review of flow cytometry concepts, Attune Xenith Flow Cytometer instrument system overview, experiment setup and data acquisition, spectral unmixing and conventional compensation workflows, post-acquisition analysis tools, single-color and multicolor exercises, advanced software tools, system maintenance, data management, and troubleshooting. |               |                      |                 |
| <b>Attune Cytpix System Operation Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>3 days</b> | <b>Customer site</b> | <b>TRN00380</b> |
| This interactive course focuses on basic operation and maintenance of the Invitrogen™ Attune™ Cytpix™ Acoustic Focusing Cytometer, which includes the following topics: Introduction/review of flow cytometry concepts, Attune™ Cytpix™ Cytometer instrument system overview, experiment setup and data acquisition, compensation, post-acquisition analysis tools, single-color and multicolor exercises, advanced software tools, system maintenance, data management, and basic troubleshooting.                              |               |                      |                 |
| <b>Attune NxT System Operation Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>2 days</b> | <b>Customer site</b> | <b>A25623</b>   |
| This interactive course focuses on basic operation and maintenance of the Invitrogen™ Attune™ NxT Acoustic Focusing Cytometer, which includes the following topics: Introduction/review of flow cytometry concepts, Invitrogen™ Attune™ NxT Cytometer instrument system overview, experiment setup and data acquisition, compensation, post-acquisition analysis tools, single-color and multicolor exercises, advanced software tools, system maintenance, data management, and basic troubleshooting.                          |               |                      |                 |
| <b>Attune Extended Basic &amp; Applications System Operation Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>1 day</b>  | <b>Customer site</b> | <b>4484604</b>  |
| This course is designed to expand on basic training for the Attune NxT or Cytpix System with a day of extended instruction on use of the instrument, advanced software and data analysis training, or training on a specific application (ex. microbiology, small particles, whole blood phenotyping, multiparametric analysis).                                                                                                                                                                                                 |               |                      |                 |
| <b>Bigfoot Instrument Training Program</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>3 days</b> | <b>Customer site</b> | <b>TRN00381</b> |
| The Invitrogen™ Bigfoot™ Instrument Training Program is designed to provide comprehensive instruction on the operation, maintenance, and application of the Bigfoot instrument. This training is ideal for new users, technicians, and researchers who aim to utilize the instrument for various analytical and experimental purposes.                                                                                                                                                                                           |               |                      |                 |

### Multiplex instrument & assay training

| Course title                                                                                                                                                                                                                                                                                                                                            | Length       | Location             | Reference       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|-----------------|
| <b>Luminex Instrument Basic User Training</b>                                                                                                                                                                                                                                                                                                           | <b>1 day</b> | <b>Customer site</b> | <b>TRN00901</b> |
| This class is designed for new users of the Invitrogen™ Luminex® MagPix, LX200, FlexMap3D™, Intelliflex™, and Intelliflex DR-SE instruments. Basic operation training will cover a review of basic multiplex assay concepts, overview of instrument systems, experiment setup and data acquisition, post-system maintenance, and basic troubleshooting. |              |                      |                 |

### EVOS imaging systems and analysis software

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Length         | Location             | Reference        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|------------------|
| <b>EVOS S1000 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>3 days</b>  | <b>Customer site</b> | <b>TRN00S100</b> |
| This course is designed for any individual responsible for operating the Invitrogen™ EVOS™ S1000 Spatial Imaging System. The first day is fully dedicated to instrument installation and calibration. In the remaining two days, we will cover the basics of the instrument's hardware and software, as well as give an overview of its spectral imaging and unmixing technology. The workflow of 9-plex image acquisition using Invitrogen™ EVOS™ S1000 Imaging Software will be demonstrated, including protocol creation, generation of spectral libraries, automated unmixing, and image review. The training is also intended to offer basic knowledge on other aspects of the spatial proteomics workflow downstream and upstream of image acquisition. Customization of the training is carried out to address the specific needs of the instrument's users. |                |                      |                  |
| <b>EVOS M7000 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>1 day</b>   | <b>Customer site</b> | <b>A31921</b>    |
| This course is designed for any individual responsible for operating the Invitrogen™ EVOS™ M7000 microscopy instrument with or without the Onstage Incubator (OSI). In this training, a basic instrument overview as well as the basis of the Invitrogen™ Celleste™ Analysis software will be covered to help ensure the user is able to obtain the most from their instrument, including image quality and data                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                      |                  |
| <b>EVOS M5000 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>1 day</b>   | <b>Customer site</b> | <b>TRN40109</b>  |
| This course is designed for any individual responsible for operating the Invitrogen™ EVOS™ M5000 microscopy instrument with or without the Onstage Incubator (OSI). In this training, a basic instrument overview as well as the basis of the Celleste Analysis software will be covered to allow the user is able to obtain the most from their instrument, including image quality and data                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                      |                  |
| <b>Celleste Analysis Software Advance Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>4 hours</b> | <b>Online</b>        | <b>TRNRMT01</b>  |
| During this virtual training, an in-depth overview of the Celleste Software will be completed to help ensure users obtain the maximum from their analysis software.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                      |                  |

## Microplate readers and western blot imaging

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Length        | Location             | Reference       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----------------|
| <b>Varioskan Lux SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>1 day</b>  | <b>Customer site</b> | <b>TRN00320</b> |
| This course is designed for any individual responsible for operating the Thermo Scientific™ Varioskan™ Lux reader. In this training, a basic instrument overview as well as Thermo Scientific™ SkanIt™ software will be covered to help ensure the user is able to obtain the most from their instrument and obtain the best quality of their own experiments.                                                                                                                                                                      |               |                      |                 |
| <b>Microplate Reader Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>1 day</b>  | <b>Customer site</b> | <b>TRN00325</b> |
| This course is designed for any individual responsible for operating a Thermo Scientific™ microplate reader. In this training, a basic instrument overview as well as SkanIt software will be covered to allow the user is able to obtain the most from their instrument and obtain the best quality of their own experiments.                                                                                                                                                                                                      |               |                      |                 |
| <b>SkanIt Software</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Hourly</b> | <b>Online</b>        | <b>TRN00326</b> |
| In this training session, we will complete an in-depth overview of SkanIt software for users of our multi-mode readers (Varioskan LUX and Varioskan ALF readers) and our single-mode readers (Thermo Scientific™ Multiskan™ readers). This training will review the software setup and data analysis for the most common applications.                                                                                                                                                                                              |               |                      |                 |
| <b>iBright CL/FL 1500 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>1 day</b>  | <b>Customer site</b> | <b>A34016</b>   |
| This course aims to provide the participant with a comprehensive and exhaustive understanding of how to operate the Invitrogen™ iBright™ imaging system, from installation to analysis software. Attendees will benefit from working with their own instrument and in their own lab environment while interacting with an application scientist during lectures and hands-on lab exercises. The training includes the familiarization of the software features aimed at capturing, reviewing, editing, and analyzing gels or blots. |               |                      |                 |

## High-content analysis

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Length        | Location             | Reference       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----------------|
| <b>CX5 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>2 days</b> | <b>Customer site</b> | <b>TRN00315</b> |
| This course provides introductory operating knowledge, encompassing the entire platform workflow from sample loading to data interpretation. The goal of the course is to leave the user with a working knowledge of the instrument and one or two functioning assays. Pre-course contact from the trainer will aim to determine the appropriate bio applications. At the end of the course trainees can load plates, configure acquisition parameters, configure assays, run scans, and analyze data in a more efficient way. |               |                      |                 |
| <b>CX7 SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>2 days</b> | <b>Customer site</b> | <b>TRN00316</b> |
| This course provides introductory operating knowledge, encompassing the entire platform workflow from sample loading to data interpretation. The goal of the course is to leave the user with a working knowledge of the instrument and one or two functioning assays. Pre-course contact from the trainer will aim to determine the appropriate bio applications. At the end of the course trainees can load plates, configure acquisition parameters, configure assays, run scans, and analyze data in a more efficient way. |               |                      |                 |
| <b>HCA Advanced Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>1 day</b>  | <b>Customer site</b> | <b>TRN00317</b> |
| This training is offered for more advanced users of the CX5 or CX7 systems. This course will offer a fully customized training plan aimed at helping users start to develop or optimize a new assay.                                                                                                                                                                                                                                                                                                                           |               |                      |                 |

## Cell therapy

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Length        | Location             | Reference       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-----------------|
| <b>CTS Compleo SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>2 days</b> | <b>Customer site</b> | <b>TRN47609</b> |
| With SmartStart orientation, customers will get an in-depth understanding of their Gibco™ CTS™ Compleo™ System with this engaging and interactive two-day training led by an experienced field application scientist. This course provides a strong foundation in operating and maintaining the system. Participants will also receive practical training on the Gibco™ CTS™ Compleo™ Protocol Builder Application, enabling them to create, modify, and save protocols for easy use on the instrument.                                                                                                                                                                                                                                            |               |                      |                 |
| <b>Rotea SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>2 days</b> | <b>Customer site</b> | <b>TRN47608</b> |
| This two-day training is designed for new users and for individuals seeking a refresher on instrument operations. Participants will learn the foundational principles of instrument operation, workflow procedures, protocol creation, editing, and essential maintenance. The course also includes best-practice guidance, optimization strategies, and practical tips to support successful runs. A field application scientist will oversee a hands-on run for one application and provide tailored guidance using customer-provided input material (e.g., cells or leukopak). Additional applications can be included by purchasing extra training days.                                                                                       |               |                      |                 |
| <b>Rotea Instrument Training / Protocol Optimization</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>1 day</b>  | <b>Customer site</b> | <b>TRN47607</b> |
| This one-day hands-on training equips users with essential instrument operation skills, maintenance best practices, and foundational protocol optimization knowledge. A field application scientist will discuss key optimization considerations and review recommendations to help improve viability or recovery outcomes for automated cell processing.                                                                                                                                                                                                                                                                                                                                                                                          |               |                      |                 |
| <b>Xenon SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>1 day</b>  | <b>Customer site</b> | <b>A53339</b>   |
| This one-day training is designed for new users and for individuals seeking a refresher on instrument operation and maintenance procedures. Participants will also review key considerations for electroporation optimization to support successful and consistent results.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |                      |                 |
| <b>DynaCollect SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>2 days</b> | <b>Customer site</b> | <b>TRN00550</b> |
| This two-day training is designed for new users and for individuals seeking a refresher on instrument operations. Participants will learn the foundational principles of instrument operation, workflow procedures, protocol creation, editing, and essential maintenance. The course also includes best-practice guidance and practical tips to support successful runs. A field application scientist will oversee a hands-on run for one application and provide tailored guidance using customer-provided input material (e.g., cells or leukopak). Additional applications can be included by purchasing extra training days.                                                                                                                 |               |                      |                 |
| <b>Cell &amp; Gene Therapy Workflow Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>1 day</b>  | <b>Customer site</b> | <b>TRN00517</b> |
| This one-day on-site training provides laboratory personnel with instruction on Gibco™ Cell Therapy System™ (CTS™) operation within their own working environment, including the Gibco™ CTS™ Compleo™, CTS™ Rotea™, CTS™ Xenon™, and CTS™ DynaCollect™ systems. Participants will work with a field application scientist to review system concepts, workflow fundamentals, and key operational considerations through lecture and discussion sessions. Multiple training days may be combined to support broader learning needs. Depending on the training scope, hands-on runs using customer-provided samples (e.g., cells or leukopak) may be performed, along with discussion of optimization considerations for customer-specific protocols. |               |                      |                 |

## Sample preparation

| Course title                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Length       | Location             | Reference       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|-----------------|
| <b>KingFisher Flex &amp; DuoPrime SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>1 day</b> | <b>Customer site</b> | <b>TRN00340</b> |
| This course is designed for any individual who is responsible for the operation of the Thermo Scientific™ KingFisher™ Flex or DuoPrime instrument and wishes to familiarize themselves with the instrument and the basis of the Thermo Scientific™ Binlx software, learning how to import and create new protocols. The trained user will then be able to obtain the most from their instrument and the best quality from their extraction protocol using the Thermo Fisher kits. |              |                      |                 |
| <b>KingFisher Apex SmartStart Orientation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>1 day</b> | <b>Customer site</b> | <b>TRN46245</b> |
| This course is designed for any individual who is responsible for the operation of the Thermo Scientific™ KingFisher™ Apex instrument and wishes to familiarize themselves with the instrument and the basis of the Binlx Software, learning how to import and create new protocols. The trained user will then be able to obtain the most from their instrument and the best quality from their extraction protocol using the Thermo Fisher kits.                                |              |                      |                 |

## Bioinformatics & next-generation sequencing

| Course title                        | Length        | Location                             | Reference      |
|-------------------------------------|---------------|--------------------------------------|----------------|
| <b>Ion Data Analysis Essentials</b> | <b>2 days</b> | <b>Thermo Fisher Training Center</b> | <b>4481815</b> |

Jump-start your Ion Torrent™ data analysis skills. Taking this course will provide an introduction to the Torrent Suite™ Software family, including Variant Calling, Ion AmpliSeq™ Designer, and Ion Reporter™ Software.

|                                       |                 |                      |                     |
|---------------------------------------|-----------------|----------------------|---------------------|
| <b>Bioinformatics Consulting Plan</b> | <b>10 hours</b> | <b>Customer site</b> | <b>ZGPCSCBFX10</b>  |
|                                       | <b>20 hours</b> | <b>Customer site</b> | <b>ZGPCSCIONBFX</b> |

Whether you need assistance with project planning and design, workflow optimization, and data analysis, or want to review your data with one of our bioinformatics scientists, we provide tailored solutions to best suit your needs through 10- or 20-hour support packages. These hours can be used remotely or in your lab. Examples of services include plug-in development for sequence analysis, data management consulting, as well as web-based software training for Torrent Suite Software and Ion Reporter software.

|                                            |               |                                      |               |
|--------------------------------------------|---------------|--------------------------------------|---------------|
| <b>Hands-On Ion Torrent Variant Caller</b> | <b>2 days</b> | <b>Thermo Fisher Training Center</b> | <b>A32645</b> |
|--------------------------------------------|---------------|--------------------------------------|---------------|

This is a 2-day, advanced course that covers Ion Torrent™ Variant Caller (TVC) in depth. You will learn how to work with the TVC, how to interpret the output of the algorithm, configure parameters and troubleshoot difficult cases. The course is heavily hands-on with more than 30 exercises. We will spend most of the time running the TVC on sample datasets, assessing the results, adjusting the parameters and discussing example cases of variant detection situations that may occur in analysis of real Ion Torrent™ data.

|                              |               |                                      |               |
|------------------------------|---------------|--------------------------------------|---------------|
| <b>Hands-On Ion Reporter</b> | <b>2 days</b> | <b>Thermo Fisher Training Center</b> | <b>A32645</b> |
|------------------------------|---------------|--------------------------------------|---------------|

This is a 2-day, introductory course that covers Ion Reporter Software in depth. You will learn how to use and administrate the software in the first part, including creating or modifying analysis workflows, adding custom annotations or changing parameters. In the second part, you will learn how to use Ion Reporter software to help you analyze and understand your data. The course is heavily hands-on with more than 30 exercises.

|                                                     |              |                                      |               |
|-----------------------------------------------------|--------------|--------------------------------------|---------------|
| <b>Ion Torrent Suite API and Plugin Development</b> | <b>1 day</b> | <b>Thermo Fisher Training Center</b> | <b>A32915</b> |
|-----------------------------------------------------|--------------|--------------------------------------|---------------|

In this course, you will learn how to interact with Torrent Suite Software, and how to create plugins to extend the functionality of the software. Hands-on exercises will follow every topic discussed during the training. Firstly, you will learn how to use the Torrent Suite™ API. We will write code snippets to retrieve or modify data or start actions on Torrent Suite software. Secondly, you will learn how to create plugins that you will install and test on a Torrent Suite instance.

|                                                        |               |                                      |               |
|--------------------------------------------------------|---------------|--------------------------------------|---------------|
| <b>Ion Torrent Suite Plugin Development by Example</b> | <b>2 days</b> | <b>Thermo Fisher Training Center</b> | <b>A32645</b> |
|--------------------------------------------------------|---------------|--------------------------------------|---------------|

In this course, you will learn how to create plugins. Hands-on exercises will guide you through the development of an Ion Torrent Suite™ plugin that will realign reads to a reference sequence with custom parameters. The plugin will be fully integrated into Torrent Suite Software with .html forms, reporting pages, and tables and will also report alignment statistics.

## Bioinformatics & microarrays

| Course title                                         | Length         | Location      | Reference     |
|------------------------------------------------------|----------------|---------------|---------------|
| <b>Axiom Analysis Suite: Best Practices Workflow</b> | <b>2 hours</b> | <b>Online</b> | <b>A38000</b> |

The Applied Biosystems™ Axiom™ Genotyping Solution is the platform of choice for large-scale genotyping studies, including SNPs, InDels, and CNVs. This two-hour training will familiarize you with the software interface and enable you to apply our recommended Best Practice Workflow (BPW) to your Axiom data.

|                                                               |               |               |               |
|---------------------------------------------------------------|---------------|---------------|---------------|
| <b>Axiom Analysis Suite: Copy Number Recommended Workflow</b> | <b>1 hour</b> | <b>Online</b> | <b>A38000</b> |
|---------------------------------------------------------------|---------------|---------------|---------------|

The Axiom Genotyping Solution is the platform of choice for large-scale genotyping studies, including SNPs, InDels, and CNVs. This one-hour training will familiarize you with the software interface and enable you to detect new copy number variations and calculate copy number states for fixed regions in all samples of a batch.

## Bioinformatics – general courses

| Course title                                   | Length        | Location                             | Reference     |
|------------------------------------------------|---------------|--------------------------------------|---------------|
| <b>Bioinformatics for Molecular Biologists</b> | <b>4 days</b> | <b>Thermo Fisher Training Center</b> | <b>A30833</b> |

This course has been designed to help researchers take their first steps in bioinformatics, giving individuals the experience of working on the command line and manipulating large datasets. It will give you more powerful options for data analysis and will increase your productivity. This interactive and hands-on course will introduce you to the Linux™ operating system, databases, and Python™ or Perl™ programming using data sets from the Ion system.

|                                           |               |                                      |               |
|-------------------------------------------|---------------|--------------------------------------|---------------|
| <b>Bioinformatics for Data Scientists</b> | <b>4 days</b> | <b>Thermo Fisher Training Center</b> | <b>A38000</b> |
|-------------------------------------------|---------------|--------------------------------------|---------------|

This course assumes that you want to dive deeper into the knowledge of the tools used to harness big data (beyond spreadsheets). A course designed to allow you to develop robust practices when working with large datasets. It will offer you powerful options for data analysis and is designed to help increase your productivity. This interactive and hands-on course will introduce you to R and advanced scripting to manage data with the Linux™ operating system.

|                         |                 |                                      |               |
|-------------------------|-----------------|--------------------------------------|---------------|
| <b>R for Scientists</b> | <b>2.5 days</b> | <b>Thermo Fisher Training Center</b> | <b>A38001</b> |
|-------------------------|-----------------|--------------------------------------|---------------|

Over the years R has established itself as the go to data analysis language for academics across many scientific disciplines. Combined with access to cutting edge analysis tools, R boasts best in class graphics capabilities for generating professional plots and images. Technical benefits aside, R comes with a steep learning curve that quickly plateaus once you have a command of the basics. This course aims to march you through the first steps and place you firmly on that plateau in a position to confidently move forward with your own data and continue learning independently.

|                                                                |               |                                      |               |
|----------------------------------------------------------------|---------------|--------------------------------------|---------------|
| <b>Genome-Wide Association Studies (GWAS) Analysis Using R</b> | <b>2 days</b> | <b>Thermo Fisher Training Center</b> | <b>A32645</b> |
|----------------------------------------------------------------|---------------|--------------------------------------|---------------|

This course assumes that you want to dive deeper into the knowledge of the tools used to harness big data (beyond spreadsheets). A course designed to allow you to develop robust practices when working with large datasets. It will offer you powerful options for data analysis and is designed to help increase your productivity. This interactive and hands-on course will introduce you to R and advanced scripting to manage data with the Linux™ operating system.

 Find out more at [learn.thermofisher.com/europe](https://learn.thermofisher.com/europe)

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