ArrayExpress: Quick tour

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- Gene Expression
- Beginner
- 0.5 hour

This quick tour provides an overview of EMBL-EBI's functional genomics database ArrayExpress.

This course was updated in December 2015.

An undergraduate-level understanding of biology is an advantage. You may wish to have a look at our Functional genomics: An introduction to EMBL-EBI resources [2] before taking this course.

Want to know more about ArrayExpress? After finishing the Quick Tour you can move onto our more comprehensive ArrayExpress course ArrayExpress: Discover functional genomics data quickly and easily [3]

Learning objectives:

- Basic understanding of ArrayExpress and what it can do
- Know where to find out more about ArrayExpress

Overview

During this course, we will briefly cover the following (Figure 1).
What is ArrayExpress?

ArrayExpress [4] is a database of functional genomics [5] experiments. The data and information about the experiments are stored according to the MIAME [6] and MINSEQE [7] guidelines for microarray [8] and sequencing experiments (Figure 2).

**Figure 1** Overview of the ArrayExpress quick tour.

**Figure 2** The experiments in ArrayExpress are submitted by researchers or are imported from other functional genomics databases e.g. NCBI GEO [9].
Why do we need ArrayExpress?

ArrayExpress was established to make data from high-throughput technologies available to the scientific community. It provides easy access to well-annotated functional genomics data in a structured and standardised format, and facilitates sharing.

What can I do with ArrayExpress?

ArrayExpress can be used to:

- find functional genomics experiments;
- download functional genomics data;
- store your functional genomics data.

Searching ArrayExpress

Figure 3 below shows you the main ways to search from the ArrayExpress homepage.

Figure 3 Searching ArrayExpress.

Find out more about how to search for public experiments [10] on ArrayExpress.
Viewing search results in ArrayExpress

Once you have carried out a search, the results will be presented as shown in Figure 4.

![Figure 4](image)

**Figure 4** Viewing search results in ArrayExpress.

Viewing experiments in ArrayExpress

Clicking on an accession number from the search results page provides you with more information about that experiment (Figure 5).
Figure 5 Viewing experiments in ArrayExpress.

Viewing samples in Array Express

You can view information on samples and protocols in ArrayExpress by clicking on the 'Samples' link (Figure 6).
Figure 6 Viewing samples in ArrayExpress.

Submitting data to ArrayExpress

- Data can be submitted to ArrayExpress using the [Annotare web tool](https://www.ebi.ac.uk/training/online) [12].
- Annotare was built to help biologists fulfill data standard requirements.
- Data remains private until it is published or released by the submitter.
- If your data is stored in a local database please contact arrayexpress [at] ebi.ac.uk and we can discuss the best way to submit your data to ArrayExpress.

An example submission form is shown below in Figure 7.
Figure 7 Submitting data to ArrayExpress.

See the Annotare help page [13] or our webinar [14] for more information on how to submit data to ArrayExpress.

**Your feedback**

Please tell us what you thought about this course. Your feedback is invaluable and helps us to improve our courses and thus enhance your learning experience.

**Get help and support on ArrayExpress**

You will find a link to our help pages and feedback form in the navigation bar on every page in ArrayExpress and in Annotare (Figure 8).
Figure 8 Getting help on ArrayExpress (A) and submitting to ArrayExpress using Annotare (B).

General help on ArrayExpress

- [Help page](#) [15]
- arrayexpress [at] ebi.ac.uk (Email us)

Help with submissions to ArrayExpress

- [Help page](#) [13]
- annotare [at] ebi.ac.uk (Email us)

Related courses on Train online

- [ArrayExpress: Discover functional genomics data quickly and easily](#) [3]
- [ArrayExpress: why and how to submit your data](#) [14]
- [Expression Atlas: Quick tour](#) [16]
Contributors

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EMBL-EBI
Scientific Training Officer (e-learning): Training Team

Melissa is the Scientific Training Officer (e-learning) for the Training Team at the EMBL-EBI. She joined the Training Team in July 2016 after having worked as a Scientific Curator for ArrayExpress/Expression Atlas at the EMBL-EBI. She has a PhD in Molecular Parasitology and has worked internationally as a postdoctoral researcher specialising in the functional genomics of infectious diseases.

Functional Genomics and Gene Expression Groups

The EBI’s Functional Genomics [17] and Gene Expression [18] groups develop and maintain the EBI’s functional genomic resources, including ArrayExpress and Expression Atlas.

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Source URL: https://www.ebi.ac.uk/training/online/course/arrayexpress-quick-tour-1

Links
[1] https://www.ebi.ac.uk/training/online/trainers/mburke
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