BioNumerics Tutorial:
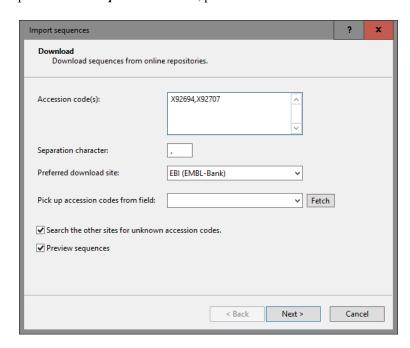
Importing sequences from online repositories

1   Aim

With the BioNumerics download routine, sequences can be downloaded from EBI, NCBI, and NIG and imported into BioNumerics. In this tutorial you will learn how to download some sequences from an online repository and import into BioNumerics.

2   The Import wizard

1. Create a new database (see tutorial "Creating a new database") or open an existing database.

2. In the *Main* window, select *File > Import...* (, **Ctrl+I**) to open the *Import* dialog box.

3. Choose the option *Download sequences from internet* under the *Sequence type data* item in the tree and click *<Import>*.

4. Enter the accession codes **X92694** and **X92707** in the *Accession codes* input field, separated by the separation character ",".

5. Specify "," as the *Separation character* and choose one of the available download sites from the list, e.g. *EBI*.

6. With the option *Preview sequences* checked, press *<Next>*.

Figure 1: Download sequences from an online repository.

The import routine fetches the sequences from the selected database and shows detailed information in the next step (see Figure 2).
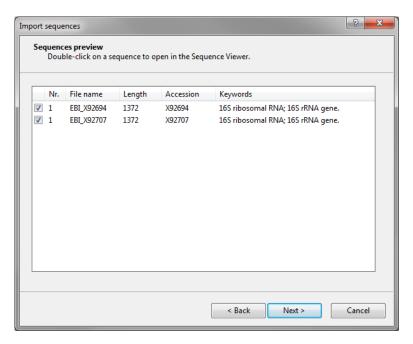
Figure 2: Fetched information.

7. Press <***Next***>.

The next step of the import wizard lists the templates that are present to import sequence information in the database. As this is the first time we import sequences from an online repository, we need to create a new import template by specifying ***Import rules***.

8. Click <***Create new***> to create a new import template.

Each header tag (e.g. ID, AC, . . .) corresponds to a row in the grid panel.

9. Select "AC - ACCESSION" in the list and click <***Edit destination***> or double-click on "AC - ACCES-SION". Select ***Key***, and press <***OK***>.

The grid is updated (see Figure 3).

10. Click <***Next***> and press <***Finish***>.

11. Specify a template name (e.g. "EBI") and optionally enter a description. Press <***OK***>.

12. Highlight the newly created template and select "Create new" as ***Experiment type*** (see Figure 4).

13. Press <***Next***>.

14. Specify a sequence type name (e.g. "16S") and press <***OK***> and confirm the action (see Figure 5).

The *Database links* wizard page will indicate that 2 new entries will be created during import (see Figure 6).

15. Press <***Finish***>.

The two sequences are imported in the database and are automatically selected (see Figure 7).

16. Click on a green colored dot in the *Experiment presence* panel to open the *Sequence editor* window.

The sequence is displayed in the upper panel and a graphical representation of the sequence is displayed in the panel below. The *Annotation* panel holds the EMBL features, and the header information is stored in the *Header* panel (see Figure 8).
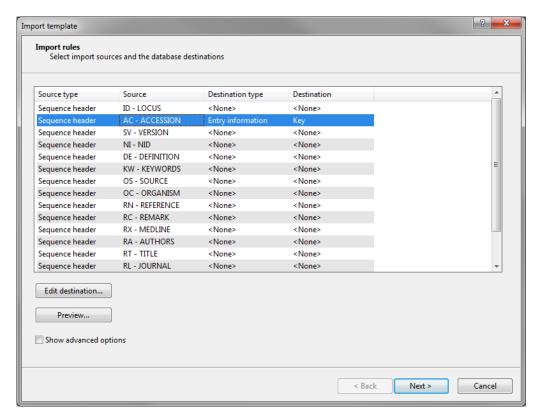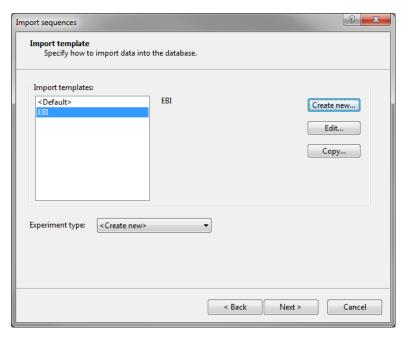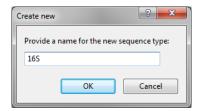
Figure 3: Create a new import template.

Figure 4: Select import template.

3 Conclusion

In this tutorial you have seen how easy it is to download sequences from online repositories and import them in BioNumerics. The sequences can now be analyzed in BioNumerics. More information can found in the analysis tutorials on our website.

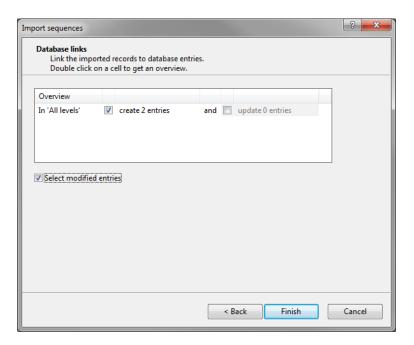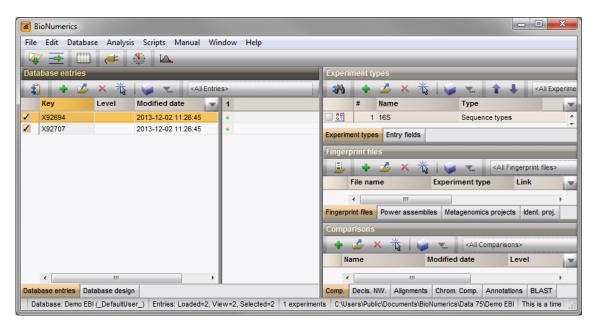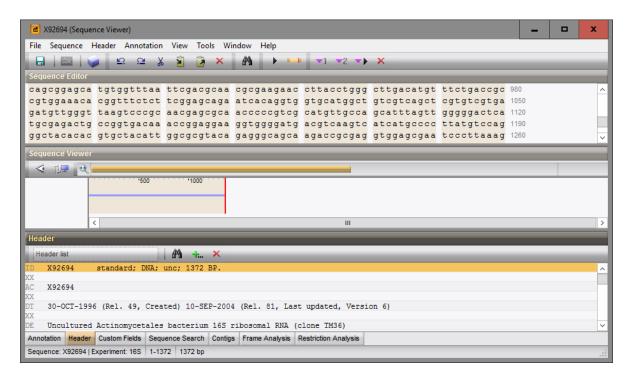**Figure 5:** Create a new sequence type.

Figure 6: The *Database links* wizard page.

Figure 7: The *Main* window.

Figure 8: The *Sequence editor* window.