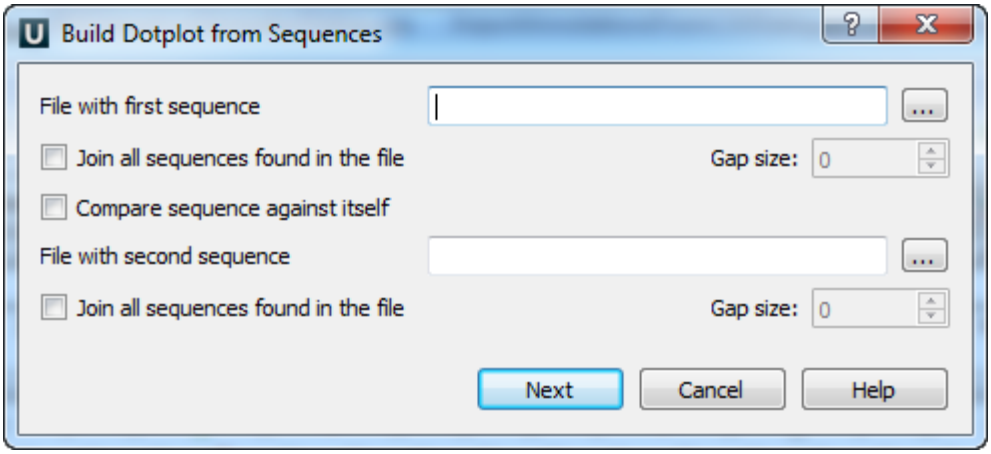
Creating Dotplot

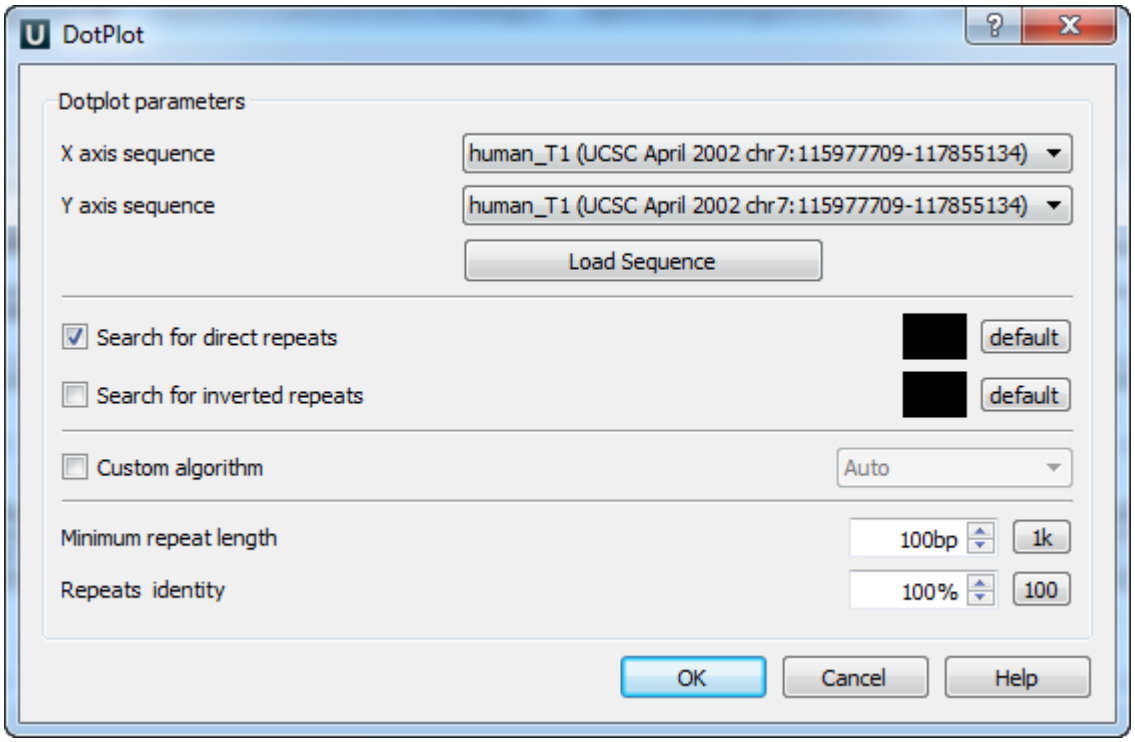
To create a dotplot select the *Tools Build dotplot* main menu item. The *Build dotplot from sequences* dialog will appear:



Here you should specify the *File with first sequence*. Also you should either check the *Compare sequence against itself* option or select the *File with second sequence*.

Optionally you can select to *Join all sequences found in the file* (for the first and/or for the second file). If you select to join the sequences you can also select the *Gap size*. The gap of the specified size will be inserted between the joined sequences.

After you press the *Next* button, the dialog to configure the dotplot parameters will appear:



The following parameters are available:

X axis sequence — the sequence for the X dotplot axis.

Y axis sequence — the sequence for the Y dotplot axis.

If there are several sequences in the specified (the first or the second) file and you haven't selected to join the sequences in the previous dialog, then you can select a sequence in these fields.

If you have selected to *Join all sequences found in the file*, then you can't select a separate sequence from the file, the joined *Sequence* can be selected instead.

Search direct repeats — check this option to search for direct repeats in the specified sequences. You can also select the color with which the repeats will be displayed in the picture. The *default* button sets the default color.

Search inverted repeats — check this option to search for inverted repeats in the specified sequences. You can also select the color with which the repeats will be displayed in the picture. The *default* button sets the default color.

Custom algorithm — optionally you can select an algorithm to calculate the repeats:

- Auto
- Suffix index
- Diagonals

The specified algorithm is provided to the *Repeat Finder* plugin as an input parameter. In most cases the *Auto* value is appropriate.

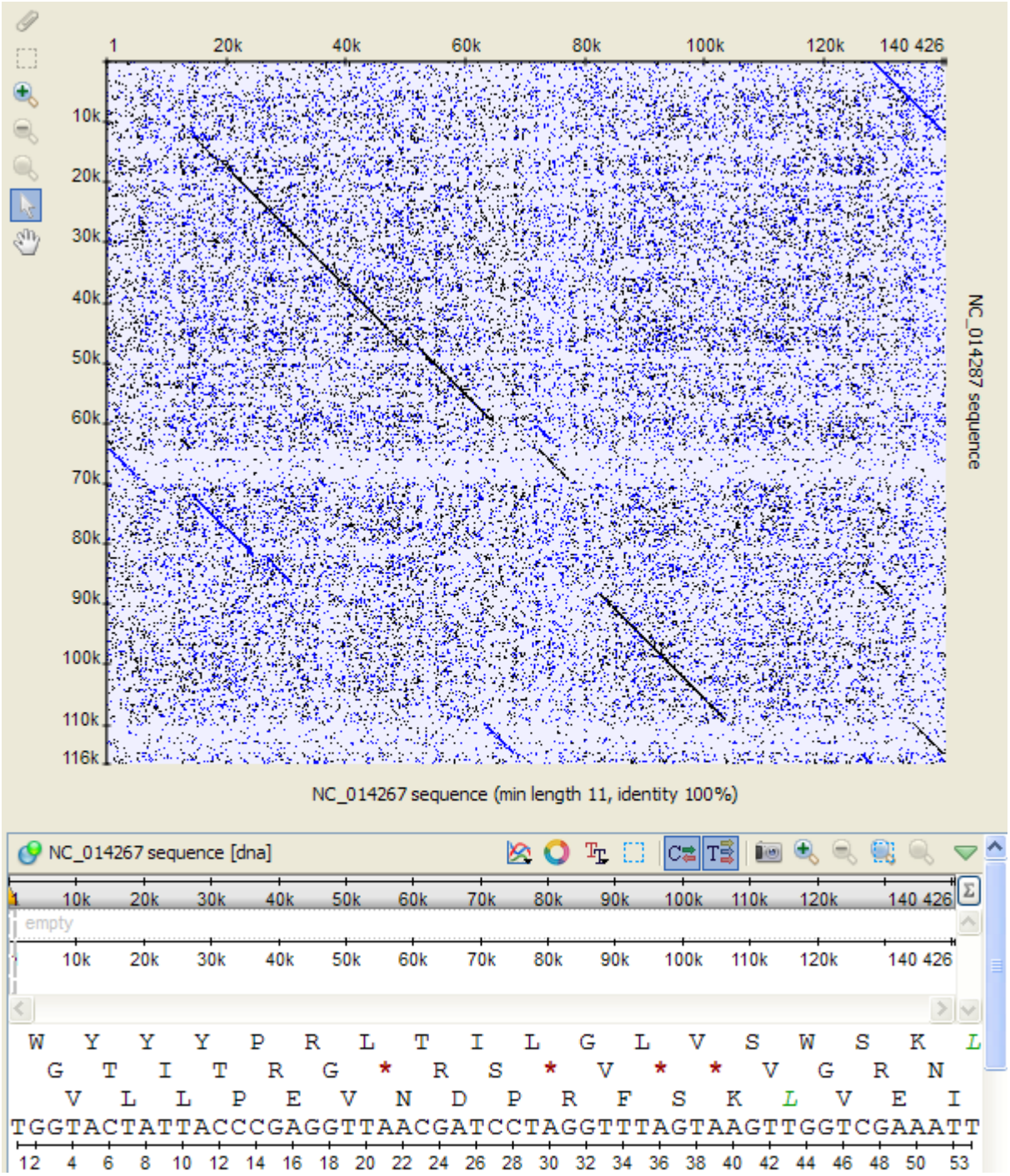
Minimum repeat length — allows to draw only such matches between the sequences that are continuous and long enough. For example if it equals to *3bp*, then only repeats will be found that contain 3 and more base symbols.

Press the *1k* button to automatically adjust the *Minimum repeat length* value. Such value will be set, that there will be about 1000 repeats found.

Repeats identity — specifies the percents of the repeats identity.

Press the *100* button to set the *100%* identity.

After the parameters are set, press the *OK* button. The dotplot will appear in the *Sequence View*:



It is a two-dimentional plot consisted of dots.

Each dot on the plot corresponds to a matched base symbol at the “x” position of the horizontal sequence and the “y” position of the vertical sequence.

Visible diagonal lines indicate matches between sequences in the given particular region.

See also:

- *Interpreting Dotplot: Identifying Matches, Mutations, Invertions, etc.*
- *Building Dotplot for Currently Opened Sequence*