# Interpreting Dotplot - Identifying Matches, Mutations, Invertions, etc

Using a dotplot graphic, you can identify such the following differences between the sequences:

**1. Matches**

A *match* between sequences looks like a diagonal line on the dotplot graphic, representing the continuous match (or repeat).

**2. Frame shifts**

**a. Mutations**

*Mutations* are distinctions between sequences. On the graphic they are represented by gaps in diagonal lines. They interrupt matches.

**b. Insertions**

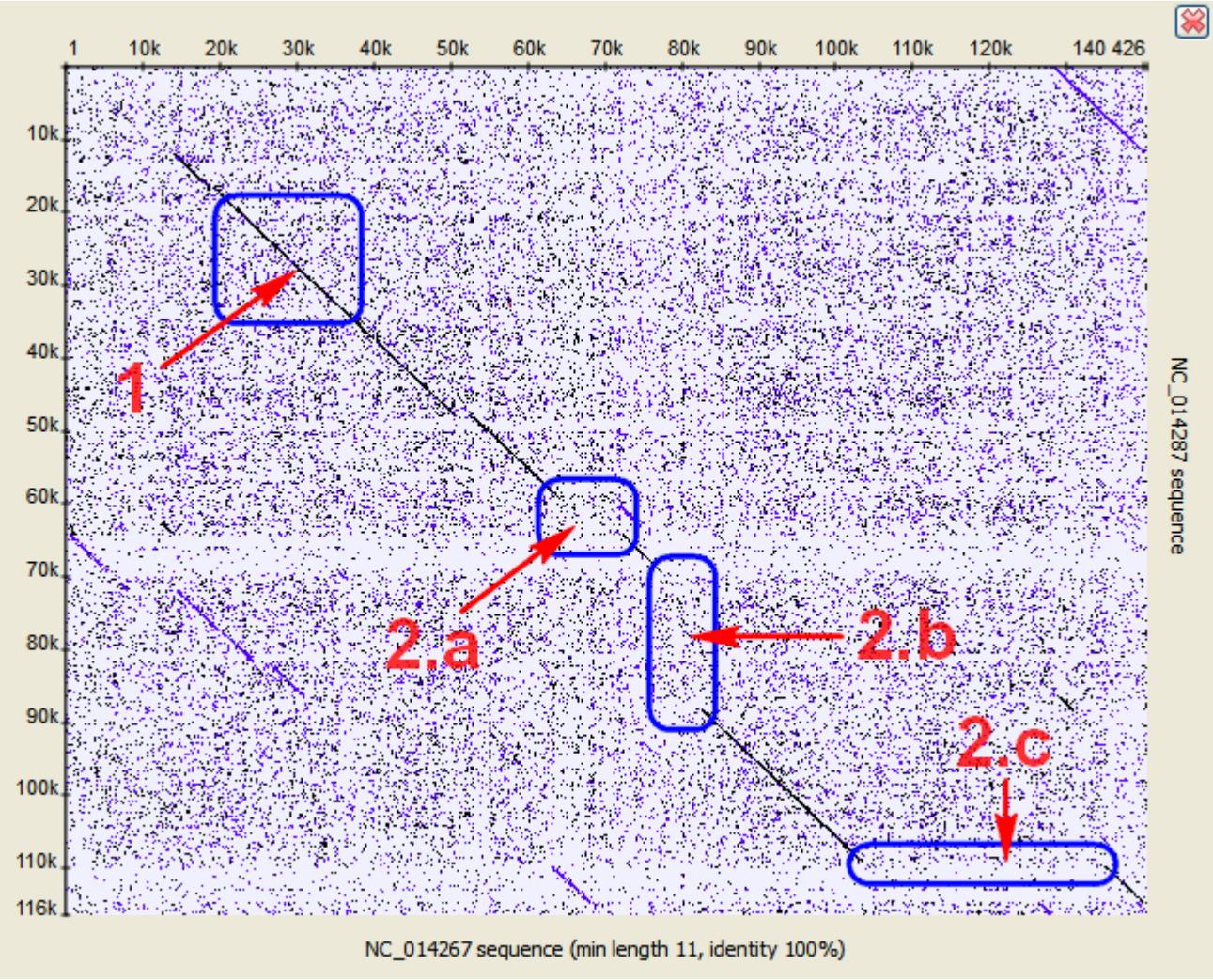
*Insertions* are parts of one sequence that are missed in the another, while the surrounding parts match. In other words, an insertion is a subsequence that was inserted into a sequence.

Graphically, insertions are represented by gaps which lie only on one axis. A little shift towards the other axis indicates a mutation involved.

**c. Deletions**

A deletion is a subsequence that was deleted from a sequence.

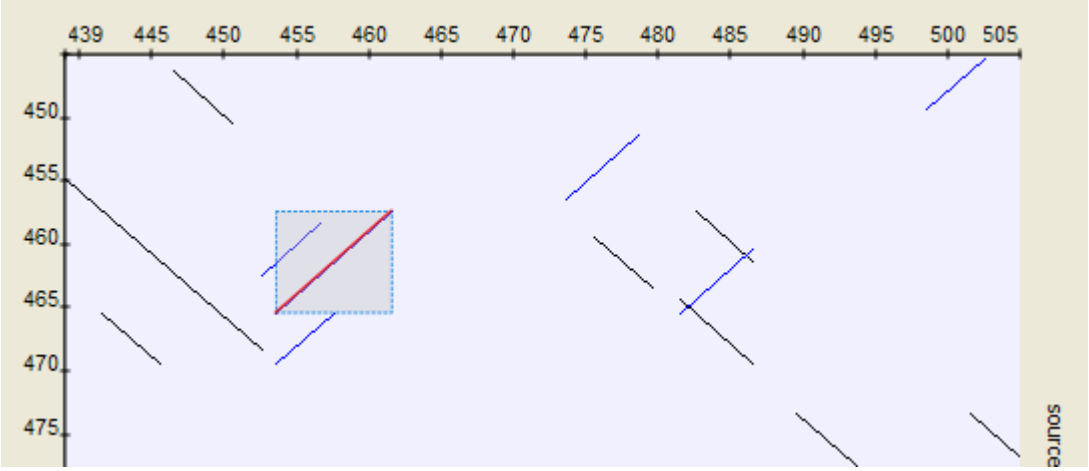
A deletion from sequence A found in sequence B can be considered as an insertion into sequence B and contained in sequence A.




**3. Inverted repeats**

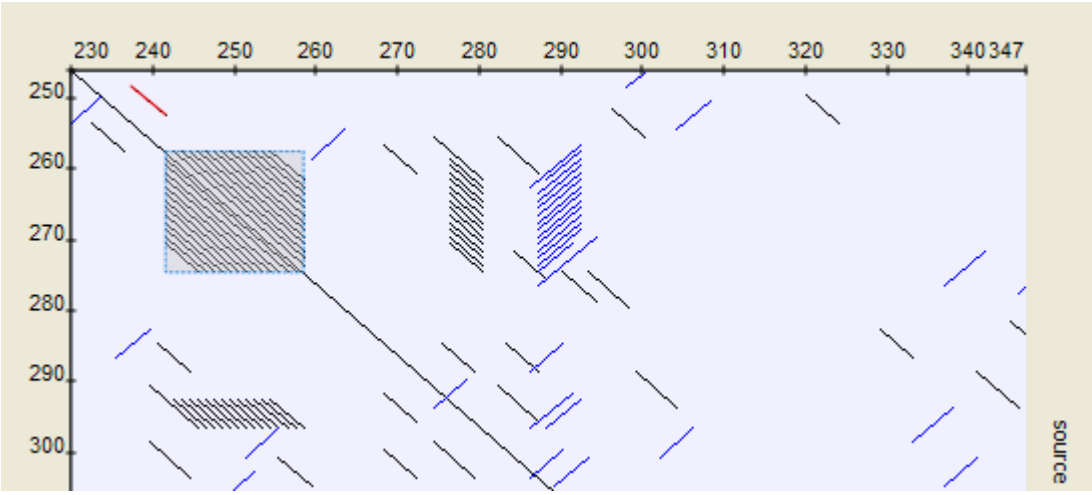
The *Dotplot* plugin allows to search for inverted repeats as well. Inverted repeats are shown contrary to the direct repeats.

Use the *Search direct repeats* and *Search inverted repeats* options of the *Dotplot* parameters dialog to select which repeats to draw (the dialog is described *here*).




**4. Low-complexity regions**

A low-complexity region is a region produced by redundancy in a particular part of the sequence. It is represented on a plot as a rectangular area filled with the matches.




**Hint**

Compare sequence with itself to easily find low-complexity regions in it.