

# Local BLAST Search Element

Finds annotations for DNA sequence in a local BLAST database.

**Element type:** blast-plus



BLAST+ is used as an external tool from UGENE and it must be installed on your system. To learn more about the external tools, please, read main [UGENE User Manual](#).

## Parameters

| Parameter                  | Description                                                                                                | Default value   | Parameter in Workflow File | Type                                                                                                                                                                      |
|----------------------------|------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Search type</b>         | Selects the type of the BLAST searches.                                                                    | blastn          | <b>blast-type</b>          | <i>string</i><br><br>Available values are: <ul style="list-style-type: none"><li>• blastn</li><li>• blastp</li><li>• blastx</li><li>• tblastn</li><li>• tblastx</li></ul> |
| <b>Database path</b>       | Path to the database files.                                                                                |                 | <b>db-path</b>             | <i>string</i>                                                                                                                                                             |
| <b>Database name</b>       | Base name for BLAST DB files.                                                                              |                 | <b>db-name</b>             | <i>string</i>                                                                                                                                                             |
| <b>Tool path</b>           | Path to the BLAST executable.                                                                              | default         | <b>tool-path</b>           | <i>string</i>                                                                                                                                                             |
| <b>Temporary directory</b> | Directory for temporary files.                                                                             | default         | <b>temp-dir</b>            | <i>string</i>                                                                                                                                                             |
| <b>Expected value</b>      | Expectation threshold value.                                                                               | 10              | <b>e-val</b>               | <i>numeric</i>                                                                                                                                                            |
| <b>Culling limit</b>       | If the query range of a hit is enveloped by that of at least this many higher-scoring hits, delete the hit | 0               | <b>max-hits</b>            | <i>numeric</i>                                                                                                                                                            |
| <b>Annotate as</b>         | Name of the result annotations.                                                                            | blast_result    | <b>result-name</b>         | <i>string</i>                                                                                                                                                             |
| <b>Gapped alignment</b>    | Perform gapped alignment.                                                                                  | use             | <b>gapped-aln</b>          | <i>boolean</i>                                                                                                                                                            |
| <b>Gap costs</b>           | Cost to create and extend a gap in an alignment.                                                           | 2 2             | <b>gap-costs</b>           | <i>string</i>                                                                                                                                                             |
| <b>Match scores</b>        | Reward and penalty for matching and mismatching bases.                                                     | 1 -3            | <b>match-scores</b>        | <i>string</i>                                                                                                                                                             |
| <b>BLAST output</b>        | Location of BLAST output file.                                                                             |                 | <b>blast-output</b>        | <i>string</i>                                                                                                                                                             |
| <b>BLAST output type</b>   | Type of BLAST output file.                                                                                 | XML (-outfmt 5) | <b>type-output</b>         | <i>string</i>                                                                                                                                                             |

## Input/Output Ports

The element has 1 *input port*:

**Name in GUI:** *Input sequence*

**Name in Workflow File:** in-sequence

**Slots:**

| Slot In GUI     | Slot in Workflow File | Type            |
|-----------------|-----------------------|-----------------|
| <b>Sequence</b> | <b>sequence</b>       | <i>sequence</i> |

And 1 *output port*:

**Name in GUI:** *Annotations*

**Name in Workflow File:** out-annotations

Slots:

| Slot In GUI        | Slot in Workflow File | Type                    |
|--------------------|-----------------------|-------------------------|
| Set of annotations | annotations           | <i>annotation-table</i> |