

# Local BLAST Search Element

Finds annotations for the supplied DNA sequence in local BLAST database.



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 in GUI

| Parameter           | Description                                                                                                        | Default value |
|---------------------|--------------------------------------------------------------------------------------------------------------------|---------------|
| Search type         | Selects the type of the BLAST searches.                                                                            | blastn        |
| Database path       | Path to the database files.                                                                                        |               |
| Database name       | Base name for BLAST DB files.                                                                                      |               |
| Tool path           | Path to the BLAST executable.                                                                                      | default       |
| Temporary directory | Directory for temporary files.                                                                                     | default       |
| Expected value      | Expectation threshold value.                                                                                       | 10            |
| Max hits            | Specifies the number of best hits from a region of the query to keep. 0 turns it off. If used, 100 is recommended. | 0             |
| Annotate as         | Name of the result annotations.                                                                                    | blast_result  |
| Gap costs           | Cost to create and extend a gap in an alignment.                                                                   | 2 2           |
| Match scores        | Reward and penalty for matching and mismatching bases.                                                             | 1 -3          |
| BLAST output        | Location of BLAST output file.                                                                                     |               |
| BLAST output type   | Type of BLAST output file.                                                                                         | XML (-m 7)    |

## Parameters in Workflow File

Type: blast

| Parameter   | Parameter in the GUI | Type                                                                                                                                                                      |
|-------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| blast-type  | Search type          | <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> |
| db-path     | Database path        | <i>string</i>                                                                                                                                                             |
| db-name     | Database name        | <i>string</i>                                                                                                                                                             |
| tool-path   | Tool path            | <i>string</i>                                                                                                                                                             |
| temp-dir    | Temporary directory  | <i>string</i>                                                                                                                                                             |
| e-val       | Expected value       | <i>numeric</i>                                                                                                                                                            |
| max-hits    | Max hits             | <i>numeric</i>                                                                                                                                                            |
| result-name | Annotate as          | <i>string</i>                                                                                                                                                             |
| gap-costs   | Gap costs            | <i>string</i>                                                                                                                                                             |

|                     |                          |               |
|---------------------|--------------------------|---------------|
| <b>match-scores</b> | <b>Match scores</b>      | <i>string</i> |
| <b>blast-output</b> | <b>BLAST output</b>      | <i>string</i> |
| <b>type-output</b>  | <b>BLAST output type</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                    |
|---------------------------|-----------------------|-------------------------|
| <b>Set of annotations</b> | <b>annotations</b>    | <i>annotation-table</i> |