

Generate DNA Element

Generates random DNA sequences with given nucleotide content that can be specified manually or evaluated from the reference file.

Element type: generate-dna

Parameters

Parameter	Description	Default value	Parameter in Workflow File	Type
Length	Length of the resulted sequence or sequences.	1000 bp	length	<i>numeric</i>
Count	Number of sequences to generate.	1	count	<i>numeric</i>
Seed	Value to initialize the random generator. By default (seed = -1) the generator is initialized with the system time.	-1	seed	<i>numeric</i>
Content	Specifies how the nucleotide content of the sequence(s) should be generated. It can be either taken from the reference file (see the <i>Reference</i> parameter), or input manually.	manual	content	<i>string</i>
Algorithm	Algorithm for generating random sequence(s). Two algorithms are available: GC Content and GC Skew. If you choose GC Content, then parameters <i>A</i> , <i>C</i> , <i>G</i> , <i>T</i> are used to generate the sequence. Otherwise, the <i>GC Skew</i> parameter is used to generate the sequence(s).	GC Content	algorithm	<i>string</i> Available values are: <ul style="list-style-type: none">gc - contentgc - skew
Window size	The DNA sequence generation is divided into windows of the specified size. In each window the bases ratio, defined by other parameters, is kept.	1000	window-size	<i>numeric</i>
Reference	Path to the reference file (could be a sequence or an alignment).		reference-url	<i>string</i> Available values are: <ul style="list-style-type: none">manualreference
A	Adenine content.	25%	percent-a	<i>numeric</i>
C	Cytosine content.	25%	percent-c	<i>numeric</i>
G	Guanine content.	25%	percent-g	<i>numeric</i>
T	Thymine content.	25%	percent-t	<i>numeric</i>
GC Skew	GC Skew is calculated as $(G - C) / (G + C)$, where G is the number of G's in the window, and C is the number of C's.	0.25	gc-skew	<i>numeric</i>

Input/Output Ports

The element has 1 *output port*:

Name in GUI: Sequences

Name in Workflow File: out-sequence

Slots:

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