Generate DNA Element

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

Parameters in GUI

Parameter	Description	Default value
Length	Length of the resulted sequence or sequences.	1000 bp
Count	Number of sequences to generate.	1
Seed	Value to initialize the random generator. By default (seed = -1) the generator is initialized with the system time.	-1
Content	Specifies how the nucleotide content of the sequence(s) should be generated. It can be either taken from the reference file (see the *Reference*parameter), or input manually.	manual
Algorithm	Algorithm for generating random sequence(s). Two algorithms are available: GC Content and GC Skew. If you choose GC Content, then parameters *A*,*C*, *G*, *T* are used to generate the sequence. Otherwise, the *GC Skew*parameter is used to generate the sequence(s).	GC Content
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
Reference	Path to the reference file (could be a sequence or an alignment).	
A	Adenine content.	25%
C	Cytosine content.	25%
G	Guanine content.	25%
T	Thymine content.	25%
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

Parameters in Workflow File

Type: generate-dna

Parameter	Parameter in the GUI	Type
length	**Lenght**	*numeric*
count	**Count**	*numeric*
seed	**Seed**	*numeric*
content	**Countent**	*string*
algorithm	**Algorithm**	*string* Available values are: • gc-content • gc-skew
window-size	**Window size**	*numeric*
reference-url	**Reference**	*string* Available values are: • manual • reference
percent-a	**A**	*numeric*
percent-c	**C**	*numeric*
percent-g	**G**	*numeric*
percent-t	**T**	*numeric*
gc-skew	**GC Skew**	*numeric*

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**	*sequence*