NAME

InfoNucleicAcids.pl - List properties of nucleic acids

SYNOPSIS

InfoNucleicAcids.pl NucleicAcidIDs...

InfoNucleicAcids.pl [-h, --help] [-m, --mode NucleicAcidID | NucleicAcidType] [--OutDelim comma | tab | semicolon] [--output STDOUT | File] [--OutputStyle NucleicAcidBlock | NucleicAcidRows] [-o, --overwrite] [--precision number] [--PropertiesMode Categories | Names | All] [-p, --properties CategoryName, [CategoryName,...] | PropertyName, [PropertyName,...]] [--PropertiesListing ByGroup | Alphabetical] [-q, --quote yes | no] [-r, --root rootname] [-w, --WorkingDir dirname] NucleicAcidIDs...

DESCRIPTION

List nucleic acid properties. Nucleic acids identification supports two types of IDs: code or name. Nucleic acid properties data, in addition to basic information about nucleic acids - code, name, type, chemical formula and molecular weight - include information about exact mass and elemental composition.

PARAMETERS

NucleicAcidIDs *Code [NucleicAcidName...]* | *NucleicAcidType [NucleicAcidType...]*

NucleicAcidIDs is a space delimited list of values to identify nucleic acids.

For *NucleicAcidID* mode, input value format is: *Code [NucleicAcidName...]*. Default: *A*. Examples:

```
A
dG AMP
Cytidine T UDP dpppA "5′-dATP"
```

For *NucleicAcidType* mode, input value format is: *NucleicAcidType [NucleicAcidType...]*. Default: *A*. Possible values are: *Nucleobase, Nucleoside, Deoxynucleoside, Nucleotide, Deoxynucleotide*. Default: *Nucleoside*. Examples:

```
Deoxynucleoside
Nucleobase Nucleotide
```

OPTIONS

-h, --help

Print this help message.

-m, --mode *NucleicAcidID* | *NucleicAcidType*

Specify nucleic acids for listing properties using one of these methods: nucleic acid code and/or names or nucleic acid type.

Possible values: *NucleicAcidID or NucleicAcidType*. Default: *NucleicAcidID*

For *NucleicAcidType*, command line parameters support these type: *Nucleobase, Nucleoside, Deoxynucleoside, Nucleotide, Deoxynucleotide*.

--OutDelim *comma* | *tab* | *semicolon*

Output text file delimiter. Possible values: *comma, tab, or semicolon* Default value: *comma*.

--output *STDOUT* | *File*

List information at STDOUT or write it to a file. Possible values: *STDOUT or File*. Default: *STDOUT*. -r, --root option is used to generate output file name.

--OutputStyle *NucleicAcidBlock* | *NucleicAcidRows*

Specify how to list nucleic acid information: add a new line for each property and present it as a block for each nucleic acid; or include all properties in one line and show it as a single line.

Possible values: *NucleicAcidBlock* | *NucleicAcidRows*. Default: *NucleicAcidBlock*

An example for *NucleicAcidBlock* output style:

```
Code: Ado
OtherCodes: A
Name: Adenosine
Type: Nucleoside
```

```
MolecularFormula: C10H13O4N5
MolecularWeight: 267.2413
... ...
```

An example for *NucleicAcidRows* output style:

```
Code,OtherCodes,Name,Type,MolecularFormula,MolecularWeight
```

-o, --overwrite

Overwrite existing files.

--precision *number*

Precision for listing numerical values. Default: up to *4* decimal places. Valid values: positive integers.

--PropertiesMode *Categories* | *Names* | *All*

Specify how property names are specified: use category names; explicit list of property names; or use all available properties. Possible values: *Categories, Names, or All*. Default: *Categories*.

This option is used in conjunction with -p, --properties option to specify properties of interest.

-p, --properties *CategoryName,[CategoryName,...]* | *PropertyName,[PropertyName,...]*

This option is --propertiesmode specific. In general, it's a list of comma separated category or property names.

Specify which nucleic acid properties information to list for the nucleic acid IDs specified using command line parameters: list basic information; list all available information; or specify a comma separated list of nucleic acid property names.

Possible values: *Basic* | *BasicPlus* | *PropertyName,[PropertyName,...]*. Default: *Basic*.

Basic includes: *Code, OtherCodes, Name, Type, MolecularFormula, MolecularWeight*

BasicPlus includes: *Code, OtherCodes, Name, Type, MolecularFormula, MolecularWeight, ExactMass, ElementalComposition*

Here is a complete list of available properties: *Code, OtherCodes, BasePair, Name, Type, MolecularFormula, MolecularFormulaAtpH7.5, MolecularWeight, ExactMass, ElementalComposition*.

--PropertiesListing *ByGroup* | *Alphabetical*

Specify how to list properties for nucleic acids: group by category or an alphabetical by property names. Possible values: *ByGroup or Alphabetical*. Default: *ByGroup*

-q, --quote *yes* | *no*

Put quotes around column values in output text file. Possible values: *yes or no*. Default value: *yes*.

-r, --root *rootname*

New text file name is generated using the root: <Root>.<Ext>. File name is only used during *File* value of -o, --output option.

Default file name: NucleicAcidInfo<mode>.<Ext>. The csv, and tsv <Ext> values are used for comma/semicolon, and tab delimited text files respectively.

-w, --WorkingDir *dirname*

Location of working directory. Default: current directory.

EXAMPLES

To list basic properties information for nucleoside A, type:

```
% InfoNucleicAcids.pl
```

To list all available properties information for nucleoside A, type:

```
% InfoNucleicAcids.pl --propertiesmode all A
```

To list all available information for all available nucleic acids, type:

```
% InfoNucleicAcids.pl --propertiesmode All All
```

To list basic properties information for all nucleobases, type:

```
% InfoNucleicAcids.pl -m NucleicAcidType Nucleoside
```

To list basic properties information for all nucleotides and deoxynulceotides, type:

```
% InfoNucleicAcids.pl -m NucleicAcidType Nucleotide Deoxynucleotide
```

To list basic properties information for variety of nucleic acids, type:

```
% InfoNucleicAcids.pl A dG AMP Cytidine T UDP "5′-dATP"
```

To list code and molecular weights for nucleosides A, G, C and T, type:

```
% InfoNucleicAcids.pl --PropertiesMode  Names --properties
  Code,MolecularWeight A G C T
```

To alphabetically list all the available properties for nucleotides dAMP, dGMP, dCMP, and dTMP in rows instead of nucleic acid blocks with quotes around the values, type:

```
% InfoNucleicAcids.pl --PropertiesMode All --PropertiesListing
  Alphabetical --OutputStyle NucleicAcidRows -q yes dAMP dGMP
  dCMP dTMP
```

To alphabetically list all the available properties for all available nucleic acids to a file names NucleicAcidsProperties.csv with quotes around the values, type

```
% InfoNucleicAcids.pl --PropertiesMode All --PropertiesListing
  Alphabetical --output File --OutputStyle NucleicAcidRows -r
  NucleicAcidsProperties -o -q Yes All
```

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SEE ALSO

InfoAminoAcids.pl, InfoPeriodicTableElements.pl

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