NAME

AminoAcids

SYNOPSIS

use AminoAcids;

use AminoAcids qw(:all);

DESCRIPTION

AminoAcids module provides the following functions:

GetAminoAcidPropertiesData, GetAminoAcidPropertiesNames, GetAminoAcid<PropertyName>, GetAminoAcids, IsAminoAcid, IsAminoAcidProperty

FUNCTIONS

GetAminoAcidPropertiesData

```
$DataHashRef = GetAminoAcidPropertiesData($AminoAcidID);
```

Returns a reference to hash containing property names and values for a specified amino acid.

GetAminoAcidPropertiesNames

```
@Names = GetAminoAcidPropertiesNames([$Mode]);
$NamesRef = GetAminoAcidPropertiesNames([$Mode]);
```

Returns an array or a reference to an array containing names of amino acids properties. Order of amino acids properties is controlled by optional parameter *Mode*. Possible values for *Mode*: *Alphabetical or ByGroup*; Default: *ByGroup*

GetAminoAcidPropertyName

```
$Value = GetAminoAcid<PropertyName>($AminoAcidID);
```

Returns amino acid property value for a specified amino acid. These functions are not defined in this modules; these are implemented on the fly using Perl's AUTOLOAD funcion. Here is the list of known amino acids *property names*: DNACodons, RNACodons, AcidicBasic, PolarNonpolar, Charged, Aromatic, HydrophobicHydophilic, IsoelectricPoint, pKCOOH, pKNH3+, ChemicalFormula, MolecularWeight, ExactMass, ChemicalFormulaMinusH2O, MolecularWeightMinusH2O(18.01524), ExactMassMinusH2O(18.01056), vanderWaalsVolume, %AccessibleResidues, %BuriedResidues, AlphaHelixChouAndFasman, AlphaHelixDeleageAndRoux, AlphaHelixLevitt, AminoAcidsComposition, AminoAcidsCompositionInSwissProt, AntiparallelBetaStrand, AverageAreaBuried, AverageFlexibility, BetaSheetChouAndFasman, BetaSheetDeleageAndRoux, BetaSheetLevitt, BetaTurnChouAndFasman, BetaTurnDeleageAndRoux, BetaTurnLevitt, Bulkiness, CoilDeleageAndRoux, HPLCHFBARetention, HPLCRetentionAtpH2.1, HPLCRetentionAtpH7.4, HPLCTFARetention, HydrophobicityAbrahamAndLeo, HydrophobicityBlack, HydrophobicityBullAndBreese, HydrophobicityChothia, HydrophobicityEisenbergAndOthers, HydrophobicityFauchereAndOthers, HydrophobicityGuy, HydrophobicityHPLCAtpH3.4Cowan, HydrophobicityHPLCAtpH7.5Cowan, HydrophobicityHPLCParkerAndOthers, HydrophobicityHPLCWilsonAndOthers, HydrophobicityHoppAndWoods, HydrophobicityJanin, HydrophobicityKyteAndDoolittle, HydrophobicityManavalanAndOthers, HydrophobicityMiyazawaAndOthers, HydrophobicityOMHSweetAndOthers, HydrophobicityRaoAndArgos, HydrophobicityRfMobility, HydrophobicityRoseAndOthers, HydrophobicityRoseman, HydrophobicityWellingAndOthers, HydrophobicityWolfendenAndOthers, ParallelBetaStrand, PolarityGrantham, PolarityZimmerman, RatioHeteroEndToSide, RecognitionFactors, Refractivity, RelativeMutability, TotalBetaStrand, LinearStructure, LinearStructureAtpH7.4

GetAminoAcids

```
$NamesRef = GetAminoAcids([$NameType]);
(@Names) = GetAminoAcids([$NameType]);
```

Returns an array or a reference to an array containing names of amino acids as one letter code, three letter code, or amino acid name controlled by optional parameter $NameType. By default, amino acids names are returned as three letter code. Possible values for *NameType*: *ThreeLetterCode, OneLetterCode, or AminoAcid*.

IsAminoAcid

```
$Status = IsAminoAcid($AminoAcidID);
```

Returns a flag indicating whether or not its a known amino acid ID.

IsAminoAcidProperty

```
$Status = IsAminoAcid($PropertyName);
```

Returns a flag indicating whether or not its a known amino acid property name.

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SEE ALSO

NucleicAcids.pm, PeriodicTable.pm

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