

Amino Acids

Life has a story to tell about its twenty amino acids,
Twenty-one to be very precise!
These dwell in living entities
As proteins and peptides.
They transform, they change or they cause to adjust and amend
All the expressions and each of the complex living manifestation.
We ought to precisely know them
To get in to the roots of cellular biochemical orchestration!

Unique are the entities,
The varied building blocks!
Polymers and oligomers of diverse kinds they form
When together in flocks!
But with DNA or carbohydrates or lipids or others
When these are covalently united together,
They show complexities that are being unveiled;
But further would be known as nature reveals more to mankind in future.

At the physiological pH
Of seven point four,
They are identified to be polar or charged or hydrophobic in nature,
As we read and learn about them a little more!
Twenty of these are L-alphas in forms
With diversities that are mind-blowing of the kind
As we get to know and to remember them
With delights and joys and curiosities in our mind!

All these amino acids
Build up to provide their surrounds with varied polarity.
Nine have always been non-polar
In this astound creativity!
The rest of them are either positively charged bodies, which are polar
Or they could even be negatively charged substances that too are polar!

Though none surprisingly have
Any unique identity of color.

In simple terms,
In flocks when we find their individual locations,
These would determine
Their linear structures and, maybe, their conformations!
The polar ones are extrovert and they would often reside
Outside of the built-in structure.
The non-polar ones are commonly quite shy;
And they would prefer to stay indoors and inside the architecture!

Amongst the amino acids
Non-polar ones are nine;
Glycine, Alanine and Valine
Leucine, Iso-leucine and Methionine
Phenylalanine, Tryptophan and Proline.
Utter "GAVLIMP TryP" for remembering these nine
The trick is simple
And we are fine!

There are others polar or charged,
A total of another twelve
Full knowledge about which
Must also be gained as we swim in this ocean and watch the wave!
Let us learn the polar acids fast in the domain
The uncharged ones first;
Knowing the charged ones shall finally then
Quench our thirst!

Uncharged but polar in this nitty-gritty
Easy to remember as "Seleno-CATS-GT"
Selenocystine, Cystine, Asparagine and Threonine
Serine, Glutamine and Tyrosine
Are the closely held cousins.
Negative polar and positive polar are unique another five
Two negatives and three positives are in this complex hive.
Aspartic acid and Glutamic acid are the acidic negative two's
Arginine, Histidine and Lysine form the basic and the positively charged clues!

Carbon, Hydrogen and Nitrogen are the elemental forms
In all the amino acids, which are built with simple norms.
Methionine and Cysteine have Sulfur in addition
Selenocysteine has Selenium, which is the only exception!
Of the eighteen usual ones, leaving the above three
Asparagine and Glutamine-the amide forms roam in the proteins free.
Cysteines cause complexities, wherever they are
Disulfide bonds they would form, if the peptides come closer.

"GAVLIMP TryP" is the cluster of the non-polar unique nine
"Seleno-CATS-GT" are the polar seven, which are also fine.
"Glut-Aspa" are the negatively charged, another two more
With "His-Arg-Lys" the positively charged three, memorize the broad classes of
four.

We pick up the "Essential" eleven, all from our food
The remaining ten is easily made in our body hood.
With symbols and structures of the above, twenty one molecular mystery
We can begin to learn, the complexities of Protein Chemistry!