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Murchison Chondrite

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MURCHISON CHONDRITE
What Meteorites Tell Us About Organic Matter In The Space

Amino Acids
- More than 66 amino acids were identified.
- 8 of them resembled amino acids in the Earth.
- The other 58 are unknown and used only by fungi and bacteria
- Some have a chiral structure while others have an achiral structure.
- It is believed that amino acids in space were synthesized through non-biological processes.

Even though amino acids found in Murchison are not biotic, it is believed they are the primitive precursors of terrestrial amino acids.

Organic Compounds found in Murchison
- Amino Acids
- Carboxylic Acids
- Aromatic Hydrocarbons
- Nitrogen heterocycles
- Sulfonic and phosphoric acids
- Amines
- Aldehydes and ketones
- Alcohol

Methane: Another important compound found in the space
- Methane is found everywhere in the space, and Murchison is not the exception. Because of this, it is believed that everything in the space had a common origin, and that methane survived the constant changes that occurred in the universe.
- Spatial methane is more deuterated than methane found in the Earth.
- It represented 0.016% of the solvent-soluble organic compounds found in Murchison.

As it can be seen
Amino acids found in Murchison differ in structure from amino acids in Earth. While the carbon atom in the carboxylic acid and amino group of biological terrestrial amino acids have a hydrogen atom attached to it, the Murchison's amino acids have a methyl group instead.

Molecular Structure of Terrestrial Amino Acids

Molecular Structure of some Amino acids found in Murchison
- Chiral
- Achiral