FORMALDEHYDE AND LIFE ORIGINS

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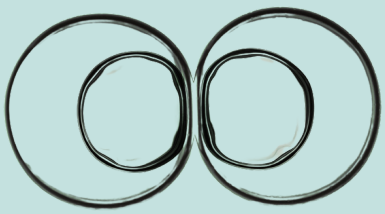
INGREDIENT FOR LIFE ?

Through the formose reaction, formaldehyde may have been a key precursor in the formation of life's building blocks on our planet

Once considered just a basic chemical, formaldehyde is now thought to be a key player in the early chemistry of **LIFE.**

Detected in 1969 in interstellar space and on comets, studies suggest that formaldehyde may have contributed to the organic inventory delivered to early Earth. Research continues.

In laboratory simulations of early Earth conditions, formaldehyde is known to form naturally—offering insight into how life's ingredients may have assembled.



By participating in fundamental reactions, scientific evidence suggests that formaldehyde has helped spark the transition from simple molecules to complex life.

Formaldehyde is implicated in the formation of sugars and other organic compounds, that could include ribose, which ultimately features in RNA, the starting point for **DNA** replication.

REFERENCES

- Prebiotic chemistry: chemical evolution of organics on the primitive Earth under simulated prebiotic conditions, D. Dondi et al., 2007
- Science on the surface of a comet, ESA Blog, Emily, 2015
- Sugars from formaldehyde: a study on the formose reaction, V. Balloi, 2024