

Red rain cell research: A new perspective for interplanetary transfer of life

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Abstract

Red rain fell over Kerala (India) in July 2001 shortly after reports of a meteor exploding in the atmosphere. On analysis, this red rain appeared to contain red particles having an appearance of biological cells, supporting the theory of panspermia by demonstrating that such cells might or must exist in space^(1,2). However, the report of a meteor or comet exploding is still in dispute. Red rain particles were analysed by using TEM, SEM, EDAX, UV and IR spectroscopy. Both TEM and SEM show that these red particles are possibly dormant microbial spores. UV-Visible spectrum of DMSO extract of red rain cells shows a maximum absorbance at 337nm indicating the presence of high UV- absorbing compounds in these red particles. IR spectra of red particles embedded in KBr show a number of infrared features centered at 3.4, 6.2, 7.2, 8.0, 8.6 and 13.3 μ m that have also been reported to be present in the emission spectra of unidentified infrared bands (UIBs) and protoplanetary nebulae (PPNe)⁽³⁾. Features of UIBs are 3.3, 6.2, 7.7, 8.6, and 11.3 μ m and PPNe 3.3, 3.4, 6.2, 6.9, 7.2, 8.0, 8.6, 11.3, 12.2 and 13.3 μ m. EDAX results indicate the presence of high amounts of C, O, N, Si and smaller amounts of Al, S, Ca, Na, Cl, P, Mg, K and Fe. However, the origin of these cells is not clear, but on the basis of current studies it can be hypothesized that the red rain particles could be the dormant spores of yet to be identified algal species or of completely unknown microorganisms.

References

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