



Microbial Journey: Mount Everest to Mars

Utkarsh Sood¹ · Gauri Garg Dhingra² · Shailly Anand³ · Princy Hira⁴ · Roshan Kumar⁵ · Jasvinder Kaur⁶ · Mansi Verma⁷ · Nirjara Singhvi⁸ · Sukanya Lal⁹ · Charu Dogra Rawat⁹ · Vineet Kumar Singh¹⁰ · Jaspreet Kaur⁴ · Helianthous Verma⁹ · Charu Tripathi¹¹ · Priya Singh⁴ · Ankita Dua¹² · Anjali Saxena¹³ · Rajendra Phartyal⁷ · Perumal Jayaraj⁷ · Seema Makhija¹⁰ · Renu Gupta⁴ · Sumit Sahni¹⁰ · Namita Nayyar⁷ · Jeeva Susan Abraham¹⁰ · Sripoorna Somasundaram¹⁰ · Pushp Lata⁹ · Renu Solanki³ · Nitish Kumar Mahato¹⁴ · Om Prakash¹⁵ · Kiran Bala¹⁶ · Rashmi Kumari¹⁷ · Ravi Toteja¹⁰ · Vipin Chandra Kalia¹⁸ · Rup Lal¹

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Abstract A rigorous exploration of microbial diversity has revealed its presence on Earth, deep oceans, and vast space. The presence of microbial life in diverse environmental conditions, ranging from moderate to extreme temperature, pH, salinity, oxygen, radiations, and altitudes, has provided the necessary impetus to search for them by extending the limits of their habitats. Microbiology started as a distinct science in the mid-nineteenth century and has provided inputs for the betterment of mankind during the last 150 years. As beneficial microbes are assets and pathogens are detrimental, studying both have its own merits. Scientists are nowadays working on illustrating the microbial dynamics in Earth's subsurface, deep sea, and polar

regions. In addition to studying the role of microbes in the environment, the microbe-host interactions in humans, animals and plants are also unearthing newer insights that can help us to improve the health of the host by modulating the microbiota. Microbes have the potential to remediate persistent organic pollutants. Antimicrobial resistance which is a serious concern can also be tackled only after monitoring the spread of resistant microbes using disciplines of genomics and metagenomics. The cognizance of microbiology has reached the top of the world. Space Missions are now looking for signs of life on the planets (specifically Mars), the Moon and beyond them. Among the most potent pieces of evidence to support the existence of life is to look for microbial, plant, and animal fossils. There is also an urgent need to deliberate and communicate these findings to layman and policymakers that

Utkarsh Sood and Gauri Garg Dhingra have contributed equally to this work.

✉ Vipin Chandra Kalia
vckaliaku@gmail.com

✉ Rup Lal
ruplal@gmail.com

¹ The Energy and Resources Institute, New Delhi, India

² Kirori Mal College, University of Delhi, Delhi, India

³ Deen Dayal Upadhyaya College, University of Delhi, New Delhi, India

⁴ Maitreyi College, University of Delhi, New Delhi, India

⁵ Post-Graduate Department of Zoology, Magadh University, Bodh Gaya, Bihar, India

⁶ Gargi College, University of Delhi, New Delhi, India

⁷ Sri Venkateswara College, University of Delhi, New Delhi, India

⁸ Hansraj College, University of Delhi, Delhi, India

⁹ Ramjas College, University of Delhi, Delhi, India

¹⁰ Acharya Narendra Dev College, University of Delhi, Delhi, India

¹¹ CMP Degree College, Prayagraj, Uttar Pradesh, India

¹² Shivaji College, University of Delhi, New Delhi, India

¹³ Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi, India

¹⁴ University Department of Zoology, Kolhan University, Chaibasa, Jharkhand, India

¹⁵ National Centre for Cell Sciences, Pune, Maharashtra, India

¹⁶ Deshbandhu College, University of Delhi, New Delhi, India

¹⁷ College of Commerce, Arts and Science, Patliputra University, Patna, Bihar, India

¹⁸ Konkuk University, Seoul, South Korea