

Ananda Mohan Chakrabarty (1938-2020)

(Rocío Palacios-Ferrer)



Origins and Education

Ananda Mohan Chakrabarty was born on 4 April 1938 in Sainthia, West Bengal (India), the youngest of seven brothers. From an early age, he showed a strong curiosity for science. He studied chemistry at St Xavier's College in Calcutta and later earned a doctorate in biochemistry under the supervision of Sailesh Chandra Roy. In 1965 he began postdoctoral research at the University of Illinois, where he investigated how bacteria of the genus *Pseudomonas* degraded hydrocarbons.

The First Patent on a Living Organism

In 1971 he was recruited by General Electric. Around the same time, he began experimenting with bacteria capable of breaking down hydrocarbons associated with oil spills, an increasingly pressing problem in the late twentieth century. By using plasmid transfer and ultraviolet light-induced mutagenesis, he developed a stable strain of *Pseudomonas putida* capable of efficiently degrading crude oil.

In 1972 he applied for a patent covering not only the process and the dispersal method, but also the genetically modified organism itself. After years of legal disputes, on 16 June 1980 the United States Supreme Court ruled in his favour in the landmark case *Diamond v. Chakrabarty*. It was the first time a patent had been granted for a living organism genetically modified through natural methods, a milestone that provided major impetus for biodegradation research and marked the beginning of the modern era of biotechnology. In honor of Ananda Chakrabarty's contribution, 16 June is celebrated each year as World Biotechnologist Day.

Entrepreneurship and Innovation

In 1979, Chakrabarty joined the University of Illinois at Chicago as a professor, where he remained until his retirement in 2018. During these years, he discovered that the bacterial toxin azurin induced apoptosis in cancer cells by stabilising the p53 protein. This breakthrough led to the development of the peptide p28, which showed promising results in early clinical trials.

His vision extended well beyond the laboratory. He founded CDG Therapeutics in the United States and Amrita Therapeutics in India, companies dedicated to developing affordable therapies for cancer, HIV and other diseases.

Recognition and Legacy

Author of more than 250 scientific papers, he also served as an adviser to various governments, the United Nations and OTAN. In 2007 he was awarded the Padma Shri, one of India's highest civilian honours. He was also involved in establishing the International Centre for Genetic Engineering and Biotechnology (ICGEB) in 1983, with branches in Italy, India and South Africa, an institution created to democratise biotechnology for developing countries.

Chakrabarty will be remembered as a pioneering scientist, a visionary inventor and an inspiring mentor. His work demonstrated that biotechnology can be harnessed as a powerful tool to address challenges in health, sustainability and social justice.

Epilogue: Never Stop Dreaming

In his later year, Chakrabarty envisioned a future where medicines could reach the poorest communities through everyday foodstuffs. He expressed it with characteristic simplicity:

“Never stop dreaming.”

His legacy is more than scientific: it is a vision of a world where biotechnology not only drives innovation, but also brings hope and dignity to humanity.

