



Nanobots for Cancer Therapy (IISc Breakthrough)

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Subject Preference: GS Paper III (Science & Technology – Biotechnology, Nanotechnology)

- **The Basics:** Nanobots are microscopic machines (billions of a meter) designed to perform tasks at the cellular level.
- **The Breakthrough:** Dr. Ambarish Ghosh (IISc) developed **Magnetic Nanobots** (helical structures) that can be steered using external magnetic fields through the bloodstream or even dense tissues like teeth.
- **Significance:** * **Targeted Drug Delivery:** Unlike Chemotherapy (which kills both good and bad cells), nanobots deliver drugs *only* to the tumor site, minimizing side effects.
- **Transformation Prize 2025:** Recognized for its potential to make advanced healthcare affordable in India.