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IIT Madras releases world's most detailed 3D atlas of human brainstem at cell resolution

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ANCHOR is publicly available to ensure that this cutting-edge research benefits researchers, doctors and patients around the world



Indian Institute of Technology Madras (IIT-M) has released the world's most detailed 3D Atlas of human brainstem, through its high throughput brain imaging and computing platform that transforms whole human brains into 3D cell-resolution atlases.

Developed by Sudha Gopalakrishnan Brain Centre (SGBC) at IIT Madras, 'ANCHOR' (Atlas of Neurochemical Characterisation of the human brainstem with 3D Reconstruction) comprises the most comprehensive, multi-modal, 3D maps and atlases of the human brainstem to date spanning from prenatal period to childhood and adult brains.

These maps encompass more than 200 brainstem nuclei and fiber tracts, reconstructed from hundreds of serial sections. To resolve distinct neurochemical cell types, eight complementary immunostains were overlaid across more than 500 sections, enabling detailed mapping.

SGBC aims to build the most comprehensive set of cell resolution human brain maps across life span and diseases. This Centre has become a truly global interdisciplinary team featuring more than 200 researchers, engineers and technicians working with 20 collaborators from different countries.

ANCHOR was released during the 3rd BRICS Neuroscience Symposium 2026 held from 5th to 7th June 2026 at the IIT Madras campus.