



Hai Yan

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Dr Yan's career began with medical training, followed by a Ph.D. at Columbia University and postdoctoral training at Johns Hopkins under Dr Vogelstein and Dr Kinzler. At Duke School of Medicine, he held esteemed positions, including a tenured full professorship of Pathology, the Henry S. Friedman Distinguished Professor, and Co-Director of Neuro-Oncology. His research significantly contributes to understanding cancer's molecular mechanisms, advancing diagnosis and drug development. His most notable discoveries include the identification of IDH1 and IDH2 mutations in gliomas. As co-founder of Genetron Health, he served as its chief scientific officer, providing molecular diagnoses for over cancer patients, culminating in a successful public offering on the NASDAQ. At IMCB A*STAR, Dr Yan leads a neurooncology program. Dr Yan has received several prestigious awards, including the 2014 AACR Team Science Award and the 2021 International Prize for Translational Neuroscience from the Max Planck Society in Germany.

Topic: Biologic and Therapeutic Roles of IDH Mutation

Every type of cancer has unique genetic signatures, with specific genetic changes driving tumorigenesis and influencing tumor behavior and patient outcomes. In colorectal cancer, breast cancer, and retinoblastoma, tumor suppressor genes like APC, BRCA1, and RB are pivotal. However, in adult progressive gliomas, a genome-wide study revealed an atypical oncogene, IDH1, at the core of the TCA cycle. When mutated, IDH1 produces high levels of oncometabolites, reprogramming the epigenetic genome and metabolomics. This discovery has revolutionized glioma classification and treatment, with targeted small molecules significantly prolonging patient lives through precise diagnosis and tailored therapy. Advanced immunotherapeutics and combination treatments are expected to further progress the field.