

TRANSLATION, TECHNOLOGY TRANSFER AND PRODUCT DEVELOPMENT

Govindaraju Lab has licensed inventions for developing point-of-care diagnostic kits and therapeutics, and undertaken product development through approved translational projects.

ALZHEIMER'S THERAPEUTICS

A novel drug candidate (TGR63) discovered for the treatment of Alzheimer's disease. The efficacy of TGR63 is demonstrated in AD animal model which reverse cognitive decline. Advanced studies including clinical studies are planned with a pharmaceutical company.

This invention was highlighted by Kiran Mazumdar-Shaw (February 25 2021)



THE ECONOMIC TIMES (February 2021)
Bengaluru-based scientists led by T Govindaraju discover possible cure for Alzheimer's

ANI | 27 Feb 2021, 11:29 PM IST

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A team of Bengaluru-based scientists led by T Govindaraju, a Professor of Jawaharlal Nehru Centre for Advanced Scientific Research, has discovered a possible cure for Alzheimer's disease, the leading cause of dementia worldwide.

1233 views

ANI NEWS (February 2021)
<https://youtu.be/4UJ1leSJgYk>

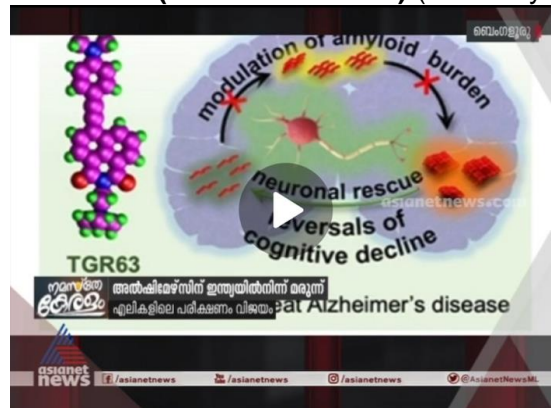


Professor T Govindaraju Jawaharlal Nehru Centre for Advanced Scientific Research

Bengaluru scientists discovers possible cure for Alzheimer's, now seeking funding for clinical trials

ANI | Updated: Feb 27, 2021 19:28 IST

ASIANNET TV (DOCUMENTARY) (February 2021)



LONGIVITY-
TECHNOLOGY (UK)

Researchers in India say they have discovered a promising drug target that may slow or even halt the progression of Alzheimer's.



Highlighted in major newspapers and media/TV

[JNCASR Scientists develop a new molecule that could be a potential drug candidate for the treatment of Alzheimer's](#) (PIB, GoI, February 24, 2021)

[New molecule could be potential drug candidate to halt or cure Alzheimer's](#) (Times of India, February 26, 2021)

[Bengaluru scientists discovers possible cure for Alzheimer's, now seeking funding for clinical trials](#) (ANI News, February 26, 2021)

[Bengaluru scientists discover possible cure for Alzheimer's](#) (ANI News, February 27, 2021)

[Bengaluru-based scientists led by T Govindaraju discover possible cure for Alzheimer's](#) (The Economic Times, February 27, 2021)

[JNCASR team develops potential drug candidate for Alzheimer's](#) (The Hindu, March 06, 2021)

[JNCASR develops molecule that may help treat Alzheimer's](#) (The New Indian Express, February 25, 2021)

[Alzheimer's disease reversible? Bengaluru scientists say 'possibly'](#) (Deccan Herald, February 27, 2021)

[Bengaluru scientists discover molecule that could cure for Alzheimer's](#) (Deccan Herald, February 26, 2021)

[Scientists discover possible cure for Alzheimer's, seeks funds for trials](#) (Hindustan Times, February 27, 2021)

[JNCASR scientists develop molecule to halt dementia](#) (The Pioneer, February 26, 2021)

[Scientists develop new molecule that could halt, cure Alzheimer's](#) (The Federal, February 26, 2021)

[JNCASR develops potential drug candidate for Alzheimer's disease](#) (The BioSpectrum, February 26, 2021)

[Kiran Mazumdar-Shaw](#) (February 26, 2021)

[JNCASR Scientists Develop A New Molecule That Could Be A Potential Drug Candidate For The Treatment Of Alzheimer's.](#) (The IndiaEducation Dairy.com, February 24, 2021)

[JNCASR Scientists develop potential drug candidate for Alzheimer's treatment](#) (Jagaran Josh, February 24, 2021)

[JNCASR Scientists Develop a New Molecule for Treatment of Alzheimer's](#) (SME Street, February 24, 2021)

[Indian Scientists Develop Novel Molecule That Could Be Potential Drug Candidate For Treatment Of Alzheimer's Disease](#) (Swarjaya Magazine, February 24, 2021)

Behavioural studies show the reversal of cognitive decline in AD animal model.

<https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1002%2Fadtp.202000225&file=SupportingVideo3.avi>

<https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1002%2Fadtp.202000225&file=SupportingVideo2.avi>

<https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1002%2Fadtp.202000225&file=SupportingVideo1.avi>

NATURAL PRODUCT BASED MULTIFUNCTIONAL INHIBITOR OF MULTIFACETED TOXICITY OF ALZHEIMER'S DISEASE

Our group has developed a natural product derivative that effectively ameliorate multifaceted amyloid toxicity both *in vitro* and *in cellulo* conditions. The multifunctional attributes makes it a promising candidate for developing effective therapeutics to treat multifaceted toxicity of Alzheimer's disease.

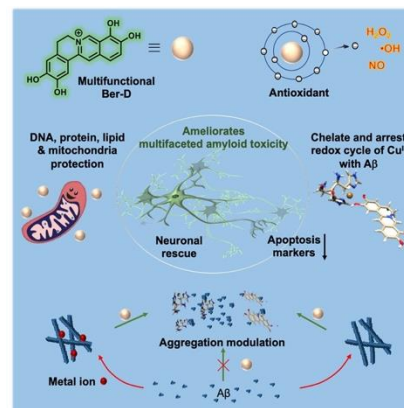
News highlights

[JNCASR scientists develop a natural product-based Alzheimer inhibitor](#) (PIB, GOI; DST, GoI, April 2020)

[Natural Product Based Alzheimer Inhibitor By JNCASR Scientists](#) (Biotechnika, May 07, 2020)

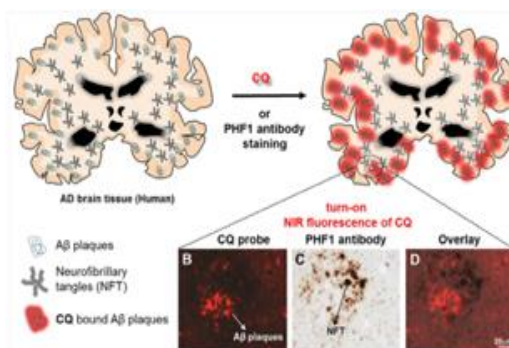
[Scientists at JNCASR develop berberine based Alzheimer's inhibitor "Ber-D"](#) (Biotechnika, April 29, 2020)

[JNCASR scientists develop a natural product based Alzheimer inhibitor](#) (Pharmatutor, IBEF, GK Series, April 2020)



(IV) ALZHEIMER'S DIAGNOSTICS (Translation)

Our group has developed novel smart molecular tools with antibody selectivity and sensitivity, and methods for detection of Alzheimer's disease and to distinguish it from other neurodegenerative disorders (Unique technique to detect AD in case of mixed dementia). This invention is taken up for translation to develop affordable and early diagnosis for Alzheimer's disease (NIR/PET based brain imaging and detection of biomarkers in biofluids and retina) through the startup (VNIR Biotechnologies Pvt. Ltd.) founded by T. Govindaraju.

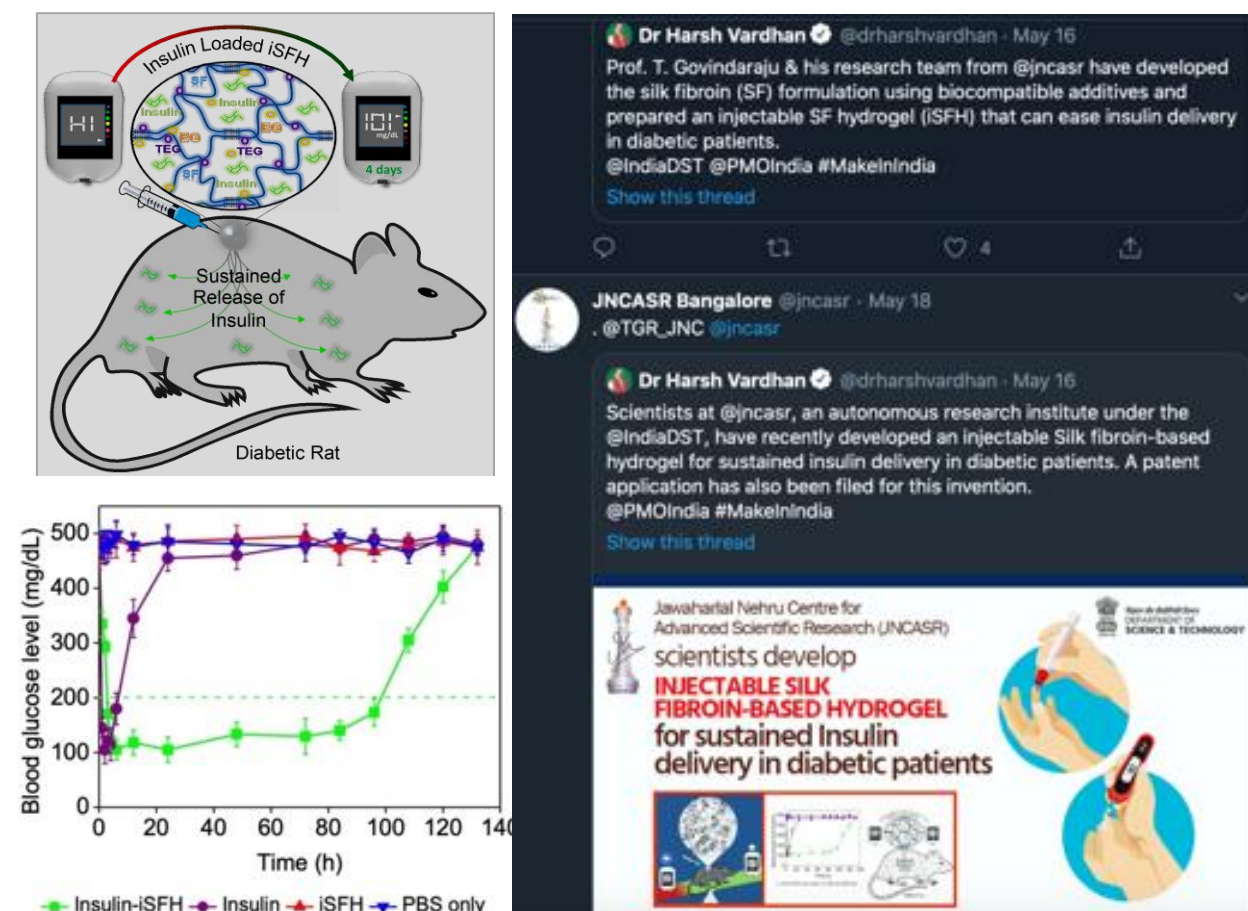


"Health & Wellbeing Winner" recognized by the **Commonwealth Chemistry** (UK) event (Federation of Commonwealth Chemical Sciences Societies) held across different continents and 38 countries.

[Alzheimer's disease \(diagnosis\) is profiled in Club SciWri](#) (April 5, 2018)

(V) INJECTABLE SILK-BASED FORMULATION FOR SUSTAINED INSULIN DELIVERY

Diabetes (T1D and T2D) is a chronic disease affecting over > 70 million in India and > 400 million people worldwide. The conventional and last resort of treatment involves repeated subcutaneous insulin injections, which cause pain, local tissue necrosis, infection, nerve damage and locally concentrated insulin amyloidosis responsible for inability to achieve physiological glucose homeostasis. Our group developed silk-based formulation for controlled and sustained (maintaining normal glucose levels for 4 days/administration) insulin delivery and the invention being considered for translation for human use.



The importance and societal relevance (public health) of this invention were covered extensively, [JNCASR scientists develop injectable Silk Fibroin-based hydrogel for sustained Insulin delivery in diabetic patients](#) (4 days sustainable insulin delivery) (DD News, May 15, 2020)
[Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, GoI.](#) (FB, May 16, 2020)

[Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, GoI.](#) (twitter, May 16, 2020)

[Scientists develop injectable silk fibroin-based hydrogel for sustained insulin delivery in diabetic patients](#) (Future Medicine, May 16, 2020)

[JNCASR Scientists Innovate for Diabetic Patients](#) (Medicircle, May 15, 2020)

[Scientists develop injectable hydrogel for sustained insulin delivery in diabetic patients](#) (The Poiner, May 15, 2020)

[New injectable hydrogel may ease insulin delivery in diabetic patients](#) (Asian Medical Tourism, May 15, 2020)

[Sciesntists of JNCASR develop injectable silk-fibroin-based hydrogel for insulin delivery in diabetic patients](#) (AffairsCloud, May 16, 2020)

[JNCASR develops injectable silk fibroin-based hydrogel for diabetic patients](#) (Devdiscourse News Desk, May 16, 2020)

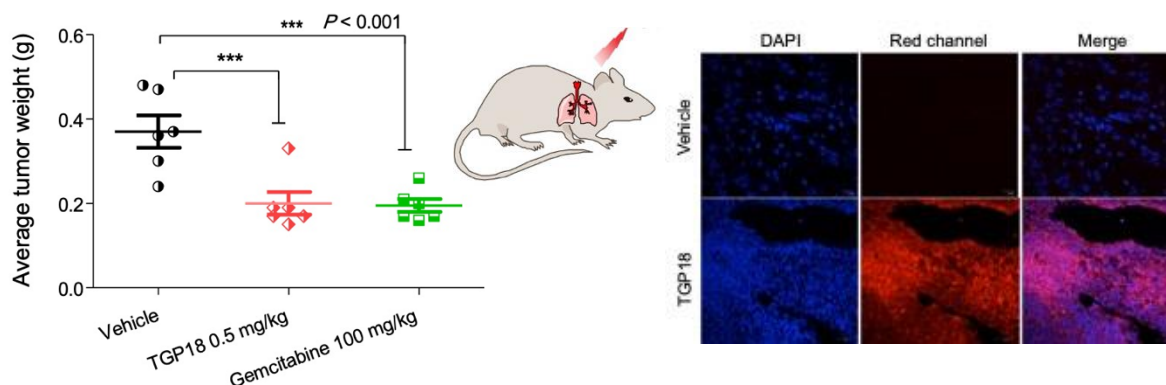
[JNCASR develop injectable Silk Fibroin-based hydrogel for sustained Insulin delivery in diabetic patients](#) (Freshers Live, May 15, 2020)

[Diabetes Patients Will Get Rid Of Repeated Insulin](#) (Hindi news, Rajasthan Patrika, May 31, 2020)

[All India Radio Vijayawada news](#) (AIRVijayawada news/TV, May 16, 2020)

(VI) DIAGNOSTIC THERAPY (THERANOSTICS) FOR LUNG CANCER

Lung cancer, the most common cause of cancer-related death worldwide is tough to detect at early stages, making it difficult to treat. Our group discovered a novel theranostic candidate TGP18 with anti-lung cancer activity and tumour tissue imaging potential (diagnosis and treatment of lung cancer). TGP18 is one of the first small molecule-based theranostic drug candidates for lung cancer with implications in personalized medicine. This invention has excellent clinical translational potential and in discussion with a pharma company for advanced toxicology and clinical studies.



This invention was highlighted by Kiran Mazumdar-Shaw and Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, GoI.



The importance and societal relevance of this invention for the detection and treatment of lung cancer is highlighted through extensive coverage

[JNCASR researchers develop diagnostic therapy for Lung Cancer](#) (DD News, September 02, 2020)

[JNCASR researchers develop diagnostic therapyfor Lung Cancer](#) (PIB, GOI, September 06, 2020)

[JNCASR researchers develop diagnostic therapy for Lung Cancer](#) (DST, GOI, September 02, 2020)

[Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, GoI.](#) (Twitter, September 03, 2020)

[Kiran Mazumdar-Shaw](#) (Twitter, September 08, 2020) (DST, GOI, September 02, 2020)

[Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, GoI.](#) (FB, September 03, 2020)

[Indian researchers develop diagnostic therapy for lung cancer](#) (Zee News, September 06, 2020)

[Researchers develop therapy that can detect lung cancer at early stage](#) (The Ecomonic Times, September 07, 2020)

[JNCASR researchers develop diagnostic therapy for lung cancer](#) (PharmaBiz, September 07, 2020)

[JNCASR scientists develops novel diagnostic therapy for lung cancer](#) (Biotechnika, September 07, 2020)

[Indian researchers develop diagnostic therapy for lung cancer](#) (Newstube, September 07, 2020)

[JNCASR researchers developed diagnostic therapy for Lung Cancer](#) (FreshersLive, September 07, 2020)

- Julolidine conjugates and methods for their preparation and use. US patent No. 8642764. Transferred to Intellectual Ventures (IV)
- Radical Scavenging antioxidant cyclic dipeptides and silk fibroin biomaterials (patent filed). Joint development agreement signed; technology has been shared with L'OREAL INDIA PRIVATE LIMITED.
- K. Rajasekhar (Int. Ph.D. student) work on "Near Infrared Fluorescence Probes for Diagnosis of Alzheimer's Disease" has been awarded with "**Gandhian Young Technological Innovation Award (GYTI 2017)**" and project for translation of the invention. and received the award at function organized at Rashtrapati Bhavan, New Delhi" and received funding for translation by **BIRAC-SRISTI**.
- M. B. Avinash's (Ph.D. student,) work on "Self-cleaning functional molecular material" has been appreciated with "**Gandhian Young Technological Innovation Award**" under "SRISTI Technological Edge/Strategic Innovation" category at Indian Institute of Management - Ahmedabad (IIM-A). This work was highlighted in newspaper *Bangalore Mirror* as "A self-cleaning surface that makes housework a cakewalk".

