

List of ten best papers

Top 10 most important papers (from past 5 years)

Disease Amyloids: Diagnostics and therapeutics of Alzheimer's disease

1. S. Samanta, K. Rajasekhar, M. Ramesh, N. A. Murugan, S. Alam, D. Shah, J. P. Clement and **T. Govindaraju**, Naphthalene monoimide derivative ameliorates amyloid burden and cognitive decline in a transgenic mouse model of Alzheimer's disease, **Adv. Therap.** **2021**, *4*, 2000225.



<https://onlinelibrary.wiley.com/doi/full/10.1002/adtp.202000225>

<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>

A novel **drug candidate (TGR63)** discovered for the treatment of Alzheimer's disease. The efficacy of TGR63 is demonstrated in Alzheimer's disease animal model, showed significant reduction of amyloid burden in the Alzheimer's disease brain and reversal of cognitive decline. **This drug candidate is taken up for clinical studies with a pharmaceutical company (IGC Pharma).**

Highlighted in major newspapers and media/TV

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

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

2. K. Rajasekhar, S. Samanta, V. Bagoband, N. A. Murugan and **T. Govindaraju**, Antioxidant berberine-derivative inhibits multifaceted amyloid toxicity, **iScience** (Cell Press), **2020**, *23*, 100105.

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)

3. Y. V. Suseela, P. Satha, N. Arul Murugan and **T. Govindaraju**, Recognition of G-quadruplex topology through hybrid binding with implications in cancer theranostics, **Theranostics** **2020**, *23*, 10394-10414.

First small molecule-based G-quadruplex topology-targeting **theranostic drug candidate for lung cancer**. This work is the outcome of the study to understand inverse relationship between cancer and Alzheimer's disease. Translational efforts are underway.

News highlights

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

[JNCASR researchers develop diagnostic therapy for 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 Economic 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)

4. S. Samanta and **T. Govindaraju**, Unambiguous detection of elevated levels of hypochlorous acid in double transgenic AD mouse brain, **ACS Chem. Neurosci.** **2019**, *10*, 4847-4853.

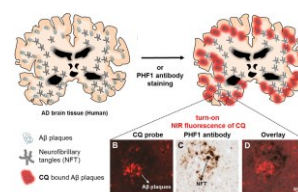
Detection, Imaging and quantification of ROS produced and proximally localized with amyloid plaques to validate as new biomarker for Alzheimer's disease. This work validated a new biomarker (hypochlorous acid and amyloid plaques), which **qualified to be added to** National Institute on Aging and Alzheimer's Association (**NIA-AA**) research framework 2018 designated list of biomarkers (ATN) for reliable diagnosis Alzheimer's disease. 10th year anniversary Cover Page Article.

5. S. Samanta, K. Rajasekhar, V. Babagond and **T. Govindaraju**, Modulation of metal-dependent and independent multifaceted amyloid toxicity, oxidative stress and inflammation, **ACS Chem. Neurosci.**, **2019**, *10*, 3611-3621. (Supplementary Cover Page).

Multifunctional inhibitor of multifaceted amyloid toxicity of Alzheimer's disease.

6. K. Rajasekhar, N. Narayanaswamy, N. A. Murugan, K. Viccaro, H-G. Lee, K. Shah, T. Govindaraju, A β plaque-selective NIR fluorescence probe to differentiate Alzheimer's disease from tauopathies, **Biosens. Bioelectron.** **2017**, *98*, 54-61.

Alzheimer's disease Diagnosis: Unique probe and method to **detect and distinguish Alzheimer's disease from other neurodegenerative diseases and in mixed dementia**. To translate this invention, Govindaraju has founded a startup (VNIR Biotechnologies Pvt. Ltd, www.vnir.life) to develop NIR and PET-based platform for early diagnosis of AD. He is also developing (with VNIR) "**Retina Scan**" based simple, early and advanced diagnostic platform for AD.



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

7. N. Narayanaswamy, S. Narra, R. Nair, D. K. Saini, P. Kondaiah and **T. Govindaraju**, Stimuli-responsive colorimetric and NIR fluorescence combination probe for selective reporting of cellular hydrogen peroxide, **Chem. Sci.** **2016**, *7*, 2832-2841.

First NIR fluorescence combination probe for ROS, useful in assessing oxidative stress in Alzheimer's disease. Product commercialized and further **utility for prognosis/ diagnosis** of Alzheimer's disease, cancer, oxidative stress and other ROS related diseases.

8. N. Narayanaswamy, S. Das, P. K. Samanta, K. Banu, G. P. Sharma, N. Mondal, S. K. Dhar, S. K. Pati, and **T. Govindaraju**, Sequence-specific recognition of DNA minor groove by an NIR-Fluorescence switch-on probe and its potential applications, *Nucleic Acids Res.* **2015**, 43, 8651 - 8663.

First NIR fluorescence probe for DNA minor groove, used to develop in situ ROS probe. This probe has the potential to selectively detect and inhibit malaria parasite with realistic implications for developing **diagnostic and therapeutic candidates for malaria**.

Functional Amyloids

Silk Biomaterials and Molecular Architectonics (reductionistic engineering principles for advanced biomaterials)

9. D. Maity, S. Samanta, S. Sarkar, S. Alam and **T. Govindaraju**, Injectable silk fibroin-based hydrogel for sustained insulin delivery in diabetic rats, *ACS Appl. Bio Mater.* **2020**, 3, 3544-3552.

Controlled/Sustained Delivery of Insulin for 4 days. News highlight: JNCASR scientists develop injectable Silk Fibroin-based hydrogel for sustained Insulin delivery in diabetic patients.

This invention was 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, Gov.](#) (FB, May 16, 2020)

[Dr. Harsh Vardhan, Honourable Minister for Minister of Health & Family Welfare, Science & Technology, Earth Sciences, Gov.](#) (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 Pioneer, May 15, 2020)

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

[Scientists 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)

10. S. Manchineella, G. Thiruvikraman, K. K. Khanum, P. C. Ramamurthy, B. Basu and **T. Govindaraju**, **2016**, Pigmented silk nanofibrous composite for skeletal muscle tissue engineering *Adv. Healthcare Mater.*, 5, 1222-1232.

Highlighted in ChemistryViews as "Pigments in Tissue Engineering". Skeletal muscle tissue is prone to wear-tear and this work has implications for its repair. This work also led to neuronal tissue engineering using stem cells, to be used as complementary stem cell-based treatment for Alzheimer's disease.

http://www.chemistryviews.org/details/news/9137581/Pigments_in_Tissue_Engineering.html

