



## Combining Deep Science with Deep Tech: CSIR-CCMB and Aganitha sign a framework agreement to apply Generative AI for therapeutic design and research in multiple disease areas

- An umbrella MoU signed to apply Aganitha's Generative AI solutions for small molecule and antibody design for translation of CCMB's R&D findings into therapeutic candidates
- Multiple targets for Malaria and TB to be addressed in the initial phase of collaboration
- Design of research antibodies for furthering neurology investigations also in progress

May 29, 2024, Hyderabad, India. The Centre for Cellular & Molecular Biology (CCMB) under the Council of Scientific & Industrial Research (CSIR), and Aganitha, a new generation *in silico* solutions provider combining the power of Deep Science and Deep Tech to bring novel medicines to market faster, have signed an umbrella memorandum of understanding (MoU) to apply Generative AI solutions for designing novel therapeutics and research tools addressing needs in multiple disease areas. Initial areas of collaboration include target analysis, small molecule design, antibody and nanobody engineering for addressing Malaria, Tuberculosis (TB) and neurological disorders.

This strategic collaboration is designed to translate discoveries from the globally acclaimed research labs of CCMB into therapeutic candidates through the application of Aganitha's Generative AI solutions for biopharma R&D.

[Dr. Puran Singh Sijwali](#), Senior Principal Scientist at CCMB, explained the significance of this collaboration in Malaria studies, stating, *"We continue to struggle with controlling malaria due to drug resistance of the pathogen, lack of broadly available vaccines, and insecticide resistance of mosquitoes. Collaborative efforts of interdisciplinary experts are necessary to develop new drugs and vaccines for malaria. Towards this goal, we are leveraging Aganitha's Generative AI capabilities in small molecules space for validated parasite drug targets to predict, test, and optimize potential antimalarial compounds."*

[Dr. Raghunand Tirumalai](#), Senior Principal Scientist at CCMB, summarized the advances that can be made through this collaboration in TB research, saying, *"In collaboration with Aganitha, we are working towards the structure-based discovery of small molecule inhibitors targeting essential proteins of Mycobacterium tuberculosis. We are excited about this partnership and anticipate that this will lead to the identification of multiple novel anti-TB therapeutic leads"*.

[Dr. Janesh Kumar](#), Senior Principal Scientist at CCMB, studying neurotransmission in the central nervous system noted, *"The collaboration between CSIR-CCMB and Aganitha to develop nanobody binders targeting a class of neurotransmitter receptors, called the GluD1 receptors, marks a significant stride in neuroscience and pharmacology. These nanobodies might serve as precise molecular tools to modulate GluD1 receptor activity, potentially unlocking novel therapeutic avenues for neurological disorders like Alzheimer's and epilepsy."*

*With their small size and high specificity, nanobodies hold promise for targeted drug delivery and imaging applications, paving the way for tailored treatments with reduced side effects.”*

Commenting on this R&D partnership, Director CCMB, [Dr. Vinay Nandicoori](#) noted that *“The collaboration with Aganitha is forward-looking, utilizing CCMB’s strength in fundamental research on disease biology and Aganitha’s expertise in AI-driven solutions. It is timely for us to forge such a collaboration to take our lab leads towards more real-life solutions.”*

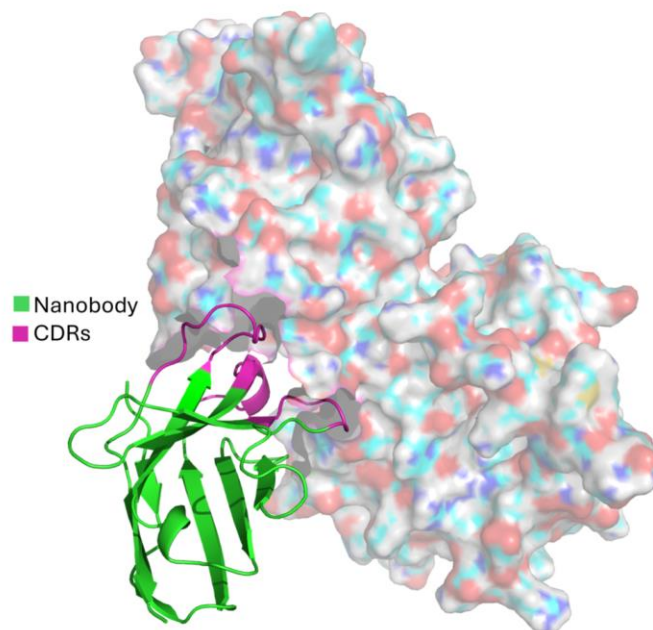


Illustration of a nanobody recognising specific regions of GluD1

[Mr. Prasad Chodavarapu](#), co-founder and MD of Aganitha, sees the relationship between CCMB and Aganitha as a great example of the academia-industry collaboration needed to make a significant impact towards solving human diseases and suffering. *“At Aganitha, we are inspired by the opportunity to make a meaningful and lasting impact on humanity with our work. We are a multi-disciplinary team of researchers specializing in multi-scale systems biology, quantum chemistry, and Generative AI, taking the here-and-now opportunity to leverage the virtual loop of innovation happening between Deep Science and Deep Tech, to transform global life sciences R&D. We are very excited by the ongoing collaboration with CCMB. It is very important for us to establish a rich and vibrant ecosystem of science and tech collaborations in Hyderabad and India. CCMB-Aganitha collaboration is only a first step in this direction. We look forward to more such collaborations”*, he said.

## **About CCMB**

The Centre for Cellular & Molecular Biology (CCMB) under the Council of Scientific & Industrial Research (CSIR) is a premier research organization based in Hyderabad, India. Designated as a "Centre of Excellence" by the Global Molecular and Cell Biology Network, UNESCO, the Centre addresses fundamental questions in biology, translates research findings into technologies for societal needs, and promotes centralized national facilities for new and modern techniques in the interdisciplinary areas of biology. CCMB is widely recognized for its pioneering work on genomic studies of Indian and South Asian populations and infectious disease research. CCMB collaborates with global research institutions on a wide spectrum of research topics in Biology.

## **About Aganitha**

Aganitha is a new generation *in silico* company that integrates high-throughput sciences with deep learning-based generative models to solve complex target discovery and drug development challenges powering advanced therapies such as Gene and Cell therapy, RNA, Antibody, SMOL. Aganitha partners with global pharma to bring novel medicines to market faster. Physics based chemistry, omics enriched biology, generative AI based drug design and tech innovations power our offerings in Oncology, Auto-immune disorders, CNS disorders, Rare genetic disorders, Metabolic disorders, and Infectious diseases.