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# Mission: Rapid diagnostic detection of dengue

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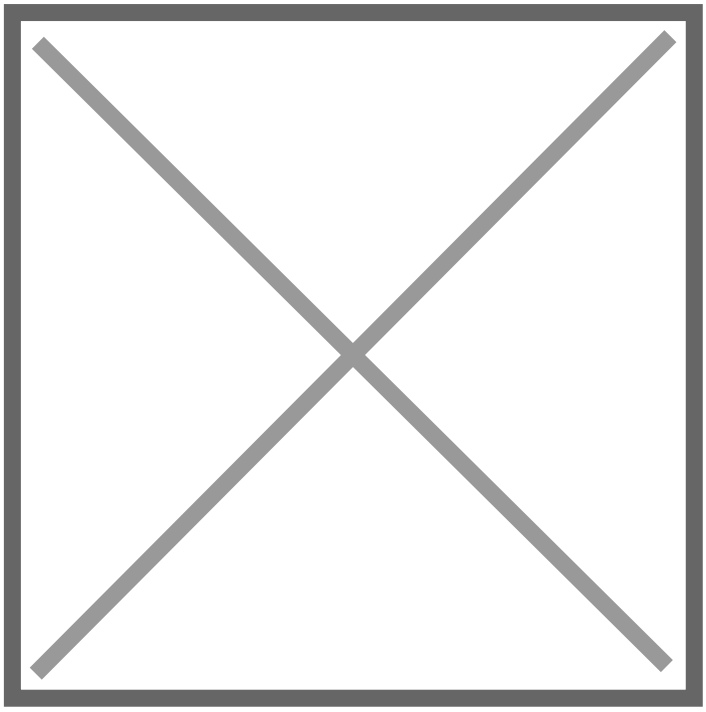
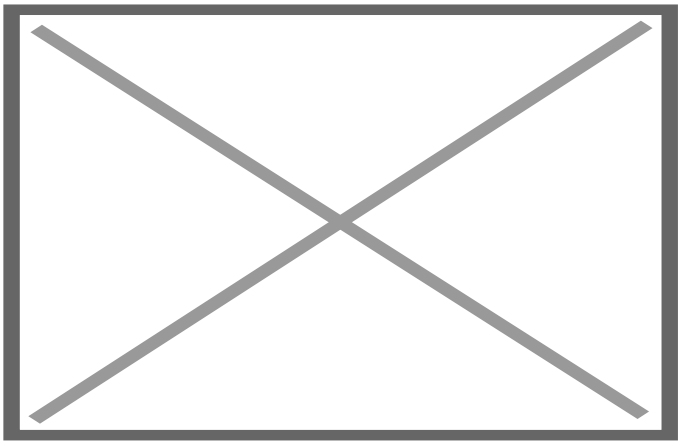
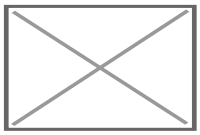




The transfer of a technology developed by ICGEB to J Mitra has resulted in the successful commercialization of a diagnostic product for early-stage detection of dengue

Since there is no treatment currently available for dengue, the key is early detection, recognition and understanding of the clinical problems during the different phases of the disease. However, the tests available are mostly based on the detection of specific antibodies of the dengue virus. The limitation is that these antibodies are produced several days after the first clinical symptoms appear.

New Delhi-based J Mitra, in collaboration with the International Center for Genetic Engineering and Biotechnology (ICGEB), New Delhi, introduced a rapid ELISA-based test for diagnosing the dengue virus. The specific detection of dengue virus using NS1 antigen can be done on the first day itself, thereby saving valuable time of the patient.



Named as the Dengue Day 1 test, this rapid solid phase immuno-chromatographic test is for the qualitative detection of dengue NS1 antigen and differential detection of IgM and IgG antibodies to the dengue virus in human serum. This test is for in vitro diagnostic use only and is intended as an aid in the earlier diagnosis of dengue infection and presumptive diagnosis between primary and secondary dengue infections.

The funding of upto ₹50 lakh from the Department of Biotechnology (DBT), Government of India, served as a major catalyst to the research efforts by Dr Navin Khanna Group Leader, Recombinant Gene Lab, ICGEB. The technology developed by him was transferred to J Mitra for $1 lakh under a non-exclusive agreement. As per the agreement, the company didn't had to pay any royalty amount to the innovator.

Incorporated in 1969, J Mitra is considered a leading company in the production and marketing of medical diagnostic kits in India. The core technical team at J Mitra were guided by the group at the ICGEB to replicate the technology thus resulting in outcomes at their level.

Talking about the project, Dr Navin Khanna said, Ã¢â?¬Å?Our aim was to make a cost-effective product that is within the

reach of the common people. J Mitra has showed real professionalism and dedication to create mass awareness about the product. This partnership would not have been a success without their participation.Ã¢â?¬?

**The way forward**

So far, more than 500,000 Dengue NS1 Antigen tests have been used in the laboratories in India to diagnose and detect dengue infection, in some cases on the first day of fever. The tests priced at 6 per test, have been acknowledged by competitors for its quality and low prices. The low cost has prevented the entry of several Chinese diagnostic kits into the Indian market.

Since the launch of the product in 2010, all imported dengue kits from the US, Australia and South Korea have been slowly disappearing from India. Praising the efforts of the Department of Biotechnology (DBT) in this direction, Dr Khanna said, Ã¢â?¬Å?The DBT has supported several public-private partnerships and made diagnostic kits highly affordable, thereby making India not only self-sufficient, but also an exporter of these kits. Because of this, several diagnostics kits from other countries have been replaced with indigenous kits.Ã¢â?¬?

**Rahul Koul** in New Delhi