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Combating cancer with innovation

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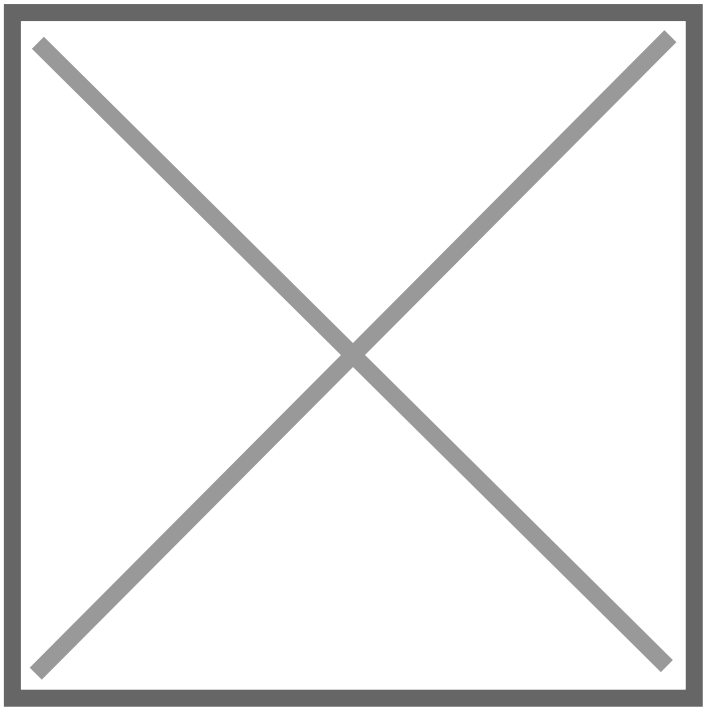
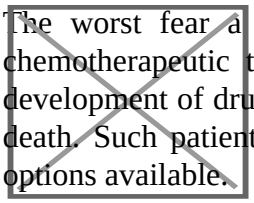


Funding from DBT has boosted the joint efforts of Sphaera Pharma, LeadInvent Technologies, and ICGEB to develop a novel combination therapy for the treatment of resistant and non-responsive cancers



The worst fear a cancer patient can experience is its relapse after long sessions of chemotherapeutic treatment. One of the main causes of failure in the treatment is the development of drug resistance by the cancer cells leading to recurrence of disease or even death. Such patients with resistant and responsive cancers have very limited therapeutic options available.

To find out the best way to tackle these grave complexities, three organizations collectively decided to spearhead their joint efforts in this direction. Manesar-based Sphaera Pharma along with LeadInvent Technologies, Delhi and International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi in July, 2011, initiated a project aimed at providing viable treatment option to the cancer patient population. The project received funding to the tune of ₹2 crore from Biotechnology Industry Partnership Program (BIPP) of the Department of Biotechnology (DBT), of which Sphaera Pharma received ₹ 1.48 crore, whereas LeadInvent accepted ₹35 lakh. ICGEB too, for their part received a certain amount of funding for their research efforts.

The R&D team at Sphaera is targeting important synergistic onco proteins, by taking the responsibility of studying the pharmacology in collaboration with their partner ICGEB, in identification of targets, medicinal chemistry and other profiling and evaluation assays.

Dr Kanury Rao and his team at ICGEB is looking at the pharmacological aspects of cell signaling, while the first series of molecules were designed by Sphaera and LeadInvent Technologies through LeadInvent's computational biology tools which helped in the understanding of the ligand-protein interactions. Sphaera has subsequently been able to design a series of compounds that are currently being evaluated and seem to be highly promising. The teams of respective organizations have been intracting constantly to share

the progress and research insights.

Way forward

At present the project has completed its first phase and is now all set to enter the second stage of research and development. Once the molecule clears the trials, it might take close to six years before overcoming the hurdles and claiming an absolute success. Since the first stage of development involving the proof of concept is complete, the subsequent phase is expected to take about two to three years and will result in an Investigational New Drug (IND) application and clinical trials.

According to Dr Sundeep Dugar, president and CEO, Sphaera Pharma, Ã¢â?¬Å?It is not a generic drug and being an innovative molecule, complexities are involved, and these have to be addressed and resolved. Apart from that, the rising cost of resources and funding issues also remain there.Ã¢â?¬? Agreeing, Mr Pankaj Sharma, CEO, LeadInvent Technologies, opined, Ã¢â?¬Å?It will take another 2-3 years to see something concrete coming up and much also depends on DBT's funding for the next stage.Ã¢â?¬?

However, with the million dollar opportunity and far reaching social consequences that will come with the project's success, the partners are highly optimistic about having the adequate resources to keep the innovative research efforts moving on the right track.

Rahul Koul