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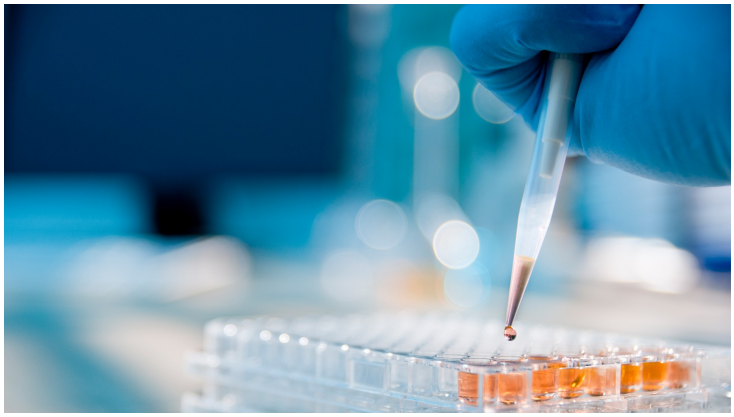
ASIA EDITION

Singapore revisits potent drug as promising treatment for acute leukaemia

31 January 2023 | News

Two-pronged attack of a “forgotten drug” simultaneously targets two cancer-causing pathways of leukaemia tostop the disease in its tracks



A team of researchers from the Cancer Science Institute of Singapore (CSI Singapore) at the National University of Singapore, led by Associate Professor Takaomi Sanda and Dr Lim Fang Qi, has breathed new life into an existing drug — combatting a type of blood cancer called T-cell acute lymphoblastic leukaemia, or T-ALL.

The drug, called PIK-75, was initially discovered over a decade ago but was dismissed in favour of newer ones. Now, it has made a comeback that deems it unmissable. The researchers have established that the drug could block not just one but two crucial cancer-causing pathways of T-ALL, enabling them to develop new treatments that could effectively stem the disease.

Predominantly afflicting children, T-ALL is aggressive and progresses rapidly, affecting stem cells in the bone marrow that produce T-cells, which help maintain an individual’s ability to fight off infection. The condition results in the formation of immature, or ill-developed, T-cells that accumulate and overwhelm their normal counterparts, thereby compromising the patient’s immunity. Many patients who have previously recovered from paediatric T-ALL suffer from relapse, and in some cases even fail to respond to first-line therapy.

As the dual-inhibition mechanism of the novel drug is highly feasible in a clinical setting, the researchers are now looking to develop a soluble analogue of the drug, which is currently in an insoluble form, so that it can eventually be administered to patients.

“We are delving deeper into the pathogenesis of cancers to uncover more life-saving insights. We also plan to unearth more novel drugs that can efficiently inhibit the primary oncogenic mechanisms of T-ALL”, said the researchers.