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Japan finds molecular code that powers up cancer-fighting immune cells

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To make cancer immunotherapy more efficient



A synthetic molecular code shows promise towards improving the response of some cancer patients to immunotherapy treatments. The approach involves using a molecule that can provide energy to anti-cancer immune cells, increasing their numbers and improving their longevity. The findings were published by Kyoto University scientists in Japan.

Cancer cells express molecules that can target a receptor to inactivate tumor-fighting T cells. “Therapeutics that block the immunosuppressive molecule, called PD-L1, from binding to the T cell surface receptor, called PD-1, have revolutionized cancer treatment. However, more than half of cancer patients don’t respond well to this immunotherapy,” explains Madhu Malinee, the study’s first author.

“One of the major reasons for this unresponsiveness is that these patients have an insufficient number of T cells that also become exhausted because they don’t have enough active energy-providing mitochondria,” adds Ganesh Namasivayam Pandian of Kyoto University’s Institute of Integrated Cell Material Sciences (iCeMS).

The team plans to further improve their findings before the approach can be tested for clinical use.