

Brazilian berry recognized for effects against obesity and diabetes can also help to treat cancers

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Quebec scientists have discovered that the Brazilian camu-camu berry, already recognized for its protective effects against obesity and diabetes,

can also help to treat cancers.

In a study in *Cancer Discovery*, the team of Bertrand Routy, an Université de Montréal's medical professor, shows one compound from the fruit can have a positive role to play in immunotherapy.

"With this research, conducted with our colleagues from Université Laval and McGill University, we have proved that castalagin, a polyphenol acting as a prebiotic, modifies the [gut microbiome](#) and improves immunotherapy response, even for cancers resistant to this type of treatment," said Routy.

"Our results pave the way for [clinical trials](#) that will use castalagin as a complement to medications called immune checkpoint inhibitors in [cancer patients](#)," added Meriem Messaoudene, a postdoctoral student in Routy's lab and first author of the study.

In recent years, [immune checkpoint inhibitors](#) (ICI) have given patients renewed hope that their immune systems can overcome [cancer](#) resistance by revolutionizing therapies targeting melanoma and lung cancer. This type of immunotherapy activates the immune system to kill cancer cells.

A hunt for new approaches

Despite these improvements, only a minority of patients have long-lasting responses to immunotherapy akin to a cure, so researchers like Routy have been on the hunt for new therapeutic approaches. Their ultimate goal is to turn an unhealthy microbiome into a healthy one in order to strengthen the [immune system](#).

Among the strategies Routy has come up with is one that employs prebiotics, chemical compounds that can improve the composition of the gut microbiome.

"To evaluate the beneficial effects of castalagin, we orally administered the prebiotic to mice that had received a fecal transplant from patients resistant to ICI," he said. "We found that castalagin binds to a beneficial intestinal bacteria, *Ruminococcus bromii*, and promotes an anti-cancer response."

The discovery will soon be tested in patients thanks to the launch of the first clinical trial combining the camu-camu berry and ICIs. Recruitment of 45 patients with lung cancer or melanoma will begin this month at the CHUM and the Jewish General Hospital.

"A natural polyphenol exerts antitumor activity and circumvents anti-PD-1 resistance through effects on the gut microbiota," by Meriem Messaoudene et al., was published Jan. 14, 2022, in *Cancer Discovery*.

More information: Meriem Messaoudene et al, A natural polyphenol exerts antitumor activity and circumvents anti-PD-1 resistance through effects on the gut microbiota, *Cancer Discovery* (2022). [DOI: 10.1158/2159-8290.CD-21-0808](https://doi.org/10.1158/2159-8290.CD-21-0808)

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