

# Indian plant could play key role in death of cancer cells

February 14 2013

---

Scientists at the Georgia Regents University Cancer Center have identified an Indian plant, used for centuries to treat inflammation, fever and malaria, that could help kill cancer cells.

Cancer cells typically avoid death by hijacking [molecular chaperones](#) that guide and protect the proteins that ensure normal cellular function and then tricking them into helping mutated versions of those proteins stay alive, says Dr. Ahmed Chadli, a researcher in the Molecular Chaperone Program at the GRU Cancer Center and senior author of the study named the [Journal of Biological Chemistry's](#) Paper of the Week.

Drug development has focused on the chaperone Hsp90 (heat shock protein 90) because it plays a key role in assisting mutated proteins, making it an attractive cancer [drug target](#). However, the clinical efficacy of Hsp90 inhibitors has been disappointing. Most current small molecules targeting Hsp90 have inadvertently resulted in the expression of proteins that protect cancer cells from [programmed cell death](#) and compromise the Hsp90 inhibitors in the clinic.

In this study, however, Chaitanya Patwardhan, a graduate student in Dr. Chadli's lab, found that gedunin, an Indian plant compound, attacks a co-chaperone, or helper protein, of Hsp90 called p23.

"This compound binds directly to p23, leading to inactivation of the Hsp90 machine—without production of anti-apoptotic proteins—thus killing [cancer cells](#)," said Dr. Chadli. "The idea here is that this will open

a door for new ways of targeting Hsp90 by targeting its helper proteins, which may be used in combination with established Hsp90 inhibitors that are ongoing clinical trials. In the future, this research could have applications in drug development for hormone-dependent cancers, including breast, prostate and endometrial cancers."

"One of the major areas of scientific emphasis of the GRU Cancer Center is to develop therapeutic approaches to cancer targeting specific molecules within the cancer cell, including chaperones," said Dr. Samir N. Khleif, Director of the GRU Cancer Center. "This finding is an important piece of the puzzle, bringing us closer to our goal of helping patients with cancer."

Provided by Georgia Health Sciences University

Citation: Indian plant could play key role in death of cancer cells (2013, February 14) retrieved 27 April 2024 from <https://medicalxpress.com/news/2013-02-indian-key-role-death-cancer.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--