

New chemotherapy and delivery small molecule is effective against multiple cancer tumor types

September 1 2016, by Jerome Hamilton

Open Therapeutics announces licensing a new class of anticancer drugs from Nationwide Children's Hospital. The drug, amphiphilic amines (RCn), shows promise against mouse models of cancer, including pediatric and adult sarcomas, lymphoma, and neuroblastoma. A derivative of RCn, RC16, is approximately ten times more effective against the tumor cells than healthy cells.

As shown with in vivo studies, RCn enhances the effectiveness of approved anticancer chemotherapy drugs etoposide, doxorubicin, and paclitaxel by acting as a nanocarrier. This new technology may provide an ability to specifically target cancer cells by delivering current chemotherapy drugs directly into the cancer cells.

Isabella Orienti, PhD, Professor, Pharmacy and Biotechnology, University of Bologna, Italy, the RCn primary investigator and developer said, "An important aspect of RCn is its ability to accumulate into the mitochondria of [cancer](#) cells, thereby disrupting their metabolism and inducing apoptosis that is a form of cell suicide. In addition, RCn may function as a micellar nanocarrier for traditional antitumor drugs, allowing the combination of a mitochondria directed therapy with the conventional antitumor therapy."

Timothy P. Cripe, MD, PhD, RCn co-investigator and developer, is Principle Investigator at Nationwide Children's Hospital's Center for

Childhood Cancer and Blood Diseases and serves as professor in Pediatrics in the College of Medicine at The Ohio State University. He remarks that "RCn represents a novel type of therapy that destroys the energy centers of the [cancer cells](#)."

"We are excited about this small molecule drug opportunity. Making it freely available to the global research community can fundamentally change the way therapeutics are developed and delivered to the world's population of patients," added Jason E. Barkeloo, Chairman, Open Therapeutics.

Later in 2016, Open Therapeutics intends to launch its freely available crowdsourcing web platform.

According to Open Therapeutics CEO, Jerome Hamilton, "Our collaboration with the team at Nationwide Children's Hospital is a first great example of how open licensing can quickly broaden the availability of new therapies. As our platform grows and these new cooperative philosophies gain traction, we look forward to supporting further development of such treatments."

Provided by Nationwide Children's Hospital

Citation: New chemotherapy and delivery small molecule is effective against multiple cancer tumor types (2016, September 1) retrieved 26 April 2024 from <https://medicalxpress.com/news/2016-09-chemotherapy-delivery-small-molecule-effective.html>

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.