

Study finds biomarker targets to make drugs more effective in fighting cancer

December 27 2017



Credit: CC0 Public Domain

A new study published in *Nature Communications* and led by University of Kentucky Markey Cancer Center researcher Qing-Bai She identifies biomarker targets that may make existing drugs more effective in fighting certain cancers.

The mTOR protein is a central regulator of cell growth and division. Abnormal activation of mTOR protein results in limitless cell division in many human cancers. Though mTOR-targeted drugs exist, their effectiveness has so far been limited, possibly due to the loss of the mTOR downstream effector 4E-BP1, a key repressor of [protein production](#).

The study identifies Snail, a nuclear transcription regulator known to promote [cancer](#) progression, as a strong repressor of 4E-BP1 expression. She's team found an inverse correlation between Snail and 4E-BP1 levels in colorectal cancer, the second leading cause of cancer-related mortality in the United States. This study shows promise that the Snail level may serve as a predictive marker to tailor personalized treatments using mTOR-targeted drugs. Physicians may be able to prescribe treatment for cancers that have high Snail/low 4E-BP1 activities, using [cancer drugs](#) that are already in clinical development.

"This finding has significant clinical ramification, because incorporating the analysis of Snail and 4E-BP1 expression in cancers may help to prospectively identify resistance to mTOR-targeted drugs in the clinic," said She, associate professor in the UK Department of Pharmacology & Nutritional Sciences.

More information: Jun Wang et al. Snail determines the therapeutic response to mTOR kinase inhibitors by transcriptional repression of 4E-BP1, *Nature Communications* (2017). [DOI: 10.1038/s41467-017-02243-3](#)

Provided by University of Kentucky

Citation: Study finds biomarker targets to make drugs more effective in fighting cancer (2017,

December 27) retrieved 3 May 2024 from <https://medicalxpress.com/news/2017-12-biomarker-drugs-effective-cancer.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.