

Study examines drug resistance in ALK positive lung cancer

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Scientists from the University of Colorado Cancer Center have once again advanced the treatment of a specific kind of lung cancer. The team has documented how anaplastic lymphoma kinase (ALK) positive advanced non-small cell lung cancer (NSCLC) becomes resistant to a drug targeting the abnormal protein in the cancer. It's the first time scientists have analyzed the frequency and type of drug resistance in ALK positive patients taking crizotinib.

Crizotinib, a tablet, shrinks tumors in the majority of ALK positive patients with dramatic responses in more than 60 percent of cases. The responses last approximately 48 weeks because the cancer eventually becomes resistant.

A study published in [Clinical Cancer Research](#), a journal of the American Association for Cancer Research (AACR), reveals ALK positive lung cancer mutates in two main ways. The cancer changes the ALK protein so that the crizotinib is ineffective against it or it develops another type of cancer molecule that makes the cancer less dependent on ALK. If the ALK [protein changes](#), it may be vulnerable to a stronger ALK inhibitor. If it combines with another type of cancer molecule, a combination of drugs may be effective.

"We know that crizotinib brings ALK positive lung cancer under control for most patients. We wanted to learn how the cancer mutates so we can better treat it once it returns," said Robert Doebele, MD, PhD, lead author of the study and CU Cancer Center investigator. "The mutations

we documented show us once again that we can't treat cancer as one disease. Cancer is as individual as our patients."

The study was done at the CU Cancer Center and the University of Colorado School of Medicine.

"We are leading the way in the molecular testing of [lung cancer](#). The testing helps us tailor individual treatments to specific sub-types of the disease" said Cancer Center investigator D. Ross Camidge, MD, PhD, director of the thoracic oncology clinical program at University of Colorado Hospital (UCH). "As the cancer changes, we have to change the way we attack it."

Provided by University of Colorado Denver

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