

New target protein for colon cancer identified

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Researchers at Boston University School of Medicine (BUSM) have identified a new potential target protein (c-Cbl) they believe can help further the understanding of colon cancer and ultimately survival of patients with the disease.

They found colon [cancer](#) patients with high levels of c-Cbl lived longer than those with low c-Cbl. Even though scientists have studied this protein in other cancers, it has not been explored in colon cancer until now.

The researchers examined the level of c-Cbl in tumors that were removed from people with colon cancer. Based on the level of this protein, c-Cbl, patients were split into two groups, high c-Cbl and low c-Cbl.

The researchers then wanted to find out what happens to cells when this protein was turned off. They did this by using two types of colon cancer cells split into three groups each. One group consisted of un-manipulated [colon cancer cells](#), one group had increased expression of normal c-Cbl and the other group had increased expression of the "off" [version](#) of c-Cbl. This off version of c-Cbl lacked an essential function of c-Cbl called ubiquitin ligase activity. Cells that were given the "off" version of c-Cbl grew more tumors than those that were given the "on" version.

For tumors to grow and metastasize they need [blood vessels](#). The next step was to look at how c-Cbl affected [blood vessel growth](#) by using three experimental models, (one group was normal, one group was given

the c-Cbl protein and the third group was given the "off" version of the protein). The model that was given the "off" version of c-Cbl grew more blood vessels. "This helps us to understand the role of the ubiquitin ligase activity of c-Cbl in preventing tumors from growing and reducing tumor's ability to grow blood vessels," explained corresponding author Vipul Chitalia, MD, Ph.D., associate professor of medicine at BUSM.

According to the researchers, this study suggests that c-Cbl might improve the survival of patients with colon cancer. "This information will help cancer [researchers](#) understand colon cancer better and possibly design new treatments to better cure [colon cancer](#) and help patients live longer."

These findings appear in the *American Journal of Pathology*.

Provided by Boston University School of Medicine

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