

Beat: Health

Scientists Discover a Tiny Stomach Hidden Inside Lung Tumors

Cancer Is Changing

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USPA NEWS - Lung cancer is the leading cause of cancer deaths worldwide, and has one of the lowest survival rates among all cancers.

Researchers recently spotted a miniature stomach, duodenum, and small intestine hidden among the cells of lung tumor samples.

The team discovered that these cells had lost a gene called NKX2-1 that acts as a master switch, flipping a network of genes to set the course for a lung cell.

"Cancer cells will do whatever it takes to survive," says Purushothama Rao Tata, lead study author and assistant professor of cell biology at Duke University School of Medicine and a member of the Duke Cancer Institute.

Researchers analyzed data from the Cancer Genome Atlas Research Network, a large consortium that has profiled the genomes of thousands of samples from 33 different types of cancer.

They found that a large proportion of non-small cell lung cancer tumors lacked NKX2-1, a gene known to specify the lung lineage.

Instead, many of them expressed a number of genes associated with esophagus and gastrointestinal organs.

In the absence of NKX2-1, Tata hypothesized, lung tumor cells would lose their lung identity and take on the characteristics of other cells.

Under the microscope, they noticed features that normally only appear in the gut, such as crypt-like structures and gastric tissues. Amazingly, these structures produced digestive enzymes, as if they resided in the stomach and not the lung.

Because during development lung cells and gut cells are derived from the same parent, or progenitor, cells, it made sense that once the lung cells lost their way they would follow the path of their nearest developmental sibling.

"Now that we know what we are dealing with in these tumors "" we can think ahead to the possible paths these cells might take and design therapies to block them."

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