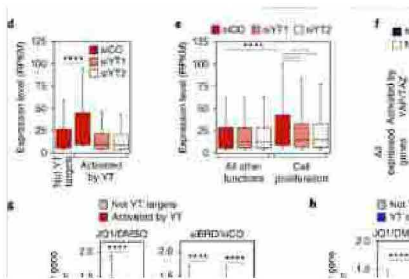




Health: UniPadova and IFOM identified a protein that “dopes” cancer cells



What differentiates cancer cells from healthy cells? In an attempt to answer this question, an all-Italian research group has identified **BRD4**: a protein responsible for the **hyperactivity of cancer cells**.

The study, the results of which were recently published in the prestigious journal *Nature Medicine*, received support from **AIRC**, the Italian Association for Cancer Research.

The study was conducted by the research group led by **Stefano Piccolo**, Professor at the Department of Molecular Medicine of the **University of Padua** and director of the tissue biology and tumorigenesis programme at **IFOM**, the **FIRC** Institute of Molecular Oncology in Milan.

While investigating the conditions that allow cancer cells to grow, “violating” the boundaries of adjacent cells, Stefano Piccolo’s research group had already focused on the study of YAP and TAZ. These two closely related genes, highly active in **different types of cancer**, seem to act as real “doping” factors for cancer cells.

The deactivation of these genes would make it possible to **preserve healthy tissue** while making it resistant to the development of cancer. To date, however, it is not possible to produce drugs capable of targeting YAP and TAZ, deactivating them.

“To get around this problem, we understood that we had to study the intrinsic functioning mechanisms of YAP and TAZ, entering the nucleus, where YAP and TAZ control part of the genetic information. We had to photograph, so to speak, the entire genome of cancer cells to find out

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where YAP and TAZ operate, activating the synthesis of a number of proteins that can make a healthy cell turn into a cancer cell”, explained **Michelangelo Cordenonsi**, co-author of the study.

The researchers found that **YAP** and **TAZ** are associated with another protein, **BRD4**, essential to these doping effects, and developed **experimental drugs** that have proven effective in treating cancer, in particular some forms that are resistant to traditional drugs.

“Unfortunately, drugs against BRD4 are still being tested in humans and their possible toxic effects are not yet fully known”, explained **Piccolo**.

Meanwhile, however, the new findings outline a perspective that, along with other treatments, promises important developments in terms of new therapeutic strategies.

Source **IFOM**

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