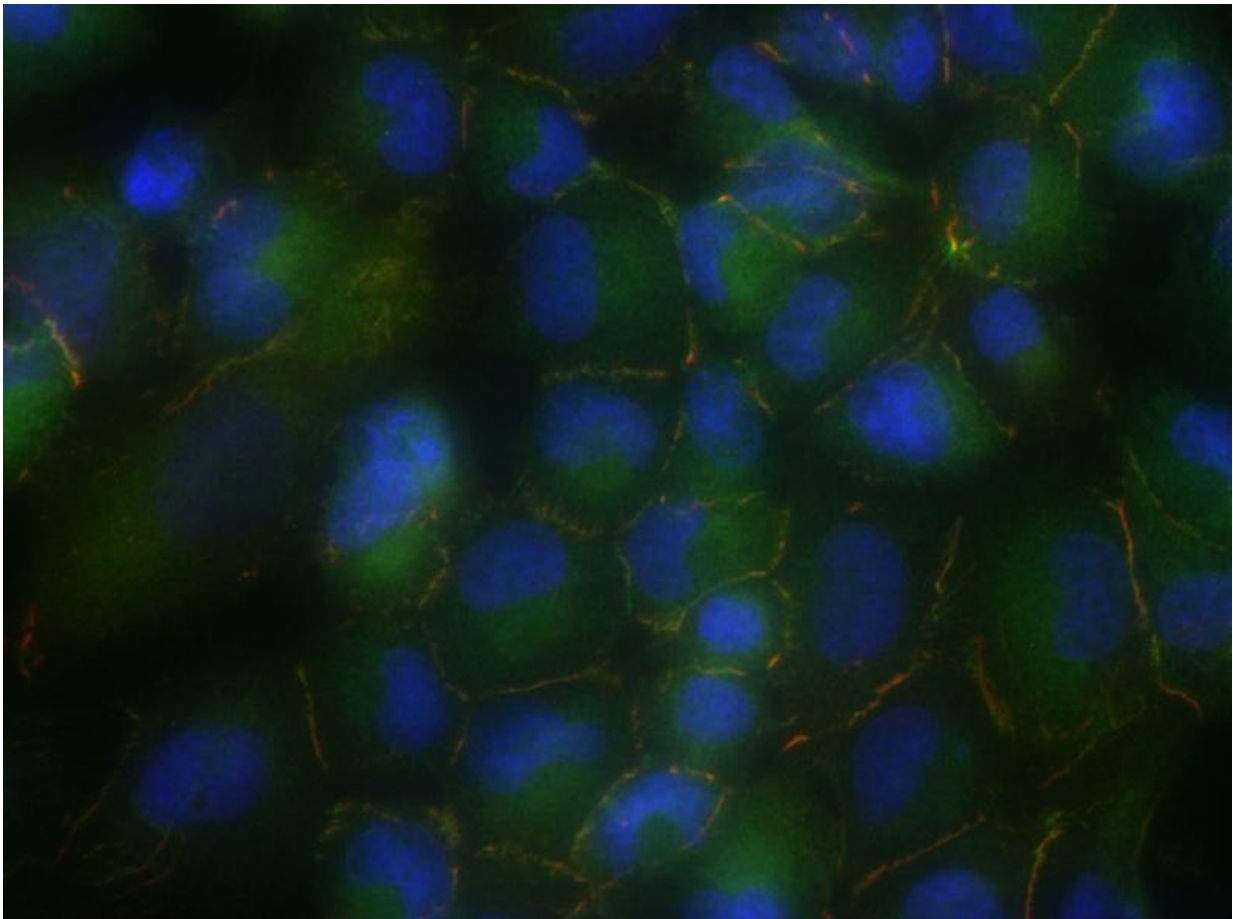


# Researchers discover an inactive tumor suppressor gene in lung cancer

April 14 2015

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Correct tight junctions between cells labeled in yellow due to the presence of the protein PARD3

Researchers at Genes and Cancer group at Bellvitge Biomedical

Research Institute (IDIBELL), led by Montse Sanchez-Cespedes, have identified the PARD3 gene as a tumor suppressor that is inactivated in lung cancer squamous type. The results of the study have been published in *Cancer Research*.

Correct polarization (orientation in space) of bronchial epithelial cells is essential for the maintenance and proper development of this tissue under normal conditions.

PARD3 gene encodes a protein that regulates cell polarization and cell junctions. When the gene is inactivated, errors occur in this cell orientation and in contact with neighboring cells. "Any change affecting this structure promotes [tumor development](#)," said the researcher Montse Sanchez-Cespedes.

## **Tumor invasion and metastasis**

By restoring protein encoded by PARD3 levels, both, cell lines and animal models of mice, we observed that regulating de novo polarization of cells, significantly reduced the risk of metastasis.

## **Lung cancer**

Lung cancer is one of the tumors having higher mortality rates worldwide. Only in Spain each year about 20,000 people die from this cause. The high mortality rate is mainly due to late diagnosis of the disease, when it is already in an advanced stage.

Late detection and lack of effective therapies make the probability of survival of patients with lung cancer is very low. Overall, only 10% and 15% of patients survive more than five years after detection. The origin of more than 80% of cases is the consumption of snuff. The squamous [lung cancer](#) and lung adenocarcinoma type are the two most common

types of lung tumor.

**More information:** Ecological properties of nature reserve areas can now be analyzed by laser scanning from a plane Bonastre E, Verdura S, Zondervan I, Facchinetti F, Lantuejoul S, Chiara MD, Rodrigo JP, Carretero J, Condom E, Vidal A, Sidransky D8, Villanueva A, Roz L, Brambilla E, Savola S, Sanchez-Cespedes M. PARD3 Inactivation in Lung Squamous Cell Carcinomas Impairs STAT3 and Promotes Malignant Invasion. *Cancer Res.* 2015 Apr 1;75(7):1287-97. [DOI: 10.1158/0008-5472.CAN-14-2444](https://doi.org/10.1158/0008-5472.CAN-14-2444).

Provided by IDIBELL-Bellvitge Biomedical Research Institute

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