# PAK4 in Cancer Immune Exclusion

Tech ID: 29940 / UC Case 2018-209-0

## SUMMARY

Researchers at the UCLA David Geffen School of Medicine have proposed that T cell tumor infiltration and the anti-tumor activity of anti-PD-1/PD-L1-based immunotherapy to be modulated through kinase PAK4 activity.

## BACKGROUND

The p21-activated kinase 4 (PAK4) is a member of the PAK family of serine/threonine kinases, which are important effectors of Rho family GTPases and are involved in the regulation of cell morphology and motility via modulation of the actin cytoskeleton. Growing evidences have also implicated PAK4 in oncogenic pathways including anchorage-independent growth, and protection of cells against apoptotic cell death. Although PAK4 is expressed at low levels in most adult tissues, it is highly overexpressed in tumor cell lines and in primary tumors, making it an attractive candidate for developing treatment for different types of cancer.

## INNOVATION

Researchers at UCLA have discovered the connection between the kinase activity of PAK4 and T cell infiltration in tumors, and proposed novel approaches to facilitate T cell infiltration of tumors and to increase the anti-tumor activity of immunotherapy by modulating the PAK4 activity.

## APPLICATIONS

Cancer immunotherapy

## ADVANTAGES

- Increase T cell infiltration
- Improve clinical response to anti-PD-1/PD-L1 immunotherapy
- Boost anti-cancer immune response

## RELATED MATERIALS

- Abril-Rodriguez, G., Grasso, C.S., Zaretsky, J.M., Berent-Maoz, B., Hu-Lieskovan, S. and Ribas, A., 2018. Role of PAK4 in cancer immune cell exclusion.

## PATENT STATUS

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| United States Of America | Published Application | 20210161943 | 06/03/2021 | 2018-209 |
| European Patent Office | Published Application | 3781168 | 02/24/2021 | 2018-209 |

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Genetic Mechanisms Of Resistance To Anti-Pd-1/L1
- A Codon-Optimized Lentiviral Vector For Stem Cell Reprogramming

## CONTACT

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## INVENTORS

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## OTHER INFORMATION

### KEYWORDS

Cancer, immunotherapy, therapeutics, checkpoint inhibitor, PD-1, PD-L1, T cell, PAK4

### CATEGORIZED AS

- **Medical**
  - Disease: Cancer
  - Therapeutics

### RELATED CASES

2018-209-0

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