Predicting immune checkpoint therapy for breast cancer patients using LRRK2 mutations

Duke LICENSING & VENTURES

Unmet Need

The treatment of various cancers has been revolutionized by the development of effective immunotherapies that are now established as powerful clinical tools. Unfortunately, it is also now well documented that only a minority of patients respond to any particular immune checkpoint blockade (ICB) agent. ICB therapy for cancer only works for a subset of patients and tumor types. Additionally, breast cancer remains one of the leading cause of cancer deaths. There is an unmet need to improve response rates for patients treated with ICB therapies and provide clinicians an ability to predict patient responses.

Technology

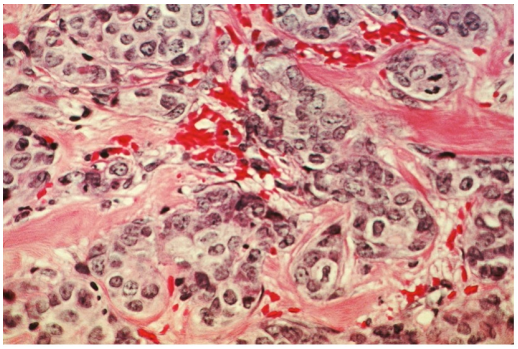
Duke inventors have reported a method to determine whether a breast cancer patient will respond to immune checkpoint therapy. Specifically, they have uncovered a previously unrecognized role of LRRK2 in breast cancer. It was found that tumors harboring a somatic LRRK2 mutation may constitute a distinct clinicopathologic entity with increased tumor mutation burden and high-risk clinical behavior. Reduced patient survival was observed in breast cancer patients with LRRK2 mutations using The Cancer Genome Atlas Breast Cancer Project.

Advantages

- Assessing for LRRK2 may identify a subset of genomically unstable breast tumors with vulnerability to immune checkpoint inhibition
- Offers an opportunity for risk stratification and treatment plans for breast cancer

Publications

- Somatic Mutations in LRRK2 Identify a Subset of Invasive Mammary Carcinomas Associated with High Mutation Burden (Am J Pathol, 2020)



Duke File (IDF)

T-006704

Inventor(s)

- Sanders, Laurie
- Parrilla Castellar, Edgardo "Edgardo"

Links

- From the lab of Dr. Laurie Sanders

College

School of Medicine (SOM)

For more information please contact

Ferguson, Christy
919-681-7581
christy.ferguson@duke.edu