Researchers identify targets for immunotherapy in early-stage breast cancer

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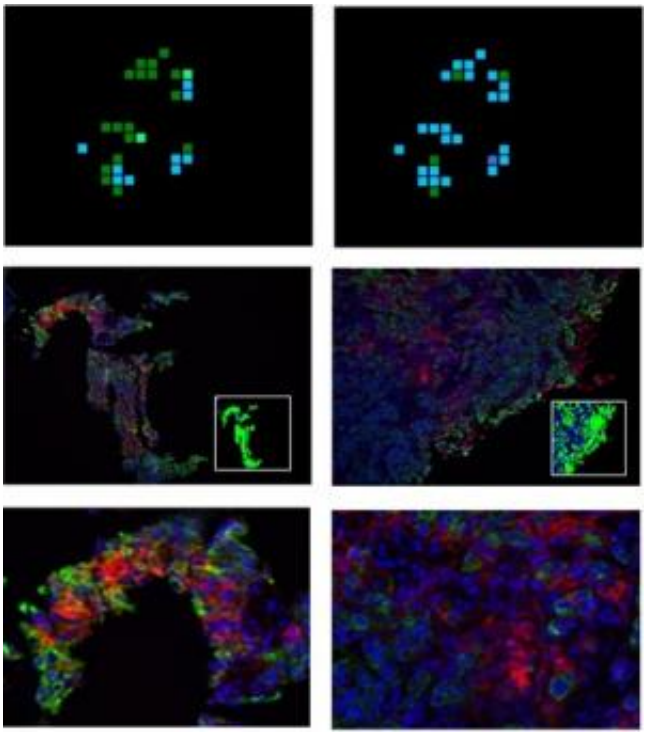

Credit: Yale University

Yale Cancer Center researchers used a new molecular analysis tool to accurately detect the level of an important target for immunotherapy in early-stage breast cancers. The diagnostic test, using RNAScope, measures the amount of PD-L1 (programmed death ligand 1) mRNA in routine formalin-fixed cancer tissues and is devoid of many of the technical issues that plague antibody-based detection methods that have

yielded conflicting results in the past. PD-L1 is the target of several novel immune stimulatory therapies in clinical trials. The findings were published in the *Journal of Clinical Cancer Research* in May.

PD-L1 is a protein that plays an important role in suppressing immune response, and in cancer, it may allow tumors to evade immune attack. The study demonstrated that about 60 percent of early-stage breast cancers have PD-L1 expression, and a subset of these cancers also have large numbers of tumor infiltrating lymphocytes. High levels of lymphocytes and PD-L1 predicted for better survival, suggesting a beneficial role for the immune system in at least partially controlling these cancers.

"This is exciting because these findings provide the rationale to test PD-L1 targeted therapies in breast cancer with the hope of further improving cure rates in early stage breast cancer," said Lajos Pusztai, MD, DPhil, professor of Medical Oncology and chief of Breast Medical Oncology at Smilow Cancer Hospital, Yale Cancer Center, and an author on the study. "Patients with many tumor infiltrating lymphocytes and high PD-L1 expression may be the ideal candidates for these therapies."

The in situ mRNA detection method used in the study, eliminates many of the technical problems that older immunohistochemistry assays had, Pusztai added.

Provided by Yale University