Immuno-oncology

Exploring current trends in immuno-oncology biomarker research and where they correlate within the cancer immunity cycle.

**CAR T cell therapy**

CAR T cell therapy harnesses the natural cancer-fighting ability of the body’s T cells to destroy the cancer, but also has the potential to cause immune-related adverse events (irAEs). Techniques such as targeted NGS and Sanger sequencing can be effectively used to study T cell repertoire diversity, which is central to biomarker discovery for CAR T cell therapy. CAR T cell engineering can facilitate the understanding of how to use the immune system to fight tumors.

**Immunity checkpoint inhibition**

Immunity checkpoint inhibitors (ICIs) are monoclonal antibodies (mAbs) that target immune checkpoints. They work by blocking endogenous inhibitory pathways, effectively releasing the brakes applied to the immune system and unleashing an antitumor immune response, without directly targeting tumor cells or activating the immune system. ICIs are critical in modern immunotherapies and have been associated with improved disease-free survival and overall survival. RT-qPCR are extremely important in IO research for biomarker discovery and verification. Various genetic analysis solutions available from Thermo Fisher Scientific can help advance biomarker research for future immunotherapies.

**Cancer vaccines**

Cancer vaccines work by stimulating the anogenital immune system to recognize and destroy cancer cells. CAR T cell engineering can help advance biomarker research for future immunotherapies. Techniques such as targeted NGS and Sanger sequencing can be effectively used to study T cell repertoire diversity, which is central to biomarker discovery for CAR T cell therapy.

Thermo Fisher Scientific is helping facilitate the research of new immune-oncology biomarkers across three key IO areas:

1. Immunity checkpoint inhibition research solutions
2. CAR T cell engineering products
3. Cancer vaccines

**Learn more**

Learn more about CAR T therapy products.

Learn more about ICII products.

Learn more about CI products.