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Mass spec technology by Shimadzu unveils novel approach for immunotherapy success

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Contributed to a biomarker discovery for antibody therapeutics in cancer immunotherapy

Japan's Shimadzu Corporation collaborated with Drs William Redmond and Yoshinobu Koguchi of the Providence Cancer Institute (Portland, Oregon, US) to find a biomarker for the clinical outcome of cancer patients treated with anti-CTLA-4 antibody ipilimumab (YERVOY®).

Shimadzu analyzed the blood concentration of the immune checkpoint inhibitor ipilimumab using mass spectrometry and nSMOL Antibody BA Kit. Ipilimumab is a therapeutic antibody that blocks an inhibitory immune checkpoint molecule called CTLA-4.

While it has shown high therapeutic efficacy, CTLA-4 blockade often causes severe immune-related adverse events (irAEs). Therefore, stratifying patients based on information regarding who will likely respond to ipilimumab has been a major clinical challenge.

In this study, it was found that the serum trough levels of ipilimumab were significantly associated with clinical responses for the treatment of advanced melanoma with ipilimumab. In combination with other inflammatory cytokines, serum levels of ipilimumab may serve as a biomarker associated with the clinical outcome of patients with advanced melanoma treated with ipilimumab.

“We are excited about this novel approach that may help inform which patients will benefit from ipilimumab immunotherapy” said Dr. Redmond, Member and Director, Immune Monitoring Laboratory, at the Earle A. Chiles Research Institute, a division of Providence.