WHOLE-SLIDE MULTISPECTRAL IMAGING REVEALS THE IMMUNE SUBTYPES OF MELANOMA ASSOCIATED WITH THE TUMOR MICROENVIRONMENT: AN AUTOMATED 7-COLOR MIF ASSAY

Navi Mehra*, Bhavika Patel, Stephanie Allen, Noah Ramirez, Najiba Mammadova, Agnes Haggerty. 1Lanterne Dx, Boulder, CO, USA; 2Akoya Biosciences, Menlo Park, CA, USA

Background Immunotherapy and precision medicine are rapidly developing approaches to cancer therapy. Biomarkers that detect the tumor and tumor microenvironment allow for the development of strategies that accelerate the advancement of treatments to enhance a patient’s immune system. Akoya’s MOTiF™ PD-1/PD-L1 Auto Melanoma Kit is a validated, multiplex immunoassay enabling detection of the 6 most clinically relevant immuno-oncology and spatial biomarkers: FoxP3, PD-L1, Sox10/S100, PD-1, CD8 and CD68.

Methods In this study, the MOTiF™ PD-1/PD-L1 panel was used to analyze the tumor microenvironment and specifically assess immune phenotypes within melanoma samples from 3 patients. This study demonstrates a fully optimized and end-to-end workflow solution for biomarker discovery in melanoma.

Results We demonstrate the utility of Akoya’s MOTiF™ PD-1/PD-L1 Melanoma panel kit in studying the cellular diversity while retaining spatial context. Stained slides were analyzed using the InForm® and Phenoptr Reports image analysis platforms to identify phenotypes and better understand spatial relationships between cell phenotypes. The MOTiF™ PD-1/PD-L1 panel kit provides reproducibility across different patient samples.

Conclusions This data provides insight into the innate and adaptive immune landscape for targeted design of new immunotherapies as well as improved efficacy and reduced toxicity in the treatment of melanoma.