

# Proteomic Assessments for Skin Malignancy Biomarkers – New Insights †

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**Abstract:** The immune setting holds a key role in tumorigenesis, from which potential biomarkers for therapy response prediction or disease monitoring are continuously discovered. Omics methodologies represent a mandatory robust tool heading for data consistency, accuracy, and reproducibility and providing vigorous biomarkers for disease management. As an omic platform, protein microarray plunges in a specific and important niche for biomarkers discovery, both for research and diagnostic purposes. In skin cancer, specifically in cutaneous melanoma, high tumor heterogeneity and complex immune interactions claim a combined analysis to decode the cellular phenotype. As proteins are those "pointers" that delineate the cellular phenotype, proteomic approaches would accurately measure the magnitude of biological effects caused by different genomic alterations. Serum from patients diagnosed with cutaneous melanoma and squamous cell carcinoma was assessed for simultaneous detection of 42 analytes (*RayBio® G-Series Human Cytokine Antibody Array*). Amid these biomolecules, some factors (e.g., MIF, IL-6, IL-10, etc.) present an altered level potential correlated with the inflammatory milieu in malignancy. Some alternate markers in the tumor framework, such as leptin, could correlate immune and metabolic axis helping in tumor therapy assessment and/or disease monitoring. Leptin is a hormone increased in obesity that could directly modulate T cells functionality; this connection could further impact the PD-1 immune axis blockade response; therefore, proteomic approaches detect protein alterations and expand knowledge to new therapeutic targets characterization.

**Keywords:** biomarkers; omics technologies; skin diseases.

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## Conflicts of Interest

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