Deciphering the Molecular Mechanisms of Melanoma Initiation

PIGMENT Why? Melanoma is the deadliest type of skin cancer and is rapidly rising in incidence • 85% of melanomas are caused by UV radiation • The molecular mechanisms by which UV induced melanoma are largely unknown Biomarkers Inflammatory Therapeutics mechanisms in Prevention **UV-induced** melanomagenesis Immunoevasive Interferon-gamma mechanisms of signaling in melanoma melanomagenesis progression UVB UVA Melanoma iDct-GFP **Epigenomics of MicroRNAomics of UV-induced UV-induced** Intrinsic **Extrinsic** melanomagenesis melanomagenesis mechanisms mechanisms Microenvironment **Melanocytes** Molecular analysis of different stages DNA mutations Inflammatory factors of melanoma Epigenetics Immunosuppression • ncRNAs Immunoevasion How?

• We use mouse models of UV-induced melanomagenesis to investigate the genes and pathways that play causative roles in the initiation and progression of melanoma

• High-throughput genomics, epigenomics, and proteomics methodologies are being used to discover novel mechanisms involved in melanomagenesis

Relevant publications

- Mo et al. *Cancer Research* 78:436 (2018)
- Zaidi et al. Nature 469:548 (2011)
- Zaidi et al. Cancer Research 72:1591 (2012)

Recent Funding

- National Cancer Institute/NIH
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