Center for Dermal Research
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I am a tenured professor of Pharmacology, Pathology, Dermatology and Surgery at the Penn State University College of Medicine. My endeavors at Penn State focus on malignant melanoma, the deadliest form of skin cancer. As a part of my efforts on melanoma, I am the founding director of the very successful Melanoma and Skin Cancer Center (MSCC). I am also the Director of the Penn State Melanoma Therapeutic Program. The center is multidisciplinary and includes clinical/research faculty from diverse backgrounds and departments/divisions at Hershey and University Park. The MSCC's core mission has been to foster clinical endeavors useful for patients, novel research interactions, education about the causes and treatments for skin cancers, and community outreach to provide information about what is occurring at Penn State in all of these areas. I have maintained consistent funding for my melanoma focused research program during my tenure at Penn State. I am an expert in the field of melanoma and my expertise ranges from gene discovery and validation to drug discovery and therapeutic development, which have resulted in over 100 publications in these areas.

"The Multifaceted Roles Played by Exosomes in Melanoma Development and their Potential as Therapeutic Agents"

Abstract:

Exosomes (and microvesiscles) are small extracellular membrane-bound vesicles released by cells, which have been found to be important facilitators of intercellular communication. They contain proteins, lipids and nucleic acids that relay information between other cancer cells, the stroma, and normal cells. Because of this communicative role, the levels and types of exosomes secreted by cancer cells can be used for diagnosis and for predicting disease prognosis. Furthermore, the role of exosomes in preparing distant sites for metastasis is being rapidly unraveled, revealing new insight into the metastatic process. Exosomes are increasingly being shown to play multifaceted roles in melanoma development, with functions being identified for modulating the invasive and angiogenic capacity of malignant cells. Exosomes could also be uses as therapeutic modalities, and this area is just now starting to be investigated. Exosome-related processes are being increasingly recognized as playing an important role in the cancer development process and exploiting these areas in the future could generate unique approaches for treating melanoma.