

A Method of Treating Malignant Melanoma Using Atypical Protein Kinase C Inhibitors

Researchers at the University of South Florida have invented a method for the treatment of malignant melanoma through effective inhibition of atypical Protein Kinase C (aPKC) while negligibly affecting non-malignant cells.

Skin cancer is the most common cancer in the United States. The number of cases of melanoma is predicted to double every 10-20 years. Currently, signaling pathways in the progression of melanoma are not completely understood and effective treatments against melanoma cells cause harm to non-malignant cells which leads to additional side effects. There is a need for effective melanoma treatment options which better target malignant cells.

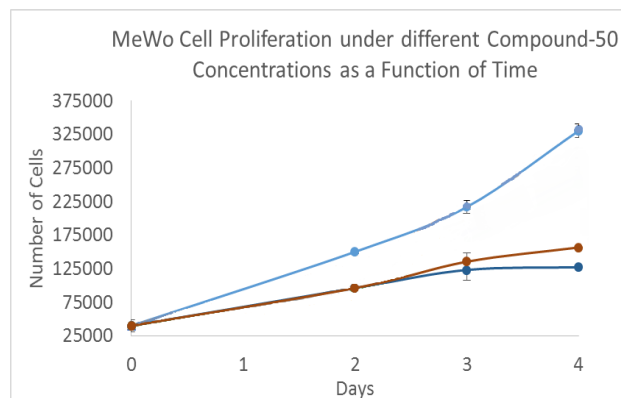
Scientists at USF have discovered a novel method to treat melanoma cells without affecting non-malignant cells. DNDA, ICA-1, ACPD, and Compound-50 successfully inhibit two forms of aPKCs, PKC-iota (PKC- ι) and PKC-zeta (PKC- ζ), that are overexpressed in transformed and metastasized melanocytes. PKC- ι and PKC- ζ are not found in high quantities in non-malignant cells, which are therefore unharmed. Significant decreases in melanoma cell populations were observed with increasing drug concentrations of these inhibitors. Melanoma cell mobility was also limited with the addition of DNDA, ICA-1, ACPD, and Compound-50.

This technology presents a novel and effective treatment method of melanoma through aPKC inhibition while negating effects on non-malignant cells.

ADVANTAGES:

- **Effective PKC- ι and PKC- ζ inhibition**
- **Negligible effect on non-malignant cells**
- **Significantly decreases melanoma cell population and motility**

A Novel Application of DNDA, ICA-1, ACPD, and Compound-50 in the Apoptosis of Malignant Melanoma Cells by Inhibiting aPKCs



Decreased Melanoma Cell Numbers with Compound-50 at 5 uM (Dark Blue) and 10 uM (Red) as Compared to the Untreated Control (Light Blue) over 4 Days

Tech ID #: 16A071