

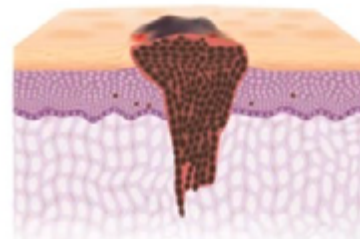


A Small Peptide Increases Drug Delivery in Human Melanoma Cells

Chapman Case #2022-003

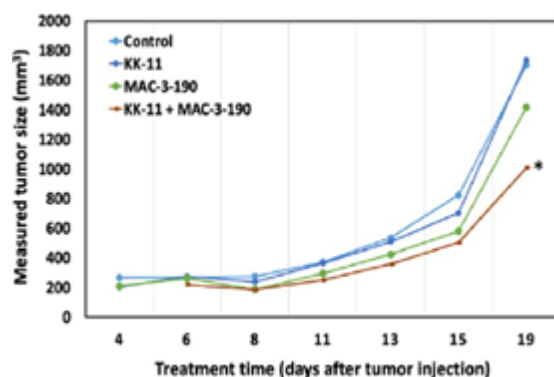
Market Need

Melanoma is a deadly form of skin cancer where the five-year survival rate for patients with metastatic melanoma is only at 31.9 %. Although the survival rates have increased with the help of new targeted therapies and immunotherapies, a significant amount of melanoma patients do not respond to these new therapies. Another very challenging feature of melanoma is its high resistance to traditional chemotherapy. Although the mechanism of drug resistance in melanoma is complex, a practical approach to overcoming drug resistance is to improve drug delivery. Subsequently, there is a need for an effective solution for delivering chemotherapy drugs into melanoma cells.



Chapman Solution

Dr. Sun Yang and Dr. Kamaljit Kaur of Chapman University have invented a new sequence of peptide KK-11 that improves the targeted delivery of chemotherapy drugs (e.g. doxorubicin) for the treatment of melanoma. When combined with targeted therapy utilizing an nNOS inhibitor (MAC-3-190), the proposed invention demonstrated high efficacy to enhance the anti-tumor activity of MAC-3-190. The growth of melanoma xenografts reduced to ~50% of the control group without any significant adverse events observed. The delivery peptide was also proteolytically stable – the peptide remains detectable in human serum after incubation for more than 24 hours.



Applications

- Targeted drug-delivery to melanoma cells
- Potentially efficacious for other cancers

Key Publication

- [A Small Peptide Increases Drug Delivery in Human Melanoma Cells](#). Pharmaceuticals. May 2022.

Intellectual Property

- Patent application filed

Stage of Development

- Targeted drug delivery with high efficacy demonstrated in animal melanoma models
- Available for licensing and further research collaborations