

Companion diagnostic for cutaneous and uveal melanoma

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HIGHLIGHTS

- ✓ **Prognostic biomarker for cutaneous and uveal melanoma**
- ✓ **Combination therapy for metastatic melanoma**
- ✓ **Inhibition of metastasis and survival of cancer Stem Cells**

TECH STATUS

- ✓ **TRL: Experimental Prof of Concept**
- ✓ **IP: Patent on draft**

Problem to be solved

Metastases are the leading cause of death in cutaneous and uveal melanoma patients in whom conventional therapies fail. Specific plasma biomarkers to identify patients at high risk of recurrence and help health care professionals take therapeutic decisions, are urgently needed. New therapeutic options are also necessary.

Background

Malignant melanoma is the most lethal form of skin cancer. If melanoma is diagnosed in its early stages, resection of the lesion is associated with

favorable survival rates. However, melanoma is an aggressive malignancy that tends to metastasize beyond its primary site. Long-term prognosis after metastasis is grim, ranging from 8 to 12 months. BRAF^{V600} mutation is present in 60% of melanoma. For this reason, Vemurafenib (a highly specific BRAF^{V600} kinase inhibitor with selectivity against melanoma cells) is the first therapeutic option for

these patients. Unfortunately, patients treated with Vemurafenib often develop a therapeutic resistance within 6-8 month of treatment initiation, resulting in disease progression.

Uveal melanoma, a rare subset of melanoma, is the most common primary intraocular malignancy in adults. Despite effective primary therapy, nearly 50% of patients will develop metastatic disease. Outcomes for those with metastatic disease remain dismal due to a lack of effective therapies.

Technology

The research group is developing two technologies:

1. A Prognostic Test to Predict the Risk of Metastasis in Uveal and Cutaneous Melanoma
2. A combination drug therapy for both diseases

Applications

The invention could be used as a companion diagnostic to help healthcare professionals

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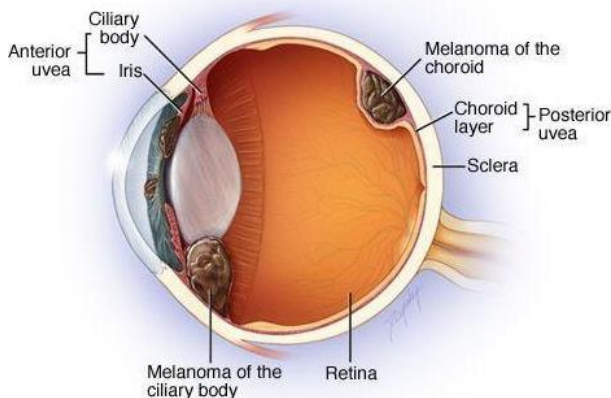
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determine the best therapeutic option for melanoma patients. Doctors could know in advance which patients would probably develop metastasis. As well as, they would have an alternative treatment for those patients that do not have the BRAF^{V600} mutation or for patients resistant to Vemurafenib.



Technology status

1. A group of exosomal miRNAs, which are present in blood and lymphatic torrent of melanoma patients, have been identified as good predictor markers of metastasis. Clinicians of HUB, who have collected blood and plasma samples of patients at different stages of their cancer progression, are now validating these markers.

2. Through an in vitro screening, the research group has selected two proteins as potential inhibitors of tumor progression. These proteins target several signaling pathways related to metastasis and also inhibit the survival of cancer Stem Cells.

Market Opportunity

Melanoma is the deadliest and most aggressive form of skin cancer. The major treatments for melanoma are categorized into immunotherapies and BRAF mutation-targeted therapies.

Melanoma incident cases will likely increase, and it is estimated that melanoma's market will increase by four-fold over the forecast period, reaching \$5.64 billion in 2023 at a CAGR of 15.5%.

Business Opportunity

Co-development or license agreement.

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