An Extracellular Vesicle Based Liquid Biopsy for Treatment Monitoring and Early Detection of Tumor Recurrence in Glioblastoma Patients

Tech ID: 32719 / UC Case 2022-132-0

TECHNOLOGY DESCRIPTION

The technology platform provides methods for the isolation and sequencing of serum-derived extracellular vesicles coupled with machine learning analysis to enable early detection, non-invasive monitoring, and classification of brain tumors.

Currently, brain tumor diagnosis is achieved through radiologic assessment followed by tissue biopsy. Further progression monitoring efforts via MRI is challenging. Additionally, there are no clinically validated circulating biomarkers for management of glioma patients.

In initial studies, the technology has been shown to enable high accuracy (up to 93%) glioma subtype classification. The ability to non-invasively classify prognostically significant brain tumor types is supportive of timely progression monitoring efforts.

ADVANTAGES

- Enhanced personalized medicine - potential for more near “real-time” monitoring of treatment effectiveness in glioma, including glioblastoma.
- Non-invasive molecular method to augment brain tumor detection, classification, monitoring, and recurrence.

APPLICATION

- Initial data generated for brain cancer and pancreatic cyst stratification with potential for broader utility in other diseases
- Potential for early detection of primary tumor
- Potential to complement tissue biopsy for diagnosis, particularly for location-restricted tumors
- Early detection of tumor recurrence after initial resection
- Non-invasive progression monitoring
- Potential to reduce the number of required MRIs following primary treatment
- “Real-time” drug response/treatment effectiveness monitoring
- Support development of new therapeutics - identification of patients and responsive subgroups, determination of drug response (particularly in earlier trials)

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OTHER INFORMATION

CATEGORIZED AS

- Medical
  - Diagnostics
  - Disease: Cancer
  - Therapeutics

RELATED CASES

2022-132-0

- On-market therapies – identification of patients & recurring tumor monitoring

STAGE OF DEVELOPMENT

Early Validation

DATA AVAILABILITY

Under NDA/CDA

PATENT STATUS

Patent Pending

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