Rapid immunoassay to detect anti-EGFRviii levels to evaluate vaccine efficacy

Value Proposition

Tumor-specific molecules offer the possibility of targeted cancer therapy using monoclonal antibodies (mAbs) specifically directed against the tumor-specific molecule. However, it has proven difficult to identify tumor-specific molecules. Overexpression of EGFR in human tumors has been intensively studied, and the EGFR gene has been found amplified and over-expressed in a variety of tumors including malignant human gliomas, such as glioblastoma multiforme (GBM). Class III mutants (EGFRvIII) are the most frequently detected genomic variant. 40-50% of GBM tumors have EGFR gene amplification. There is a pressing need for an assay that is able to detect human anti-EGFRvIII antibodies reliably.

Technology

Duke inventors have reported a novel method to rapidly screen for anti-EGFRvIII antibodies in human blood to detect EGFRvIII-expressing tumors and immune responses following immunization with an EGFRvIII-derived therapeutic. This technology could therefore be effectively used to select peptide vaccines, guide their modification and formulation, and monitor clinical responsiveness and booster immunizations. The invention has been demonstrated with patient blood samples.

Advantages

- Rapid immunoassay to detect an EGFRvIII-expressing tumor using a human blood sample
- A quick and useful indicator of vaccine efficiency against EGFRvIII-expressing tumors
- Captured particles retain activity after elution step, and could therefore be further analyzed by other methods following detection

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External Link(s)

- From the lab of Dr. John Sampson