SaGA:
Platform for Developing Precision Therapeutics & Diagnostics

EXECUTIVE SUMMARY

TEAM
Adam Marcus, PhD
Technical Lead

FUNDING
SaGA Platform
$25K Winship Cancer Institute
$50K Foundation Grant
$1.3M NIH

SaGA Therapeutic & Companion Diagnostic
$30K Academic Grant
$50K Georgia Research Alliance
$64K Biolocity Grant

INTELLECTUAL PROPERTY
Patents pending

Technology available for licensing and partnership

STATUS
Therapeutic -Lead Discovery/Optimization

Diagnostic – Target Identification/Validation

TECHNOLOGY

SaGA Platform

Their proprietary Spatiotemporal Genomic and Cellular Analysis (SaGA) technology, has allowed this team to isolate "leader cells" which are highly invasive and proliferative cells within lung squamous cell carcinoma (LUSC) tumors. Using the novel SaGA platform has allowed for the development of two technologies: (1) a drug compound for the treatment of lung cancer and (2) a diagnostic that identifies individuals with a highly invasive form of LUSC requiring aggressive treatment.

SaGA Derived Therapeutic

The identified drug compounds affect the metabolic state of the leader cells rendering them non-invasive and stops the metastasis of LUSC. A drug of this nature can dramatically potentially reduce the growth rate of this cancer and allow the patient to manage the disease for an extended period of time without the extreme side effects seen with chemotherapy and radiation.

SaGA Companion Diagnostic

Screening for genetic mutations predicated using the SaGA technology, the diagnostic is able to predict which early stage patients will have poor clinical outcomes and consequently need to be treated more aggressively.

MARKET NEED

With a 5-year survival rate of 16%, lung cancer is often aggressively treated. A multimodal treatment approach is often used with lung cancer including radiotherapy and chemotherapy being administered simultaneously. Not only do these treatments come with high costs, they also have severe side effects. While new immunotherapies have less severe side effects, they are expensive and only effective in small subsets of patients.

Considering the current treatment options, selecting the most appropriate treatment for LUSC patients can be challenging. There is a general need throughout the entire clinical cycle of cancer to minimize the possibility of metastasis. A companion diagnostic could help clinicians determine which patients need a more aggressive treatment regimen while a new anti-metastasis drug could help prevent growth and spread of tumors in early stage patients or extend the life of patients in late stage LUSC with palliative treatment.

For more information on this technology contact:
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This technology is being developed out of Emory University.

Therapeutic

Development of their lead drug candidate is underway. To date the team has completed dose-response and a full suite of GLP-compliant DMPK studies with the lead candidate. Currently the team is performing in vivo efficacy studies in multiple models of lung cancer.

Diagnostic

The team proposes developing a genomic panel to run a prospective clinical trial with current patients at Emory's Winship Cancer Institute. To date genomic variants have been identified and retrospective studies run supporting the team's ability to identify patients with the most aggressive forms of early stage LUSC who consequently had significantly lower survival rates than their counterparts without gene mutations.

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