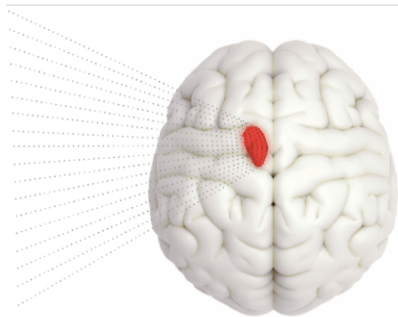
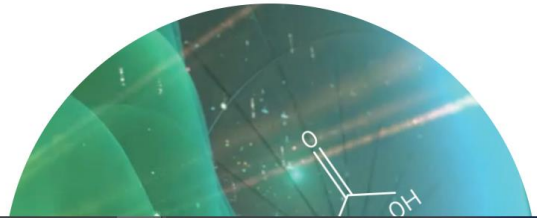




We are committed to providing hope in the face of despair with a unique proprietary non-invasive drug-device combination therapy, ALA Sonodynamic Therapy (SDT), for the treatment of recurrent glioblastoma multiforme (rGBM).



Aminolevulinic acid (ALA) sonodynamic therapy (SDT) is created through the union of two FDA-approved technologies: ALA tumor targeting and focused ultrasound (FUS)

ALA SDT uses an MRI-guided focused ultrasound (MRGFUS) device together with a drug, aminolevulinic acid (ALA), to provide a cancer-specific therapeutic effect. We have compelling data from three independent groups (including SonALASense's founding CEO/CMO, Dr. Stuart Marcus) in three animal brain tumor models demonstrating >70% brain tumor regression and significant extension of survival without damage to surrounding normal brain tissue.

Both ALA and the MRGFUS device have been shown to be safe and well-tolerated in the brain as they are individually FDA-approved for other indications, allowing SonALASense to begin a Phase 0/2 clinical trial in rGBM with no additional animal brain tumor model studies

Our goal is to turn glioblastoma multiforme (GBM) from a deadly cancer into a manageable disease, turning GBM patients into cancer survivors.



Courtesy of Dr. Nader Sanai, Ivy Brain Tumor Center

In addition to creating GBM-specific fluorescence, protoporphyrin can be "activated" by high energies of light in a process called ALA photodynamic therapy (PDT), which activates oxygen molecules in the cell and causes cell death. While ALA PDT is FDA-approved and used as topical therapy every day by dermatologists for skin pre-cancers (actinic keratoses), it has also been used experimentally to treat GBM. However, the process for treating GBM with ALA PDT is invasive and difficult to standardize. Fortunately, we and others have found that MRI-guided focused ultrasound (MRGFUS) can activate

essentially the same process as ALA PDT and have developed it in animal models for that purpose; the process using MRGFUS instead of light to activate protoporphyrin is called sonodynamic therapy (SDT).

MRGFUS is FDA-approved for the noninvasive treatment of essential tremors as well as those arising from Parkinson's disease. We have partnered with Insightec, the company that developed this tremor therapy, to use a similar device to activate ALA SDT in GBM.



**Step 1.**  
Patient with rGBM receives an intravenous injection of SonALASense's proprietary formulation of ALA.

**Step 2.**  
After a few hours during which ALA-induced protoporphyrin accumulates within the rGBM cells, the patient's head is placed within a helmet inside an MRI machine for FUS treatment.



The entire process is expected to take only a few hours. The system is used to focus ultrasound waves from the approximately 1000 ultrasound generating transducers in the helmet over the entire tumor volume, creating light

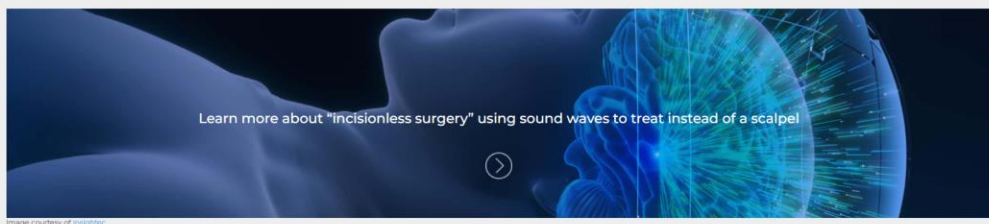
completely noninvasive way. The entire process is expected to take only a few hours. We are hopeful that treatment effects on the rGBM tissue will be observed in less than one

Courtesy of Dr. Hader Sanaei, Ivy Brain Tumor Centre

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Learn more about "incisionless surgery" using sound waves to treat instead of a scalpel

Image courtesy of Insightec

Proposed sonodynamic therapy outpatient procedure for recurrent glioblastoma (rGBM)

**The entire process is expected to take only a few hours.**  
The system is used to focus ultrasound waves from the approximately 1000 ultrasound generating transducers in the helmet over the entire tumor volume, creating light through a process called sonoluminescence and activating the sonodynamic effect in a

completely noninvasive way. The entire process is expected to take only a few hours. We are hopeful that treatment effects on the rGBM tissue will be observed in less than one week, with no significant systemic side effects expected.

#### First Clinical Trial Site



Image courtesy of Ivy Brain Tumor Center

Nader Sanai, MD, Director, pictured above, has agreed to carry out the first clinical trial of our ALA SDT in the United States. The Ben and Catherine Ivy Foundation, through a grant

SonALASense is proud to announce that we are collaborating with the Ivy Brain Tumor Center at the Barrow Neurological Institute in Phoenix, Arizona.

to the Ivy Brain Tumor Center, will be funding the entire clinical costs of our trial.