DTRF Research Priorities
Outlined at DTRF International Research Workshop September 23, 2018

Research funded by the DTRF has resulted in substantial discoveries on the path toward curing desmoid tumors. At the September 2018 Desmoid tumor research symposium, a cohort of nearly 60 desmoid tumor researchers from around the world considered the research areas that can build on the current research findings to best push forward desmoid tumor research toward a cure.

The group suggested developing a grant similar to a Specialized Programs of Research Excellence (SPORE) grant to promote collaborative, interdisciplinary translational desmoid tumor research. They proposed that the group build collaborations in major research areas, thus promoting working together and generating data in a more efficient manner.

The group suggested focusing on three important questions that build on data already collected in ongoing clinical trials, or will build on already-funded DTRF projects. These are areas in which there are critical gaps in knowledge about desmoid tumors and whose results will speed the development of improved treatments.

1) Determine why some tumors behave differently (regression, responders, outliers)

Here we propose to use data collected from ongoing and starting clinical trials to corelate gene expression, protein, and metabolic data with outcome. Additionally gene expression from individual cells within the tumor will be studied. This data will be used to develop a personalized approach to treatment. Prognostic tests and drugs that target pathways in specific tumors will be identified. Data can also be corelated with clinical trial outcome.

2) Determine how the Tumor cell – niche interaction regulates behavior

Data from several studies show that normal cells surrounding the desmoid tumor cells influence the way the tumor behaves. These interactions can be targeted with certain drugs, and may explain why tumors behave differently in various locations, in different patients, or with different aged individuals. Studies in cell cultures will allow us to identify these interactions and drugs to target these.

3) Use available information to identify new therapies

Data from already published studies identifying gene expression in tumors and from the DTRF funded study identifying drugs that target desmoid tumor cells (Collaboration for a Cure) will be analyzed using next generation informatics and machine learning to identify new therapeutic approaches or prognostic tests.

This work will be supported by developing standard measures for clinical trials, storage pre, post and follow-up for therapy, standardized cell and animal models, and developing Crisper/siRNA libraries and data sharing standards.

This collaborative approach will address critical gaps in desmoid tumor cell biology and advance knowledge toward developing new and improved desmoid tumor treatments.