

DAN WELCH, PhD – OUR 2010 GRANT RECIPIENT

2009 RESEARCH PROJECT - KISS1 METASTASIS SUPPRESSOR GENE IN BREAST CANCER

On January 13th 2010, METAvivor Research awarded the first grant for breast cancer metastasis research. It is the first grant awarded by a patient advocacy group in the mid-atlantic area specifically aimed at eradicating death due to metastatic breast cancer by relegating it to a chronic manageable disease status.

This year the \$55,000 METAvivor grant was awarded to Dr. Danny Welch, UAB for research entitled “Mechanism of action of the KISS1 metastasis suppressor”. Dr. Welch’s group has identified a protein called KISS1 to be specifically involved in suppression of metastasis in cancers of the skin (melanomas). Studies show that KISS1 promises to have the same function in breast cancer as well as ovarian and pancreatic cancers. Dr. Welch explained the science behind the discovery and characterization of KISS1 to a captive audience of METAvivors,

family members and oncologists at the Anna Arundel Medical Center. KISS1 is defined as a metastasis suppressor as opposed to a more common tumor suppressor nomenclature. The reason being that KISS1 does not prevent conversion of normal cells to cancer cells (tumorigenesis) or the conversion of low grade tumors to high grade metastatic tumors (tumor progression), but does inhibit growth of metastatic tumors thus preventing death due to metastasis. Most of these experiments were conducted in mouse models of melanoma. **The METAvivor grant is going to enable Dr. Welch’s research group to establish and validate these observations in a model for metastatic breast cancer in mice, a first step towards promising KISS1 based therapeutic interventions.**

The excellent presentation by Dr. Welch was followed by a stimulated discussion. Some of the intriguing questions asked were: How does KISS1 prevent metastatic growth? Can we prevent loss of KISS1 in primary tumors or can we “administer” KISS1 as an additional treatment option? If so, who would benefit most from such a treatment? Does ER/PR/HER2neu (triple negative) status matter to KISS1 function? While all of these are excellent questions, the research thus far could only answer some of them. For example, KISS1 appears to modulate the metastatic niche in the secondary organs making it unfavorable for growth of



Dr. Welch presented a short talk on the proposed research. Note the Lab members in METAvivor garb!

the primary tumor cells but the exact mechanism is still unclear. KISS1 is a naturally secreted protein (i.e., it is stable in the bloodstream) and therefore



conceivably easier to administer as a peptide (similar to insulin), however, the research on toxicity and efficacy are still underway. Finally, it is as yet unknown if the hormonal status of a breast cancer matters to efficiency of KISS1 function.

WE DID IT! CJ presents Dr. Welch with the first installment of the grant award at Anne Arundel Medical Center. Dr. Welch "pockets" the check.

While the research on KISS1 holds great promise, it also underscored the fact that a lot is as yet unknown about

the nature and mechanisms of metastasis in general and breast cancer metastasis in particular. Our grant may be a drop in the ocean but we intend to make it count towards the purging of this terrible disease. In the coming year, we look forward to working with our members and sponsors to raise funds for a 2011 grant of a similar nature.