TPIV110: Breast Cancer

Description
Breast cancer is one of the most prevalent and malicious cancers a patient can face. Fortunately, many therapies have been developed to treat this devastating disease, in particular monoclonal antibodies that target a receptor called Her2/neu. These antibodies such as Herceptin and Perjeta target the Her2/neu receptor and can work remarkably well in controlling the disease. However, the patient’s tumor must have the Her2/neu receptor (~30%) and in addition have the receptor in high enough density to make the antibody effective (~18% of the 30%). This leaves a void where patients who have the receptor but are not eligible for antibody treatment are relegated to chemotherapy, radiation, and surgery. TapImmune’s investigational product TPIV110 also targets Her2/neu by stimulating the body’s own immune system to attack cancer cells with the Her2/neu target.

Mode of action
This new vaccine approach was developed by Dr. Keith Knutson at the Mayo Clinic. The product is a shelf-stable, lyophilized product containing 5 small peptides designed to activate both CD4+ and CD8+ T-cell compartments. Recent developments in immunology suggest that both CD4+ and CD8+ activation is necessary for a robust immune response against foreign antigens. The peptides administered to the patient are presented to the immune system to activate the T-cell against the target.

Trial results
The Phase 1 trial in 22 patients with breast cancer showed TPIV100 (TPIV110 contains an additional peptide and has not been in humans yet) was safe and well-tolerated. The trial also showed that 19 out of 22 patients showed robust T-cell responses to two antigens; 15 out of 22 patients responded to all four antigens. The immune responses in these patients were durable for months after their final treatment.

Development plan
The Phase 1b/2a program for TPIV110 is designed to examine this novel T-cell vaccine both as a stand-alone therapy and as a combination therapy with other standard of care therapies and newer experimental therapies. TapImmune plans to initiate trials in breast cancer by the end of 2017.

Overall, the strategy is obtain positive Phase 2 data and then look for a partnership or collaboration to fund the rest of the commercialization for TPIV110.

Collaboration status
TPIV110 has no collaborations at this time, though we are seeking collaborative opportunities. TapImmune has the exclusive world-wide rights to TPIV200, TPIV100, and TPIV110.

Q4 2017/2018 - TPIV100/110
Mayo clinic to initiate 1b/2 HER2/neu
DCIS DMF Filing