

Lot 2:

### Summary of the Nuclea Biotechnology Technical Assets.

The Nuclea Biotechnology assets include a valuable and incredibly unique set of hybridomas that were the foundation of the Oncogene Science Product line for over 20 years. These hybridomas can be used to produce monoclonal antibodies (Mab) that can be used in a variety of formats including ELISA, Immunohistochemistry, Western blot, Immunoprecipitation, and Flow Cytometry. They can also be used in cell based assays. This highly valuable set of hybridomas can be used to produce Mab that react with very unique epitopes (never commercialized but technically very well characterized) of oncogenes such as RAS, HER-2/neu, EGFR and CAIX. In addition there are hybridomas that can be used to generate antibodies to the Tumor Suppressor Genes p53 and Retinoblastoma (Rb). There are also a variety of hybridomas which will generate Mab to markers of metastasis such as TIMP-1, uPA and PAI-1. There are also hybridomas to growth factor receptors such as IGF1R, PDGFR-beta, VEGFR2, c-MET, HER-2 and EGFR. There are several Mab to very unique epitopes on the HER-2, EGFR and CA IX extracellular proteins that will open up new opportunities for clinical research into the value of the extracellular domains of these oncogenes.

Since the HER-2 Mabs were generated in a very novel fashion to very unique epitopes on the respective proteins, the Mabs could be humanized to generate new targeted therapies directed at the HER-2 and RAS oncoprotein targets. In other words there is potential to use these antibodies by Pharma companies looking to develop new anti-HER-2 drugs like Trastuzumab.

In addition to the HER-2 hybridomas that second most valuable asset are hybridomas that generate Mab to the RAS mutant proteins which are incredibly important for administration of target therapies in lung cancer and colon cancer. One particular antibody (DWP), was shown to detect RAS mutant proteins in formalin fixed paraffin embedded of human tissues by Immunohistochemistry. These results were previously published in PNAS in conjunction with pathologists from Tufts Medical School. In addition to DWP, there are several other hybridomas that make specific Mab to the various mutant forms of the activated RAS protein. In addition there are very unique anti- RAS Mab that react and both normal and mutated RAS in all 3 families (H, K and N) of RAS protein.

This unique set of hybridomas will allow the purchaser to develop several ELISA based assays for liquid biopsy applications. These include ELISAs for unique epitopes on HER-2, EGFR, CAIX, TIMP-1, uPA, PAI-1, VEGFR2, IGF1R, PDGFR-beta, p53, Rb, EphA2 targets. Several antibodies such as RAS, EGFR, HER-2, p53, MIB-1 can be used for Immunohistochemistry products. In addition, there are a series of breast, lung and colon cell lines as well as others that have been used to characterize these Mab and can be used as controls and standards or the various ELISA products.

In addition to the large bank of hybridomas the Nuclea Biotechnology asset includes proprietary manufacturing documents to make several other ELISA tests. The asset also includes documents for manufacture and application of the ras mutant specific monoclonal antibody to DWP in Immunohistochemistry.

Finally, studies and publications have shown that these hybridomas and their corresponding Mabs can be used to develop a unique prognostic breast cancer panel using HER-2, EGFR, TIMP-1, CAIX and uPA. In addition publications have demonstrated the clinical value of combining serum HER-2 ELISA with the EGFR ELISA to identify a population of breast cancer patients with poor prognosis.

In summary, the Nuclea Biotechnology assets includes hybridomas secreting unique Mab, manufacturing documents, laboratory notebooks and hundreds of publications related to the Oncogene Science Product Line.

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