



OAD Technology for the Site-Specific Delivery of Chemotherapeutics

Overview: NBMI, in association with collaborators at The M D Anderson Cancer Center, Houston, TX, have **demonstrated in a live mouse model, in a scientific first, that constructs of magnetically responsive nanoparticles (MNP) can be externally vectored to a tumor site.** The collaboration is now focusing research efforts on the efficacy of MNP constructs as vehicles for the site specific delivery of chemotherapeutics. Under this concept, MNP/chemotherapeutic configurations (such as MNP-Paclitaxel) are to be evaluated for effectiveness in the vectored delivery of high therapeutic doses internal to the tumor structure.

Commercialization Focus: As a vectored delivery mechanism for treating cancerous tissues, this technology offers the potential to maximize chemotherapeutic dosage forms while minimizing harmful or debilitating side effects. The effectiveness of this treatment methodology will lead to a reduction in the number of treatment per cycle with a concurrent increase in survival rates over longer time frames. The capability to vector therapeutics site-specifically will lead to treatment options that do not now exist.

At present, with ovarian cancer as an example, most cases present in the late stages of the disease, resulting in a survival rate of approximately 50% and a 5-year survival rate of less than 20%. There is currently no early stage detection and treatment methodology for this disease. The patient cost/benefit ratio is significantly high and breakthrough technologies are necessary for improvements in both quality of life and patient survival.

Patents are pending.

Advantages: The advantages of vectored delivery over conventional chemotherapeutic treatments are several:

- **Increased effective dose forms**
- **Reduced treatment cycles**
- **Greater patient compliance**
- **Increased patient cost/benefit**

Partnerships: NBMI is seeking joint development partnerships with major healthcare organizations with the vision and capacity for supporting the development and commercialization of new disruptive technology based on NBMI's OAD technology for the delivery of chemotherapeutics.