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Targeting Combined Therapy to Cancer Stem Cells (NANOSTEM)

Cancer stem cells (CSCs) are responsible for initiating cancer, and are therefore highly sought for therapeutic target. Unfortunately, CSCs are a minority among tumour cells, and highly resistant to conventional treatments. Breast cancer CSCs express CD44, a unique membrane receptor, and can thus be specifically targeted. NANOSTEM will develop drug delivery systems that will specifically target CD44-expressing CSCs, enter the cells and release a chemotherapeutic drug, thus selectively killing the tumorigenic cell. The project will use model animals to evaluate the therapeutic potential and toxicity of each system.