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## Patent Search

Invention Title	INNOVATIVE DNA-BASED NANOPROBES FOR FLUORESCENT IMAGING OF CANCER CELLS
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**Abstract:**

**INNOVATIVE DNA-BASED NANOPROBES FOR FLUORESCENT IMAGING OF CANCER CELLS** The method for the development of a targeted fluorescent probe that uses double stranded DNA-silver Nanoclusters (dsDNA-AgNCs) to detect and treat breast cancer cells. The fluorescent probe's shape and structure are vesicle structures, and these vesicles can be specifically recognized and enter cancer cells. They also complementarily match with Early Growth Response Genes in breast cancer cells, cutting off Egr-1, preventing cancer cell expression, and simultaneously releasing fluorescent groups to achieve imaging and therapeutic effects on cancer cells. The DNA fluorescent probe targeted at exhibits stable characteristics and strong biocompatibility. Cy5.5 is a low-cost, small-molecular fluorescent dye that is employed as a targeting molecule. Its luminous feature allows for the diagnosis of malignancies of different kinds. The fluorescence-marked chemical, which uses the MALAT1 genes as a target location, may be employed for our imaging of tumors and is specifically designed for use in tumor developers where MALAT1 gene expression is strong. Because it is a low-cost targeting molecule with target properties on a variety of malignancies, the micro molecular fluorescent dye Cy5.5 can be utilized to diagnose tumors thanks to its fluorescent properties. Moreover, it can be employed as a drug carrier to increase the anticancer medication's targeting ability, treatment effectiveness, and usage rate. FIG.1

**Complete Specification**

Description: INNOVATIVE DNA-BASED NANOPROBES FOR FLUORESCENT IMAGING OF CANCER CELLS

Technical Field

[0001] The embodiments herein generally relate to a method for an innovative DNA-based Nano probe for fluorescent imaging of cancer cells.

Description of the Related Art

[0002] The Breast cancer affects women's physical and mental health and is one of the most prevalent malignant tumors that can be fatal. It often develops in the mammary gland epithelial tissue. There is a tendency toward the emergence of younger cases of breast cancer, making the development of novel approaches to breast cancer prevention, detection, and treatment imperative. The current diagnostic approach misses the optimal window of opportunity for cancer treatment since it has poor sensitivity and specificity, makes it difficult to identify the development of early-stage tumors, and most patients discover their malignancies at a later stage.

[0003] Long-chain code RNA non-volume is thought to have a preferable clinical value, aid in early diagnosis, serve as an index for diagnosis, and be used as molecular diagnostic markers of a particular malignant tumor as encoding gene (mRNA). It may also divide the target spot for sub-targeted therapy. The gene of human lung adenocarcinoma transfer associated retroviral sheet 1 is known as MALAT1 (metastasis associated in lung denocarcinoma transcript 1), and tumor types are closely connected with its overexpression. The current diagnostic approach misses the optimal window of opportunity for cancer treatment since it has poor sensitivity and specificity, makes it difficult to identify the development of early-stage tumors, and most patients discover their malignancies at a later stage. Proteins and lipids make up the majority of the components of the cell membrane. Membrane-forming lipids with two hydrophobic alkyl tails and a hydrophilic head can self-assemble to create lipid bilayers. As a result, the cell membrane serves as a gatekeeper and barrier to regulate the movement of materials and information inside the cell. Furthermore, it is

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