

# Nanoparticle-Based Reagent for DNA and mRNA Detection

Published date: March 1, 2019

## Technology description

### Short Description

Novel, highly sensitive reagent for detection of double stranded DNA in living cells

### Abstract

Northwestern scientists have developed a new reagent for detection of double stranded DNA in cells based on the well-known ruthenium DNA intercalator. Detection of specific genetic elements in live cells is key to understanding the onset and development of various human diseases. While several reagents to accomplish this already exist, many of them suffer from selectivity or detection issues, in addition to requiring toxic transfection reagents for intracellular delivery. This novel detection reagent from Prof. Mirkin's group can enter cells without transfection reagents, is more selective and specific for double stranded DNA than current alternatives and its fluorescence is completely quenched before the target sequence is identified. Further, this reagent could also be used for mRNA detection, localization and quantification, which may lead to development of innovative drug screening platforms.

Tags NANOTECHNOLOGY: nanoparticles, MANUFACTURE/PROCESSES, RESEARCH TOOL: reagent

## Application area

Intracellular detection of duplexed oligonucleotides

Label-free luminescent staining agents

Drug screening platforms

## Advantages

Enhanced photostability and selectivity

Decreased background autofluorescence

Longer luminescence lifetime

No transfection reagents required

## Institution

[Northwestern University](#)

## Inventors

[Chad Shade](#)

[Chad Mirkin](#)

Professor

WCAS Chemistry

[Robert Kennedy](#)

## 联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com