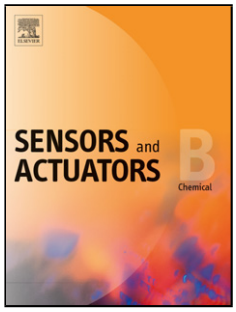

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Ultrasensitive Dynamic Light Scattering based Nanobiosensor for Rapid Anticancer Drug Screening

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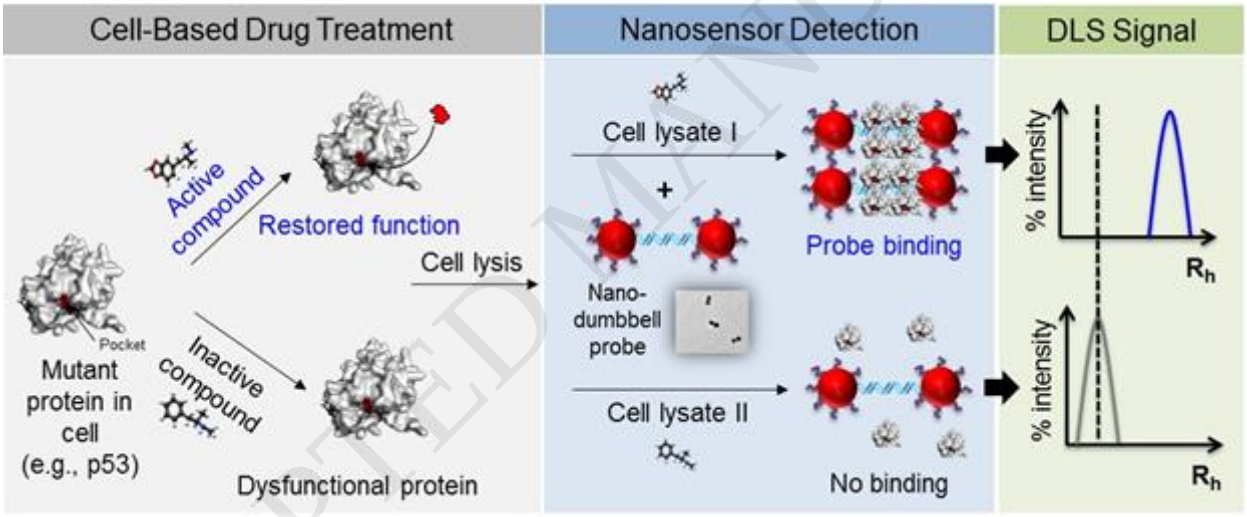
Graphical Abstract



Highlights

- Ultrasensitive DLS-based nanobiosensor for drugs screening in cellular context
- Detection based on hydrodynamic size changes of gold-nanodumbell probes upon drug-protein-DNA binding interactions
- Nanoplasmonic biosensing probes enabled high specificity and low background noise
- Rapid competition assay for determining relative binding affinities and drug activation pathways
- Broadly applicable nanobiosensor concept for DNA-binding molecules and drug study