



Fluorescent sensor for detection of multiple anticancer complexes

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Medical Technology and Devices

Problem

- Platinum-based drugs are the most widely-used cancer chemotherapeutics and are also responsible for the harsh side-effects commonly associated with chemotherapy.
- At present, blood-platinum levels are not routinely measured by clinicians and these drugs are often overdosed and under-dosed. Currently available platinum detection methods have low accessibility and lack specificity for various platinum complexes.
- The ability to directly monitor platinum complex levels in patients during treatment would enable more effective adjustment of dosages and patient treatment plans with fewer side-effects.

Technology

We have developed a robust and versatile fluorescent array that can discriminate and identify 8 different platinum complexes in blood.

The technology is based on a 6 cross-reactive small molecule fluorescent sensors. Using the fluorescent outputs, we have created an array that can uniquely distinguish platinum from other biologically and environmentally relevant metals.

Our array can effectively discriminate different concentration ranges of platinum complexes in blood, and its predictive ability is currently being verified in a cohort of cancer patients who had previously received platinum-based chemotherapy.

Commercial Opportunity

This technology is a significant advance in the viability of on-site, real-time monitoring of blood platinum concentrations in cancer patients undergoing chemotherapy.

- There is currently no widely-used clinical monitoring methods.
- At the research-level, most current sensors are 'lock-and-key' sensors, which only detect a single type of platinum complex.
- Our system is the first to detect multiple types of platinum complexes, as well as the capability to screen out contaminants.

Technology development stage



Intellectual Property Status

Patent application number: WO2022099374

Inventors

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