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(54) **NANOPROBES FOR DETECTION OR MODIFICATION OF MOLECULES**

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(57) **ABSTRACT**

The disclosure provides probes for one or more target molecules. In particular examples, the probes include a molecular linker and first and second functional groups linked and spaced by the molecular linker, wherein the functional groups are capable of interacting with one another or with the target biomolecule in a predetermined reaction, and wherein the molecular linker maintains the first and second functional groups sufficiently spaced from one another such that the functional groups do not substantially interact in an absence of the target biomolecule. In the presence of the target biomolecule the functional groups interact (with each other, with the target biomolecule, or both), and in some examples a detectable signal is produced. In some examples, the functional groups can detect or modify a target molecule. Also provided are methods of using the probes, for example to detect or modify a target molecule.

