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(54) **Title:** EXTRACELLULAR VESICLE DRUG ANALYSIS FOR REAL-TIME MONITORING OF TARGETED THERAPY

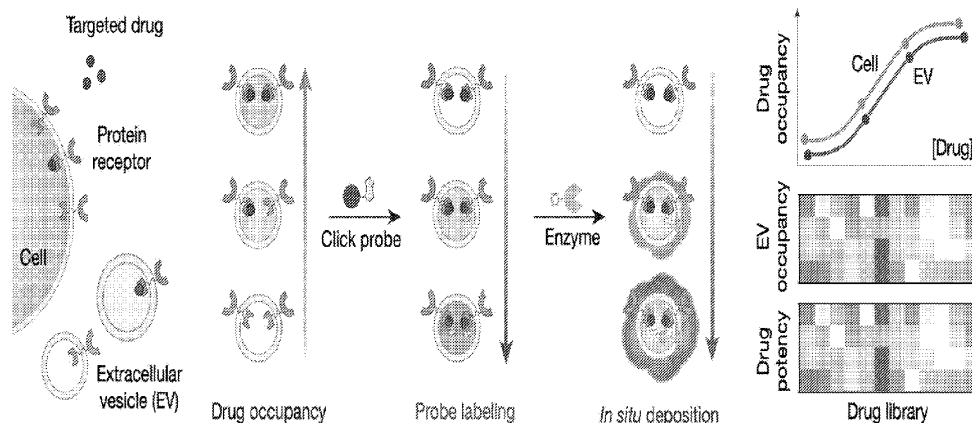


FIG. 1A

(57) **Abstract:** This application provides methods and compositions related to real time monitoring targeted therapeutics by measuring time-dependent dynamics in distinct subpopulations of secreted vesicles. The technology utilizes bio-orthogonal probe amplification and spatial patterning of molecular reactions within plasmonic resonators to measure EV drug dynamics directly in patient blood samples. Small-molecule click probes are used in the assays for competitive, in situ target labeling in whole vesicles; the labeling of target by the probes can be enzymatically amplified to detect drug occupancy in EVs.

[Continued on next page]

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KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

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- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
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