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- (71) Applicant: NANOSTRING TECHNOLOGIES, INC.
[US/US]; 530 Fairview Avenue North, Suite 2000, Seattle,
Washington 98109 (US).
- (72) Inventors: BEECHEM, Joseph M.; 46 Ridgeline Drive,
Eugene, Oregon 97405 (US). KHAFIZOV, Rustem; 1200
Mercer Street, Apt. 212, Seattle, Washington 98109 (US).
- (74) Agents: PAVAO, Matthew et al.; Cooley LLP, 1299
Pennsylvania Avenue, NW, Suite 700, Washington, Dis-
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(54) Title: ENZYME- AND AMPLIFICATION-FREE SEQUENCING

Figure 1

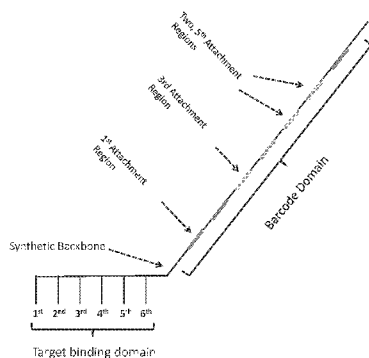
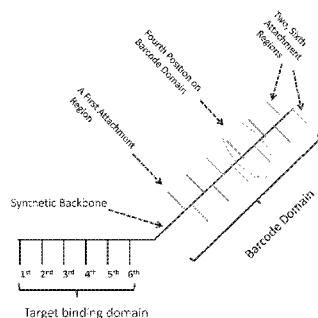


Figure 2



(57) Abstract: The present invention relates to sequencing probes, methods, kits, and apparatuses that provide enzyme-free, amplification-free, and library-free nucleic acid sequencing that has long-read-lengths and with low error rate. A sequencing probe is used comprising a target binding domain and a barcode domain; wherein said target binding domain comprises at least four nucleotides and is capable of binding a target nucleic acid; wherein said barcode domain comprises a synthetic backbone, said barcode domain comprising at least a first attachment region, said first attachment region comprising a nucleic acid sequence capable of being bound by a first complementary nucleic acid molecule and wherein said nucleic acid sequence of said first attachment region determines the position and identity of a first nucleotide in said target nucleic acid that is bound by a first nucleotide of said target binding domain.



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