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(54) Title: METHODS AND SYSTEMS FOR PHYLOGENETIC ANALYSIS

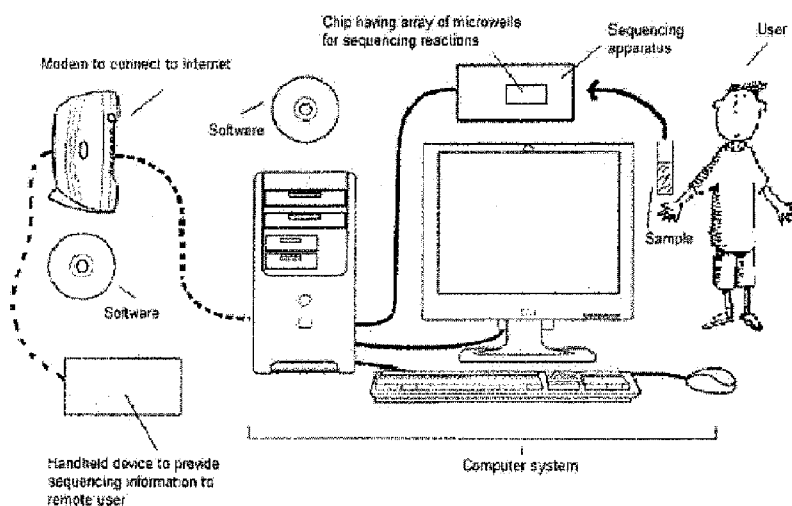


FIG.2

(57) Abstract: Disclosed are methods and systems for designing and using organism-specific and/or operational taxon unit (OTU)-specific probes for detecting, identifying and quantitating a plurality of biomolecules or microorganisms in a sample based on the hybridization or binding of target molecules in the sample with the probes. The disclosure further provides methods of selecting an oligonucleotide probe specific for a node on a clustering tree, and methods of selecting organism-specific or OTU-specific oligonucleotide probes for use in accurately detecting a plurality of organisms in a sample with high confidence. Further, the disclosure provides methods and systems to detect the presence of a rare OTU in a sample.

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