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- (71) **Applicants:** NATIONAL UNIVERSITY OF SINGAPORE [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG). AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH [SG/SG]; 1 Fusionopolis Way, #20-10 Connexis, Singapore 138632 (SG).
- (72) **Inventors:** SCOLNICK, Jonathan; c/o National University of Singapore, Yong Loo Lin School of Medicine, Department of Physiology, 21 Lower Kent Ridge Road, Singapore 119077 (SG). YEO, Eugene; c/o National University of Singapore, Yong Loo Lin School of Medicine, Department of Physiology, 21 Lower Kent Ridge Road, Singapore 119077 (SG). HOON, Shawn; Biomedical Sciences Institute, 61 Biopolis Drive, Proteos #03-13, Singapore 138673 (SG).
- (74) **Agent:** AMICA LAW LLC; 30 Raffles Place, #14-01 Chevron House, Singapore 048622 (SG).
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(54) **Title:** METHODS FOR MULTIPLEX DETECTION OF MOLECULES

General workflow

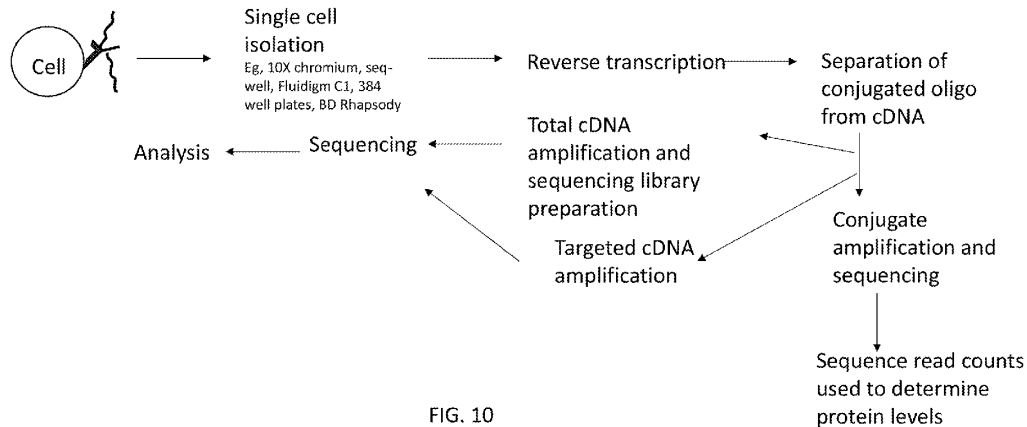


FIG. 10

(57) **Abstract:** The present invention provides methods, antibodies and kits for detecting and/or quantifying expression of both non-nucleic acid molecules, such as proteins, and nucleic acid molecules in a single sample or single cell. The antibody is covalently conjugated to an oligonucleotide, such as a single-stranded DNA molecule, which comprises an identification tag and a blocking group, such as a ddNTP or an inverted dTTP, which prevents extension of the oligonucleotide by a polymerase. The method comprises the steps of reverse transcribing the conjugated oligonucleotide and the target nucleic acid simultaneously, amplifying both transcription production, and detecting the amplicons thereof. The method is also useful for detecting and/or quantifying the number of cells in a sample expressing a given non-nucleic acid molecule (e.g. protein).

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