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- (71) **Applicants:** **HSIAO, Wen-Chang** [CN/CN]; 13F., No. 239, Sec. 1, Fuxing S. Rd., Da'an Dist., Taipei City 106091, Taiwan (CN). **CYTOTEST INC.** [US/US]; 1395 Piccard Drive, Suite 308, Rockville, MD 20850 (US).
- (72) **Inventors:** **CHEN, Yi-Song**; 13F., No. 239, Sec. 1, Fuxing S. Rd., Da'an Dist., Taipei City 106091, Taiwan (CN). **LIN, Matthew Shihhsiu**; 1395 Piccard Drive, Suite 308, Rockville, MD 20850 (US). **EBNER, Reinhard**; 1395 Piccard Drive, Suite 308, Rockville, MD 20850 (US). **CHEN, Yi-Hsuan**; 13F., No. 239, Sec. 1, Fuxing S. Rd., Da'an Dist., Taipei City 106091, Taiwan (CN).

(74) **Agent:** **CHINA ZHENGHE INTELLECTUAL PROPERTY AGENCY**; Room C7, Floor 9, Building 2, Xihuan Plaza, No. 1, Xizhimenwai Street, Xicheng District, Beijing 100044 (CN).

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(54) **Title:** METHODS FOR DETECTING NUCLEIC ACIDS OF INTEREST VIA CIS-CLEAVAGE OF CRISPR/CAS

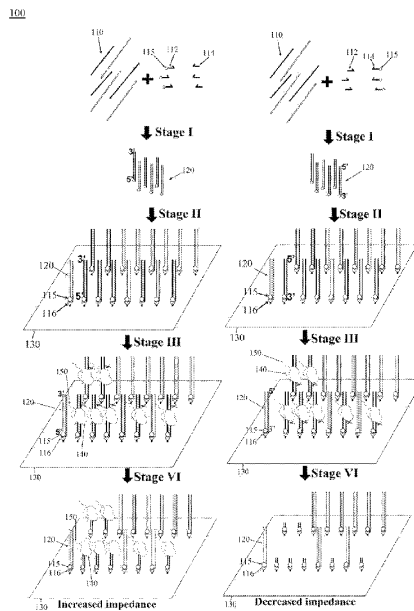


FIG. 1

(57) **Abstract:** Provided is a method for detecting a nucleic acid of interest in a sample. The method includes steps of: (i) producing a labeled nucleic acid having a first adapter at its 5' or 3' ends; (ii) applying the labeled nucleic acid of step (i) onto a substrate having an electrode disposed thereon, in which the electrode is coated with a second adapter configure to capture the first adapter thereby immobilizing the nucleic acid of interest onto the electrode; (iii) contacting the immobilized nucleic acid of interest of step (ii) with a composition comprising a CRISPR/Cas protein and a guide RNA specific to a segment of the nucleic acid of interest to initiate cis-cleavage of the immobilized nucleic acid of interest by the CRISPR/Cas protein; and (iv) measuring a signal of the electrode after the cis-cleavage. The method is characterized by not using a reporter to detect the cleaved product after the cis-cleavage.

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