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Chou et al.

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(54) **METHODS OF USING FET LABELED OLIGONUCLEOTIDES THAT INCLUDE A 3'→5' EXONUCLEASE RESISTANT QUENCHER DOMAIN AND COMPOSITIONS FOR PRACTICING THE SAME**

(52) **U.S. Cl.**
CPC *C12Q 1/6825* (2013.01); *C12Q 1/686* (2013.01)

(58) **Field of Classification Search**
CPC C12Q 1/6825; C12Q 1/686
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See application file for complete search history.

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(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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This patent is subject to a terminal disclaimer.

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Primary Examiner — Jezia Riley

Related U.S. Application Data

(57) **ABSTRACT**

(63) Continuation of application No. 12/945,777, filed on Nov. 12, 2010, now Pat. No. 8,822,673, which is a continuation of application No. 12/786,194, filed on May 24, 2010, now Pat. No. 8,088,583, which is a

Methods and compositions are provided for detecting a primer extension product in a reaction mixture. In the subject methods, a primer extension reaction is conducted in the presence of a polymerase having 3'→5' exonuclease activity and at least one FET labeled oligonucleotide probe that includes a 3'→5' exonuclease resistant quencher domain. Also provided are systems and kits for practicing the subject methods. The subject invention finds use in a variety of different applications, and are particularly suited for use in high fidelity PCR based reactions, including SNP detection applications, allelic variation detection applications, and the like.

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18 Claims, 19 Drawing Sheets

(51) **Int. Cl.**
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C12P 19/34 (2006.01)
C07H 21/02 (2006.01)

