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(54) **FLUORESCENT PROTEINS**

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(58) **Field of Search** 435/60, 325, 252.3, 435/254.11, 69.1, 40.5; 530/350, 808; 536/23.1

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,610,031 * 3/1997 Burgesen et al. 435/69.1

OTHER PUBLICATIONS

Delagrave et al (Bio/Technology, 19:151–154), 1995.*
Burgess et al (J. Cell Bio, 111:2129–2138), 1990.*
Lazar et al (Mol & Cell Biol. 8:1247–1252), 1988.*
Tao et al (J. Immunel, 143:2595–2601), 1989.*

* cited by examiner

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(57) **ABSTRACT**

The present invention relates to novel variants of the fluorescent protein GFP having improved fluorescence properties.

15 Claims, 12 Drawing Sheets