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- (54) **Title:** HUMAN CONE PHOTORECEPTOR OPTOGENETIC CONSTRUCTS

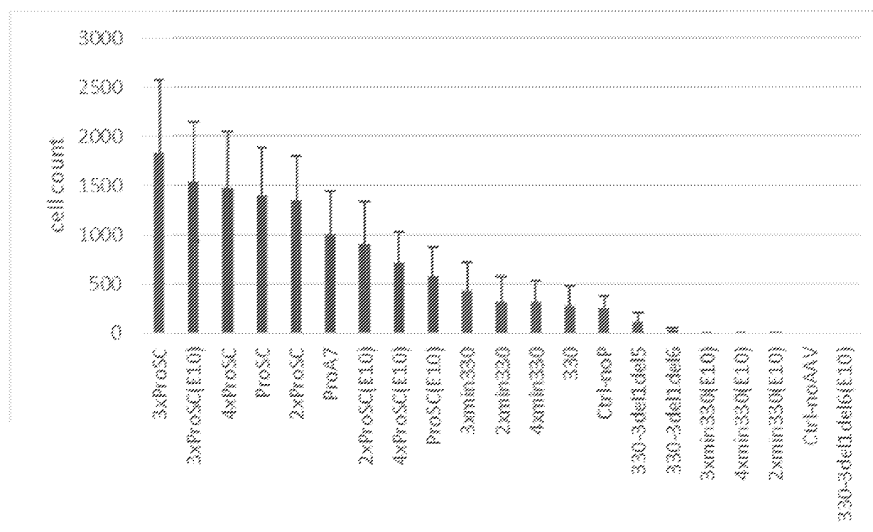


FIG. 16

- (57) **Abstract:** The disclosure relates to nucleic acids comprising a synthetic cone-specific promoter, a depolarizing optogenetic protein and optionally a reporter molecule; and a Woodchuck Hepatitis Virus Posttranscriptional Regulatory element (WPRE). The nucleic acid can be used in vectors or host cells to drive expression of the depolarizing optogenetic protein in retinal cells, particularly cone photoreceptors.

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