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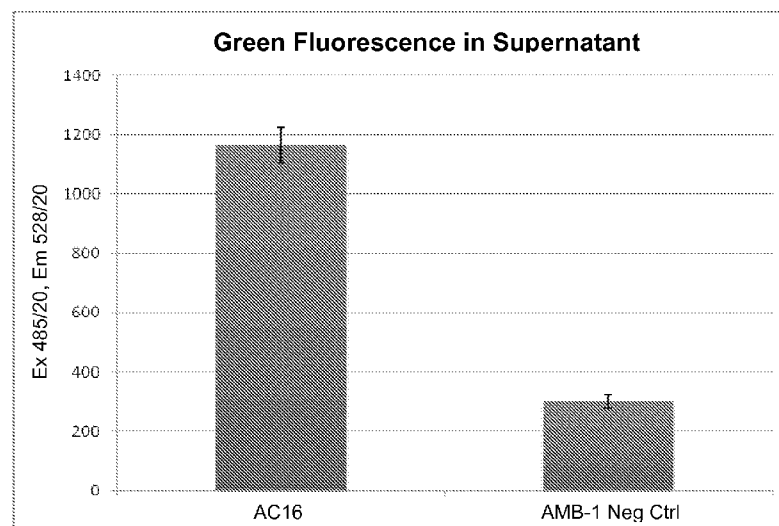
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(54) Title: HOST CELL MODIFICATION WITH ARTIFICIAL ENDOSYMBIONTS

**FIG. 10**

(57) **Abstract:** The present invention is directed generally to host cells with artificial endosymbionts, wherein the artificial endosymbiont and the host cell communicate with each other to alter a phenotype of the host cell. In some embodiments, the communication comprises the secretion of a polypeptide from the artificial endosymbiont into the host cell. The secreted polypeptide can be a selectable marker, a reporter protein, a transcription factor, a signal pathway protein, a receptor, a growth factor, a cytokine, an effector molecule or other factors that can produce a phenotype in the host cell.