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Obtaining Blue Fluorescent Protein through a Novel Technique

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Fluorescent proteins have been used as molecular tools like reporter genes or localization markers since a few years ago. Because of the research needs, a huge variety of fluorescent proteins have been generated, most of them have their origin on the Aequoreavictoria GFP. Some of these proteins have been conferred improvements in their structural properties or their color emission has been modified. Laboratories, which employ these techniques, spend a lot of time and money. The first one, due to the prolonged obtaining process and the second one because they need to have more than one kind of fluorescent proteins coding genes and they have an expensive cost. In this work we obtain a GFPuv color variant, using a low cost cloning techniques that increases the usual speed of the process. We use E. coli DH5α for the plasmids propagation and assembly. For the color responsible amino acid codons modification we made a site-directed mutagenesis, we add to our PCR mutagenic primers designed for having between them homolog regions in their 5' extreme to recircularize the PCR fragment by in-vivo recombination. We transformed the bacterial strain by thermal shock. The recombinant protein was expressed in the same bacterial strain cultured in LB agar supplemented with 2% L (+)-arabinose and 100 ug/mL ampicillin for 24 hours at 37 °C. When we illuminated them with UV light of 390 nm, we observe the mutants bright blue. In conclusion, through this method we substantially decreases costs and time inmutagenesis process.

Biography:

Lucelly studies Biotechnology at the Benemérita Universidad Autónoma de Puebla, México since 2018. She works in the research group of Dra. MaríadelRayoSantellánOlea at the Micoplasmas Laboratory on the Research Center for Microbiological Sciences..