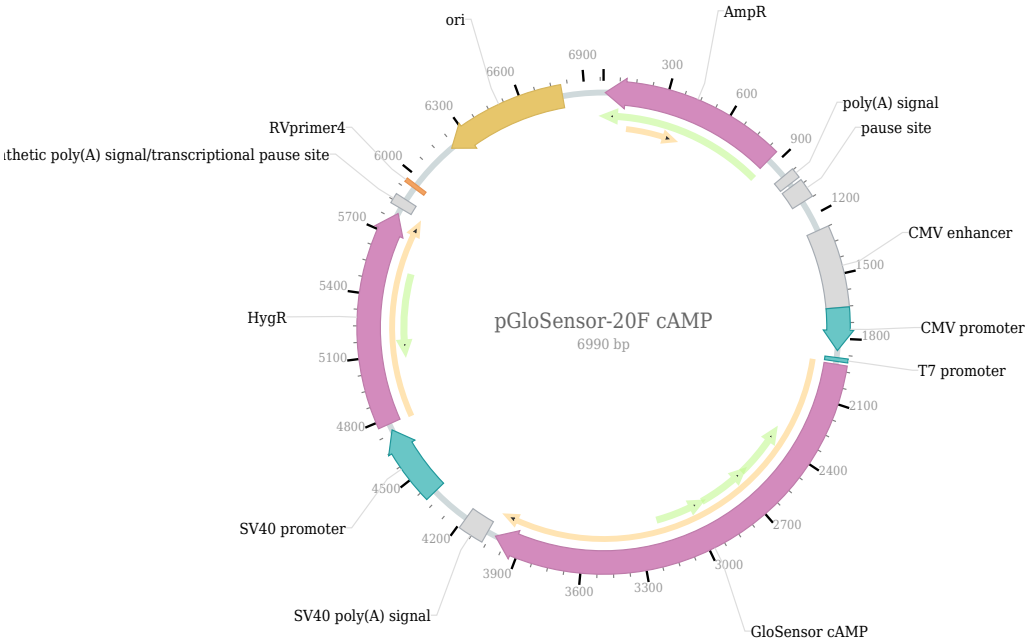
pGloSensor-20F cAMP

Vector ID	V005922
Antibiotic Resistance	Ampicillin
Length	6990 bp
Vector Type	Expression vector

Product Information

Replication Origin	ori
Source/Author	Stecha PF, McNamara B, Binkowski BF.
Promoter	SV40
Comment	pGloSensor-20F and pGloSensor-22F are two luciferase-based plasmid variants, designed for real-time monitoring of intracellular cyclic adenosine monophosphate (cAMP) levels in live cells, primarily for GPCR signaling studies and drug discovery. Derived from the 20F construct, the 22F variant features amino acid modifications in the N-terminal luciferase fragment, cAMP-binding domain, and linker peptide. It offers a superior signal-to-background ratio, expanded linear range, and more accurate reflection of cell signaling dynamics. However, 22F has lower apparent affinity for cAMP compared to 20F. The 20F variant exhibits higher cAMP affinity and greater thermostability—retaining activity longer at elevated temperatures (e.g., 37 °C) than 22F. Its main limitation is a relatively modest signal-to-background ratio, which is less pronounced than that of 22F under the same conditions. Both plasmids enable sensitive, high-throughput-compatible cAMP detection, with optimal performance at room temperature (20-23 °C) for 22F and suitability for supra-ambient temperature assays for 20F.

Vector Map



Plasmid Resuspension Protocol

1. Centrifuge at 5,000×g for 5 min.
2. Carefully open the tube and add sterile water to dissolve the DNA: add 20 µl for 5 µg plasmid, and 100 µl for 100 µg plasmid.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin to concentrate the liquid at the bottom. Speed is less than 5000×g.
5. Store the plasmid at -20 ℃.