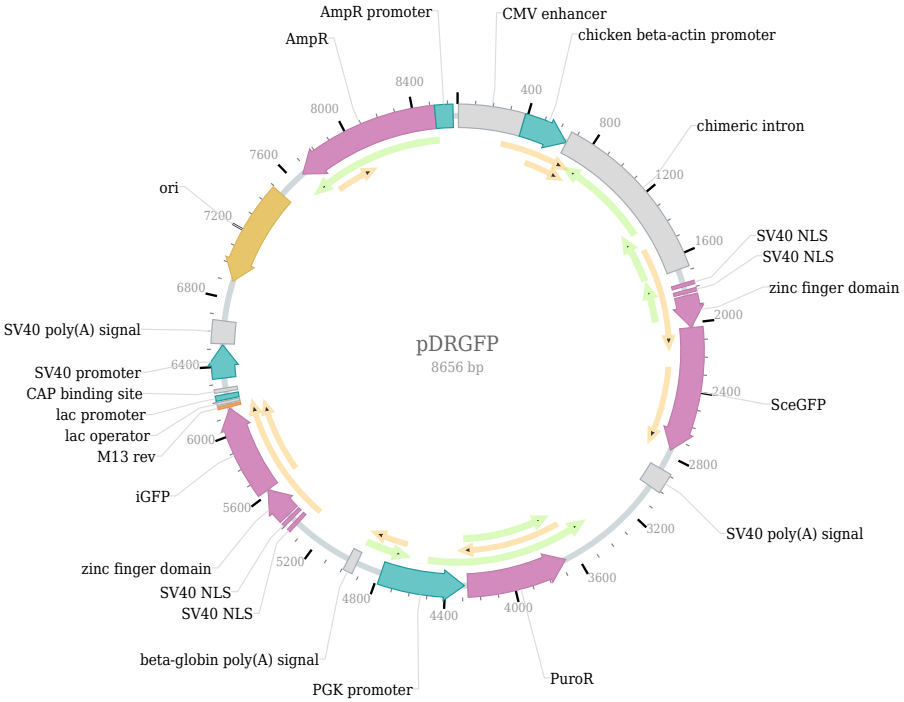
pDRGFP

Vector ID	V001285
Antibiotic Resistance	Ampicillin
Length	8656 bp
Vector Type	Mammalian Expression

Product Information

Selection Marker	Puromycin
Copy Number	High Copy
Cloning Method	Restriction Enzyme
5' Primer	None
Growth Strain(s)	DH10B
Growth Temperature	37℃
Comment	pDR-GFP is a chromosome-integrated, GFP-based reporter vector designed to monitor homology-directed repair (HDR/GC, gene conversion) of chromosomal double-strand breaks (DSBs) in mammalian cells. Its structure contains two tandem, incomplete GFP sequences: a 5'-truncated "iGFP" (inactive GFP) and a 3'-truncated "SceGFP" with an I-SceI endonuclease recognition site inserted. When I-SceI induces a DSB at the I-SceI site within SceGFP, HDR/GC uses the homologous iGFP sequence as a template to restore a functional GFP gene, resulting in GFP fluorescence detectable by flow cytometry (FACS). This reporter is widely used in studies on HDR/GC regulation—for example, to assess the impact of factors like RAD51 or CtIP on HDR/GC efficiency, and to compare HDR/GC with other DSB repair pathways (e.g., alt-NHEJ, SSA) in cell lines such as mouse ES cells and HEK293 cells.

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 ℃.