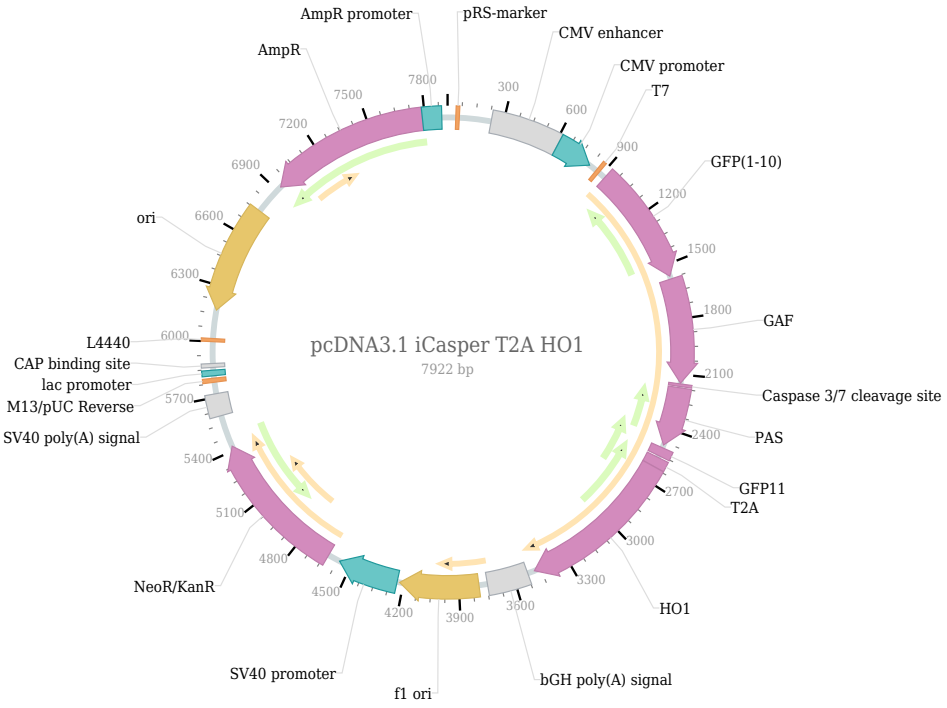
pcDNA3.1 iCasper T2A HO1

Vector ID	V017271
Antibiotic Resistance	Ampicillin
Length	7922 bp
Vector Type	Gene expression
Host	Mammalian cells

Product Information

Replication Origin	ori
Selection Marker	Neo/G418
Promoter	CMV
Growth Strain(s)	DH10B
Growth Temperature	37℃
Comment	Infrared fluorescent proteins (IFPs) were derived and engineered from bacterial phytochrome photoreceptors (BphPs). The photosensory module of BphPs consists of the PAS, GAF and PHY domains. Light irradiation activates the photosensory module, which then transmits the signal to the effector domain to initiate a molecular signaling pathway. As a chromophore, BphPs use biliverdin (BV), which is located in a pocket of the GAF domain and is covalently bound to the Cys in the PAS domain. IFPs are composed of the N-terminal PAS and GAF domains of BphPs, and autocatalytically incorporate the chromophore biliverdin (BV). BV is a catabolic metabolite of heme by heme oxygenase and is nonfluorescent by itself. BV binds to the GAF domain noncovalently and forms a thioether bond with a conserved cysteine near N terminus of IFPs. iCasper consists of spGFP-N, spGFP-C and caspase3 cleavage site-separated IFPs PAS and GAF domains. Cells expressing iCasper were green but not infrared fluorescent. Upon addition of staurosporine, which is a protein kinase inhibitor and induces apoptosis by activating caspase 3, iCasper became infrared fluorescent as the cells underwent apoptosis.

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 ℃.