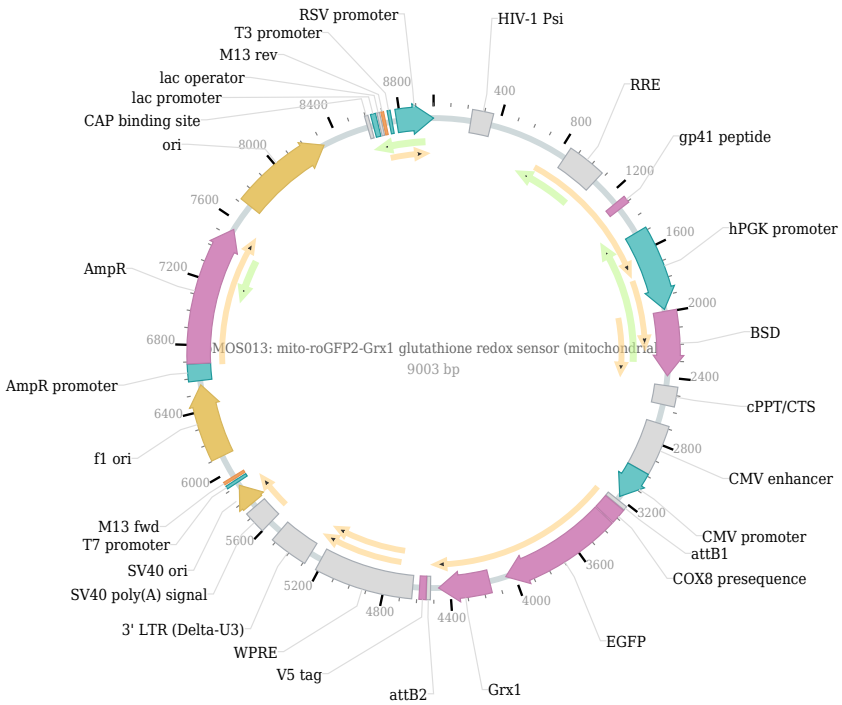
pMOS013: mito-roGFP2-Grx1 glutathione redox sensor (mitochondrial)

Vector ID	V014411
Antibiotic Resistance	Ampicillin
Length	9003 bp
Vector Type	Protein expression
Host	Mammalian cells, Lentivirus

Product Information

Replication Origin	ori
Selection Marker	Blast
Promoter	hPGK
Growth Strain(s)	Stbl3
Growth Temperature	30℃
Comment	pMOS013 encodes mito-roGFP2-Grx1, a genetically encoded ratiometric fluorescent sensor exclusively targeted to the mitochondrial matrix. It specifically tracks mitochondrial glutathione (GSH/GSSG) redox potential via two excitation wavelengths (405 nm, 485 nm) and a single 510 nm emission channel. Its fused Grx1 domain boosts sensitivity and selectivity for glutathione redox shifts, showing strong signal changes under H_2O_2 oxidation or DTT reduction. This lentiviral sensor is integrated into the MOSAIC platform to profile organelle redox dynamics alongside dozens of other cellular physiological reporters in parallel.

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 ℃.