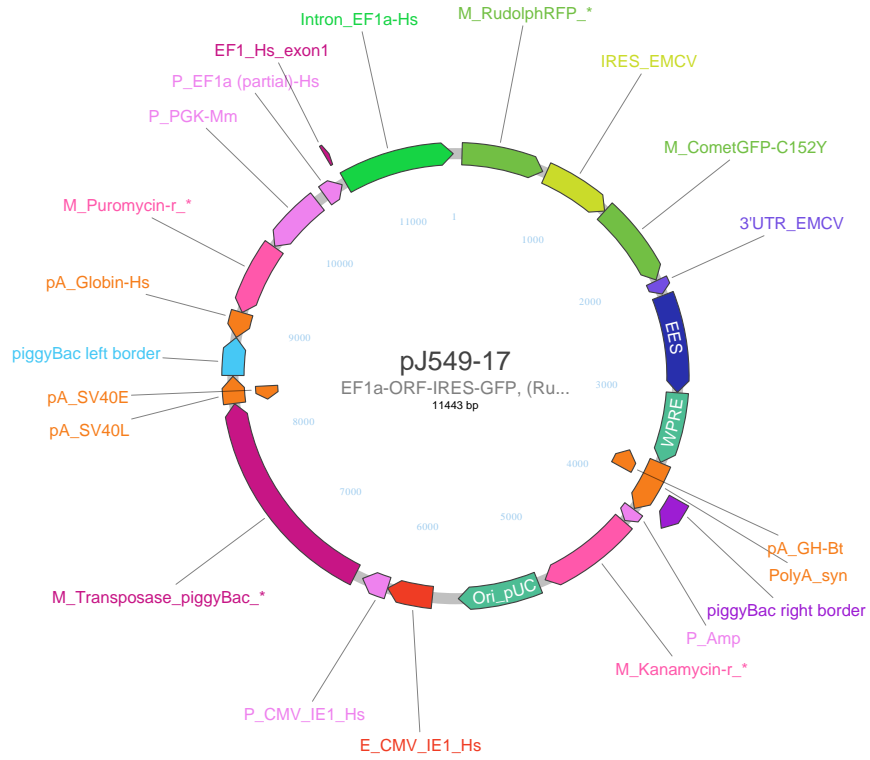


## Other Plasmid Maps

### Plasmid Map



Name	Qty	Storage
pJ549-17	2µg	-20°C

## Feature list descriptions

3'UTR_EMCV	The 3'-untranslated region (3'-UTR) from the encephalomyocarditis virus (EMCV) enhances IRES translation activity in different cell types. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/20079737">www.ncbi.nlm.nih.gov/pubmed/20079737</a> )
CometGFP-C152Y	IP-Free© green fluorescent reporter protein that is used as a selectable marker for expression monitoring of your protein. Ex/Em: 400/515 nm.
E_CMV_IE1_Hs	The cytomegalovirus (CMV) enhancer element plays a critical role in overcoming inefficient transcriptional activities of promoters, thereby enhancing transcription. The hCMV IE1 enhancer/promoter is one of the strongest enhancer/promoters known and is active in a wide range of cell types. ( <a href="http://www.link.springer.com/article/10.1007%2Fs11248-008-9235-y">www.link.springer.com/article/10.1007%2Fs11248-008-9235-y</a> )
EES	DNA2.0's proprietary expression enhancement element
Intron_EF1a-Hs	The human elongation factor one alpha (EF1 alpha) first intron comprises enhancer elements and has been shown to enhance expression of heterologous proteins in mammalian cells. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/11738725">www.ncbi.nlm.nih.gov/pubmed/11738725</a> )
IRES_EMCV	An internal ribosome entry site, abbreviated IRES, is a nucleotide sequence that allows for translation initiation in the middle of a messenger RNA (mRNA) sequence as part of the greater process of protein synthesis. When an IRES segment is located between two reporter open reading frames in a eukaryotic mRNA molecule (a bicistronic mRNA), it can drive translation of the downstream protein coding region independently of the 5'-cap structure bound to the 5' end of the mRNA molecule. In such a setup both proteins are produced in the cell. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/16989088">www.ncbi.nlm.nih.gov/pubmed/16989088</a> )
Kanamycin-r	An effective bacteriocidal agent that inhibits ribosomal translocation thereby causing miscoding. The gene coding for kanamycin resistance is Neomycin phosphotransferase II (NPT II/Neo). <i>E.coli</i> transformed with plasmid containing the kanamycin resistance gene can grow on media containing 25 µg/ml kanamycin. Kanamycin is a white to off-white powder that is soluble in water (50mg/ml). ( <a href="http://www.en.wikipedia.org/wiki/Kanamycin">www.en.wikipedia.org/wiki/Kanamycin</a> )
Ori_pUC	The origin of replication is a sequence in a genome at which replication is initiated. The pUC ori is a mutated form of origin derived from <i>E. coli</i> plasmid pBR322 which allows production of greater than 500 copies of plasmid per cell. ( <a href="http://www.en.wikipedia.org/wiki/Origin_of_replication">www.en.wikipedia.org/wiki/Origin_of_replication</a> )
P_CMV_IE1_Hs	The CMV promoter is a constitutive mammalian promoter and mediates strong expression in various cellular systems. We have seen strong expression in HEK 293 and CHO cells. CMV mediates strong Cas9 transient expression compared to CAG or CBh promoters. CMV promoter mediated only transient expression in hESCs. CMV promoters have been reported to be prone to 'silencing' in some cell lines. ( <a href="http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611">www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611</a> )
P_EF1a (partial)-Hs,P_EF1a_(min)-Hs	EF1 a promoter is a constitutive mammalian promoter used to drive ectopic gene expression in various in vitro and in vivo contexts. The EF-1 alpha promoter, which offers a broad host range, is derived from the human EF1A1 gene that expresses the alpha subunit of eukaryotic elongation factor 1. EF-1 alpha promoters allow robust, constitutive, long-term expression of your gene of interest in cell types in which CMV promoters are often silenced, such as hematopoietic and stem cells. The EF1 a promoter is shown to be superior to the CMV promoter in undifferentiated mouse, monkey and human ESCs. ( <a href="http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611">www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611</a> )
P_PGK-Mm	The mouse phosphoglycerate kinase I promoter (PGK) is a weak constitutive promoter compared to CMV, EF1 alpha and SV40. ( <a href="http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611">www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0010611</a> )
pA_GH-Bt	The bovine growth hormone polyadenylation (bgh-PolyA) signal is a specialized termination sequence for protein expression in eukaryotic cells. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/17407167">www.ncbi.nlm.nih.gov/pubmed/17407167</a> )
pA_Globin-Hs	The human beta-globin polyadenylation signal is a strong signal that is required for transcription termination. ( <a href="http://www.sciencedirect.com/science/article/pii/S0092867487902923">www.sciencedirect.com/science/article/pii/S0092867487902923</a> )
pA_SV40E	The simian virus 40 early polyadenylation signal is an RNA element which promotes efficient polyadenylation resulting in high levels of steady-state mRNA. A poly(A) tail is added to an RNA at the end of transcription and protects the mRNA molecule from enzymatic degradation in the cytoplasm and aids in transcription termination, export of mRNA from the nucleus and translation. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/2836265">www.ncbi.nlm.nih.gov/pubmed/2836265</a> )
pA_SV40L	The simian virus 40 late polyadenylation signal is an RNA element which promotes efficient polyadenylation. A poly(A) tail is added to an RNA at the end of transcription and protects the mRNA molecule from enzymatic degradation in the cytoplasm and aids in transcription termination, export of mRNA from the nucleus and translation. ( <a href="http://www.ncbi.nlm.nih.gov/pmc/articles/PMC362504/">www.ncbi.nlm.nih.gov/pmc/articles/PMC362504/</a> )
PolyA_syn	a synthetic polyadenylation signal based on the highly efficient poly (A) signal of the rabbit beta-globin gene (Levitt et.al., 1989. Genes Dev., 3: 1019-1025). ( <a href="http://www.sciencedirect.com/science/article/pii/S1097276500804657">www.sciencedirect.com/science/article/pii/S1097276500804657</a> )
Puromycin-r	Resistance to puromycin is conferred by the Pac gene encoding a puromycin N-acetyl-transferase (PAC) that was found in a <i>Streptomyces</i> producer strain. It is used as a selective agent in cell culture systems and is toxic to prokaryotic and eukaryotic cells. It is poorly active on <i>E.coli</i> . Puromycin is soluble in water (50 mg/ml), is a colorless solution at 10 mg/ml and is stable for one year in solution when stored at -20°C. The recommended dose as a selection agent in cell cultures is within a range of 1-10 µg/ml, although it can be toxic to eukaryotic cells at concentrations as low as 1 µg/ml. Puromycin acts quickly and can kill up to 99% of nonresistant cells within 2 days. ( <a href="http://www.en.wikipedia.org/wiki/Puromycin">www.en.wikipedia.org/wiki/Puromycin</a> )
RudolphRFP	IP-Free© red fluorescent reporter protein that is used as a selectable marker for expression monitoring of your protein. Ex/Em: 553/570 nm.
WPRE	A <i>cis</i> -acting element, the Woodchuck hepatitis post-transcriptional regulatory element (WPRE), contributes to higher transgene expression. ( <a href="http://www.ncbi.nlm.nih.gov/pubmed/17597793">www.ncbi.nlm.nih.gov/pubmed/17597793</a> )

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