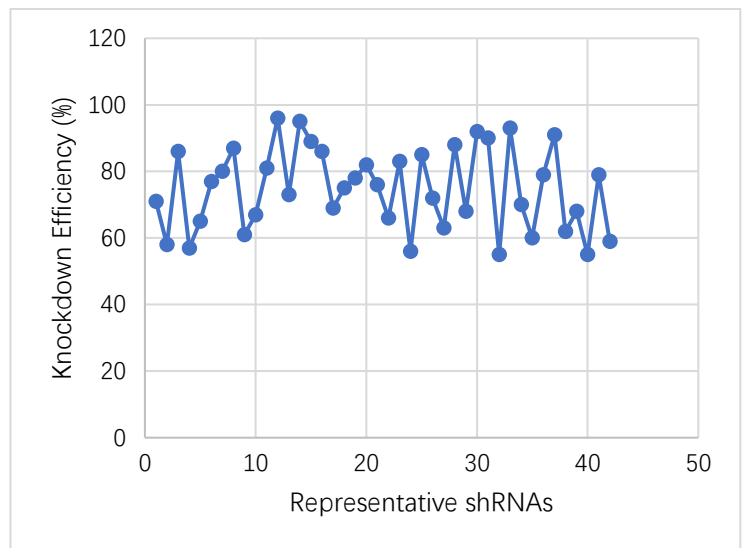


## shRNA Expression Clones Long-term Gene Silencing Tool

Short hairpin RNA (**shRNA**) is transcribed as a single-stranded RNA of 50 ~ 70 nucleotides in length that form a stem-loop structure consisting of a 19 ~ 29 bp dsRNA stem region, a ssRNA loop of at least 4 nucleotides and a dinucleotide 3' overhang. In the cytoplasm, nuclease Dicer recognizes and cleaves shRNA at the loop. The processed siRNA enter the RISC to direct cleavage and subsequent degradation of target mRNAs in a sequence-specific manner. Vector-based shRNA is a widely used approach in research of gene knockdown.

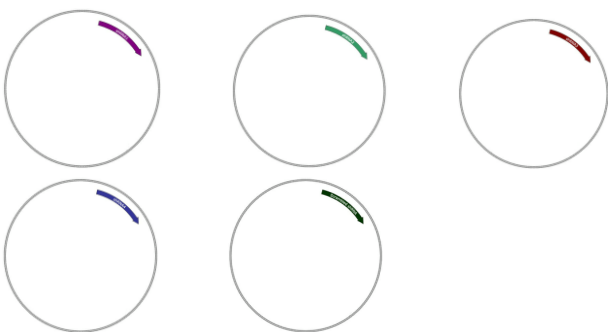
**RGBiotech** offers shRNA expression clones that cover genome-wide target genes from **human**, **mouse** and **rat**. Multiple plasmid backbones are available to meet various needs of shRNA expression, transient or permanent, delivered by plasmid transfection or virus infection.



**Figure 1.** Gene knockdown efficiency of representative genes was quantified at the mRNA level and compared to scrambled shRNA control. For most target genes, approximately **70% or greater gene silence** was achieved.

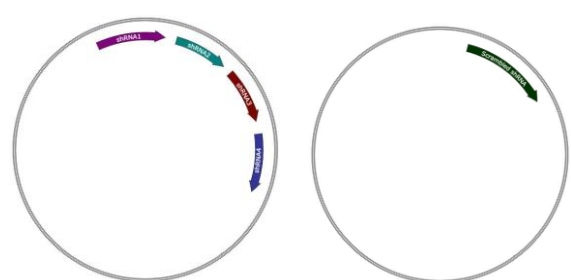
### One Plasmid One shRNA System

4 target shRNA plasmids + 1 scrambled shRNA plasmid



### One Plasmid Four shRNAs System

1 target shRNA plasmid + 1 scrambled shRNA plasmid



Our collections of shRNA vectors include **non-viral plasmids**, **lentiviral plasmids**, **adenoviral plasmids** and **AAV plasmids**. These plasmids provide flexible options for **promoters**, **selection markers**, and **fluorescent reporters**.

For difficult-to-transfect cells using typical methods such as lipid transfection or electroporation, viral plasmids are better choices because they can be packaged into virus particles which can significantly improve delivery efficiency and specificity.

Vector Name	Vector Type	Promoter	Marker	Reporter
pRG-U6-Hyg	Non-viral	U6	Hygromycin	-
pRG-H1-Hyg	Non-viral	H1	Hygromycin	-
pRG-U6-Neo	Non-viral	U6	Neomycin	-
pRG-H1-Neo	Non-viral	H1	Neomycin	-
pRG-U6-Neo-GFP	Non-viral	U6	Neomycin	GFP
pRG-H1-Neo-GFP	Non-viral	H1	Neomycin	GFP
pRG-U6-Neo-RFP	Non-viral	U6	Neomycin	RFP
pRG-H1-Neo-RFP	Non-viral	H1	Neomycin	RFP
pRG-LV-U6-Puro	Lentiviral	U6	Puromycin	-
pRG-LV-U6-GFP	Lentiviral	U6	-	GFP
pRG-LV-U6-RFP	Lentiviral	U6	-	RFP
pRG-LV-U6-RFP-Puro	Lentiviral	U6	Puromycin	RFP
pRG-LV-H1-GFP-Puro	Lentiviral	H1	Puromycin	GFP
pRG-LV-H1-GFP	Lentiviral	H1	-	GFP
pRG-LV-H1-RFP	Lentiviral	H1	-	RFP
pRG-LV-U6-GFP-Puro	Lentiviral	U6	Puromycin	GFP
pRG-LV-H1-RFP-Puro	Lentiviral	H1	Puromycin	RFP
pRG-LV-U6-RFP-Blas	Lentiviral	U6	Blasticidin	RFP
pRG-ADV-H1-GFP	Adenoviral	H1	-	GFP
pRG-ADV-H1-RFP	Adenoviral	H1	-	RFP
pRG-ADV-U6-GFP	Adenoviral	U6	-	GFP
pRG-ADV-U6-RFP	Adenoviral	U6	-	RFP
pRG-AAV-H1-GFP	AAV	H1	-	GFP
pRG-AAV-H1-RFP	AAV	H1	-	RFP
pRG-AAV-U6-GFP	AAV	U6	-	GFP
pRG-AAV-U6-RFP	AAV	U6	-	RFP
pRG-AAV-4shRNA-GFP	AAV	H1, U6	-	GFP
pRG-LV-4shRNA-GFP-Puro	Lentiviral	H1, U6	Puro	GFP
pRG-ADV-4shRNA-GFP	Adenoviral	H1, U6	-	GFP