

# CRISPR-on

## RNA-guided Transcriptional activator

CRISPR-on is an RNA-guided Transcriptional activator system with two components, the dCas9 activator protein and the single guide RNA (sgRNA). While the dCas9 protein provides the transactivation activity, the sgRNA component provides the specificity and is designed to target promoters or enhancers of genes of interest.

Different flavors of activators were constructed, with VP48 containing 3x minimal VP16 domains, VP64 with 4, VP96 with 6, and VP160 with 10.

dCas9 activators and sgRNAs can be separately transfected (pmax dCas9 activators [Table 2] + sgRNA expression vector or the linear DNA containing the sgRNA expressing fragment produced by PCR), or expressed from a single dual-expression vector [Table 1].

dCas9 activator ORFs (with Stop codon) are also available as Gateway donor vectors [Table 3] and can be transferred to Gateway destination vectors (e.g., pmax-DEST [Table 4] and <http://www.lifetechnologies.com/us/en/home/life-science/cloning/gateway-cloning/gateway-destination-vectors.html>) to adapt to different systems by LR clonase reaction.

### 1. dCas9 Activators sgRNA Dual Expression

Activator	Plasmid	Addgene ID
VP48	pAC2	48236
VP64	pAC152	48238
VP96	pAC153	48239
VP160	pAC154	48240

### 2. pmax dCas9 Activator Expression plasmids

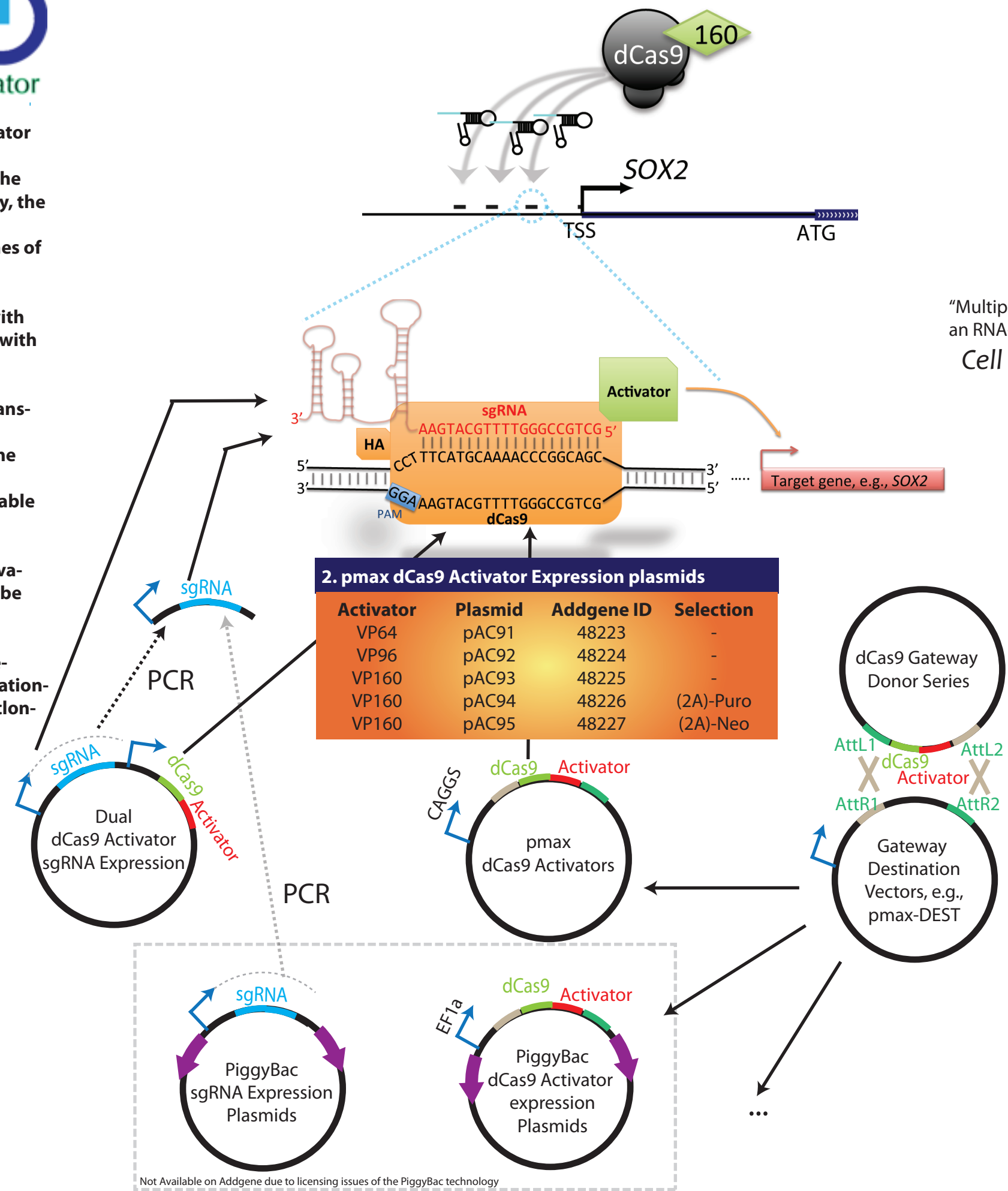
Activator	Plasmid	Addgene ID	Selection
VP64	pAC91	48223	-
VP96	pAC92	48224	-
VP160	pAC93	48225	-
VP160	pAC94	48226	(2A)-Puro
VP160	pAC95	48227	(2A)-Neo

### 3. dCas9 Activators Gateway Donors

Activator	Plasmid	Addgene ID
-	pAC84	48218
VP48	pAC1	48214
VP64	pAC147	48219
VP96	pAC148	48220
VP160	pAC149	48221

### 4. Gateway Destination vector

Promoter	Plasmid	Addgene ID
CAGGS	pAC90	48222



"Multiplexed activation of endogenous genes by CRISPR-on, an RNA-guided transcriptional activator system"  
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