All-in-one Tet-On Inducible Vectors

The Tet-On System

The Tet-On system uses tetracycline and it's derivatives to allow promoter activation. In this system, a tetR mutant was created by random mutagenesis. Several amino acids necessary for tetracycline-dependent repression have been mutated to reverse the phenotype of tetR, and create dependence on the presence of tetracycline for induction of gene expression, rather than repression. The ability to turn a gene on or off and to modulate it's expression has significantly impacted gene therapy approaches, its function in diverse setting makes it an important tool for basic biological research.

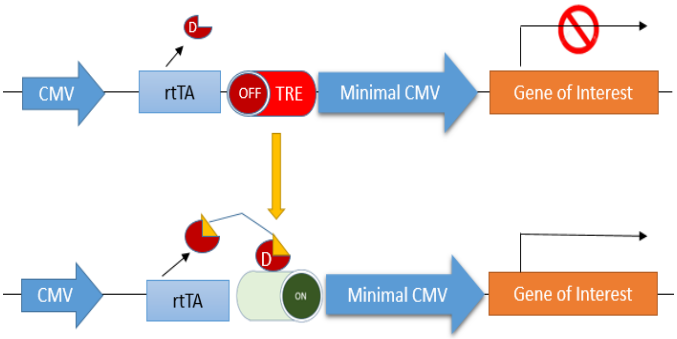

Fig 1. Working of a Tet-On System

OriGene's Tet-On System

OriGene's All-in-one Tet-ON system is a new and improved version of the original Tet-ON systems designed to significantly stimulate expression of the downstream gene of interest (GOI). It has a Tet-On 3G trans activator and a tightly regulated TRE promoter (PTRE3G) in one vector

The Tet-ON 3G trans activator consists of a modified bacterial Tet repressor (TetR) fused to three minimal VP16 activation domains to create a transcriptional activator protein. Our Tet-ON 3G trans activator contains mutations that significantly increase its sensitivity to Doxycycline (dox). The tightly regulated PTRE3G promoter consists of the conventional TRE sequence fused upstream of the minimal CMV promoter.

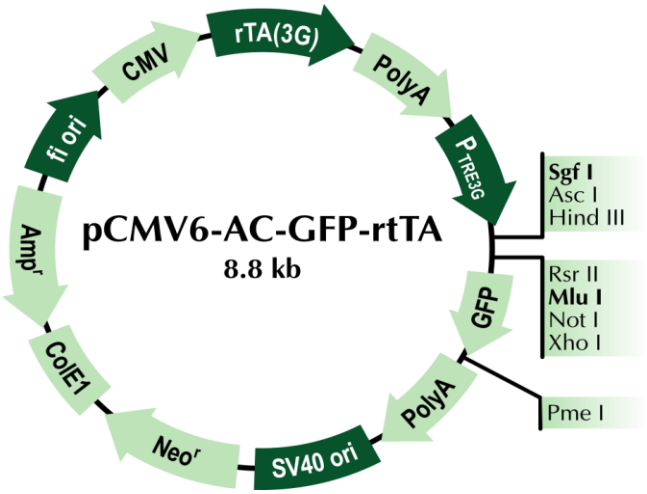

Fig 2 . PS100125 is the C-terminal tGFP tagged Tet-ON inducible vector consisting of Tet-ON 3G trans activator, tightest TRE promoter (PTRE3G), Multiple Cloning Site (MCS), and C-terminal turbo-GFP tag.

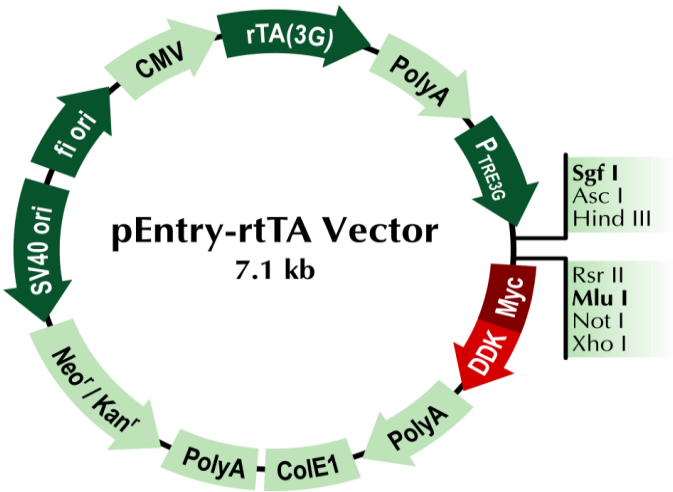

Fig 3 . PS100124 is the C-terminal Myc-DDK tagged Tet-ON inducible vector consisting of Tet-ON 3G trans activator, tightest TRE promoter (PTRE3G), Multiple Cloning Site (MCS), and C-terminal Myc-DDK tag.

Features of our Tet-on system:

1) High doxycycline sensitivity due to proprietary rTA cassette
2) High level of induction
3) Low background expression.
4) Tight regulation of target gene expression.

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Performance Data

GFP expression induced by Doxycycline:

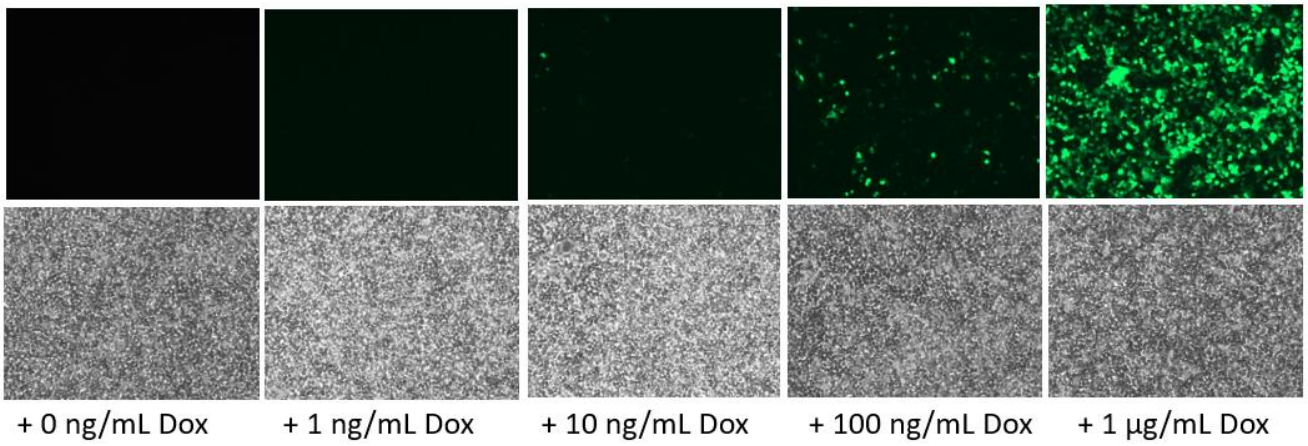

Fig 4 .GFP expression in HEK293T cells transfected with PS10025 plasmid DNA and treated with varied doxycycline (Dox) concentration for 2 days (original magnification, 10x)

Western Blot Analysis:

HEK293T cells were transfected PS100125 plasmid DNA and treated with increasing doxycycline (Dox) for 72 hrs. Untransfected (UT) and transfected cells were lysed and analyzed using Western blot with TurboGFP-specific antibody (TA150075, ORIGENE).

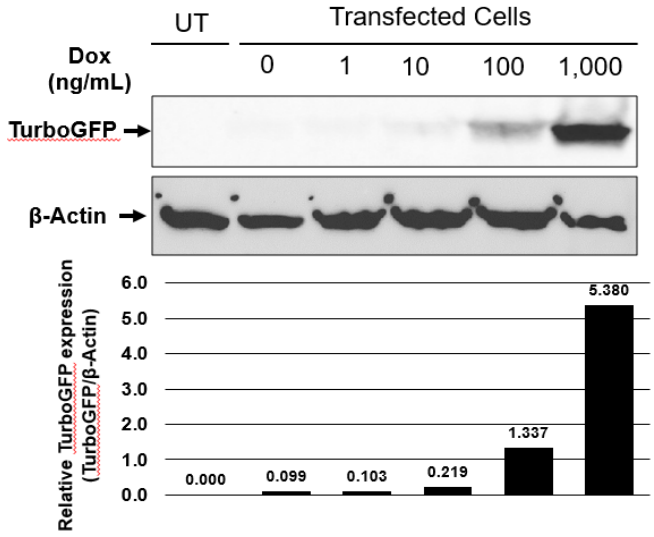

Fig 5 **Effects of doxycycline on expression of TurboGFP protein by Western blotting analysis.**

Order Information:

SKU	Description
PS100125	Turbo-GFP, Tet-ON 3G transactivator
PS100124	Myc-DDK tag, Tet-ON 3G transactivator