NEED TO PRECISELY CONTROL GENE EXPRESSION IN YOUR CELLS?

vectalys
The future is at hand
www.vectalys.com

The Tet-inducible system is the technology of choice to induce and control the expression of any gene of interest without background expression. With over 10 years of know-how in lentiviral vectors production, Vectalys offers a combination of highly efficient lentiviral particles and the Tet-On 3G technology to transduce any type of cells with inducible genes.

Vectalys offers two types of products according to your needs:

- Lentiviral vectors: highly purified and concentrated lentiviral vectors bringing your gene of interest under a Tet-inducible promoter.
- Cell line generation: customized cell lines with your gene of interest under a Tet-inducible promoter.

What are the advantages of the Tet-On 3G system?

1. The most efficient and precise tool to control gene expression

The Tet-On 3G technology is the most efficient and precise tool to control gene expression levels in your target cells without any basal expression. The level of expression of a gene of interest can be adapted by simply altering the concentration of doxycycline into your cell culture media. From a simple GFP expression to 50ng/ml of doxycycline induction, there is a 5 fold increase of GFP expression, showing that the Tet-On 3G system allows a very strong induced gene expression.

CHO cells transduced with Vectalys lentiviral vectors and the TET-On 3G system at MOI 80

Figure 1 : CHO cells were transduced with Vectalys lentiviral vectors carrying a fluorescent gene associated with Tet3G technology at MOI 80. Cells were incubated with an increasing concentration of doxycycline from 5ng/ml before analysis through a Macsquant VYB cytometer.

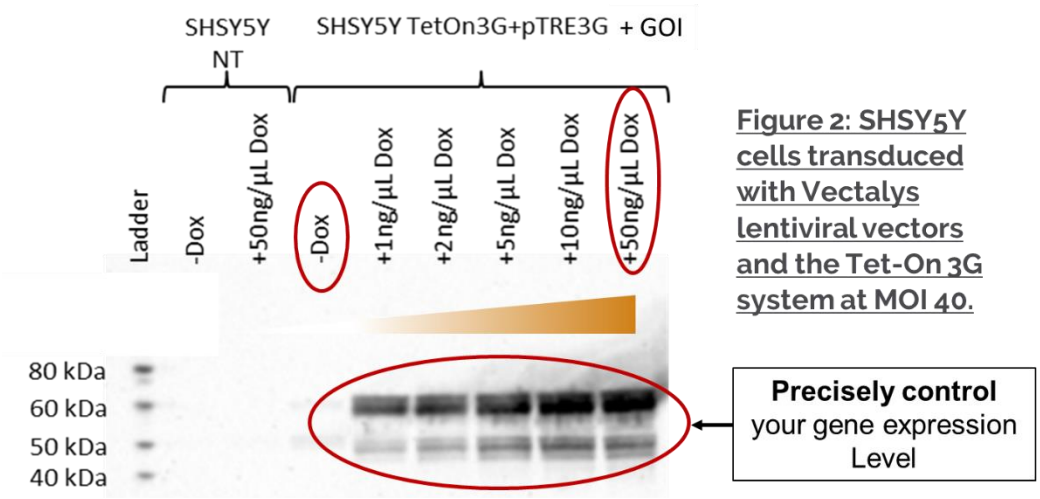


Figure 2: SHSY5Y cells transduced with Vectalys lentiviral vectors and the Tet-On 3G system at MOI 40.

Figure 2: This western blot shows that the Tet-On 3G system allows a gradient of expression of a protein by managing the dose of doxycycline applied to your cells.

2. A very strong induced and reversible expression

The Tet-On 3G technology allows a reversible expression of your gene of interest by simply removing the doxycycline of your cell culture media (Figure 3).

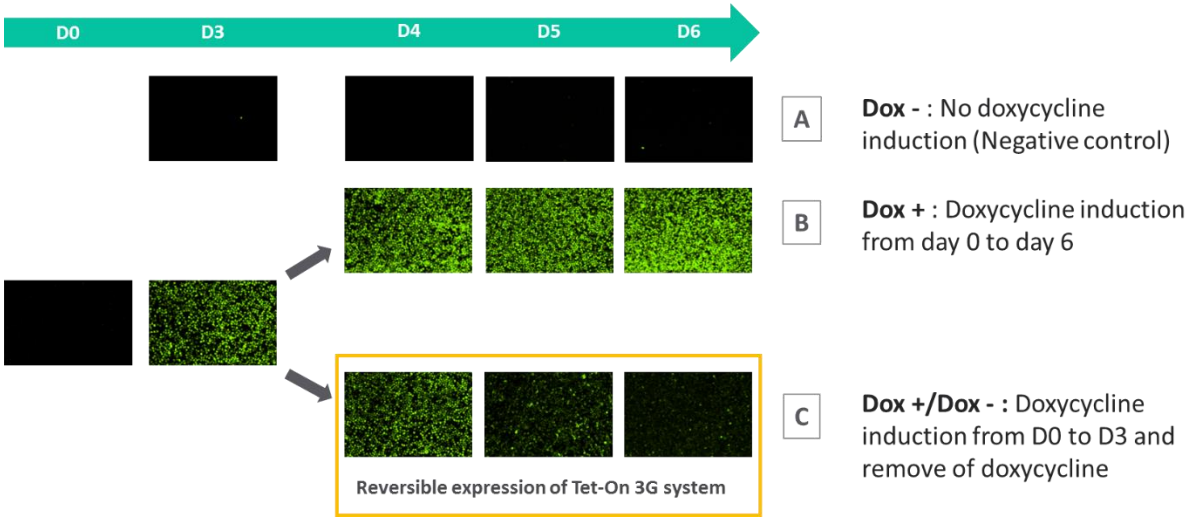
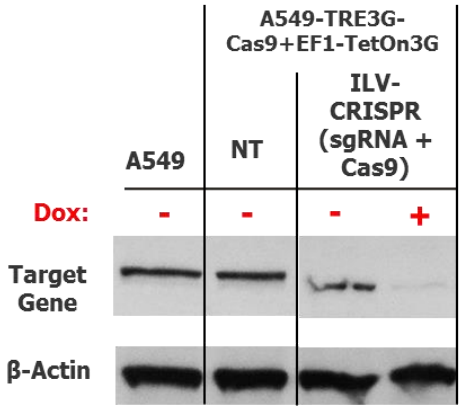


Figure 3: THP1 cells were transduced with a lentiviral vector batch carrying a ZsGreen fluorescent protein under a Tet-On 3G system (TRE3G.ZsGreen + EF1TetON). After the transduction, cells were incubated for 72h with doxycycline (From D0 to D3) to induce the expression of the ZsGreen protein. Then by simply removing the doxycycline from the cell culture media and following the ZsGreen extinction, we have shown (Figure 3C) that the Tet-On 3G system is reversible.

3. A highly efficient system to transiently express CRISPR-Cas9 and edit the genome.



A stable expression of CRISPR-Cas9 into cells of interest may lead to off-target activity, which results in unexpected genome modifications. For this reason, the expression of Cas9 under a Tet-On 3G promoter is an efficient solution to target your gene of interest once and with high specificity. This example shows the high efficiency of the Tet-On 3G system to induce Cas9 expression in presence of doxycycline and the efficiency of CRISPR-Cas9 technology to knock-out the targeted gene.

If you need more details about this offer or if you have any questions for your project, do not hesitate to contact us at tech@vectalys.com.

Vectalys Canal Biotech II, 3 rue des satellites, 31400 Toulouse - France
Tél. : +33 (0)5 61 28 70 75 - tech@vectalys.com