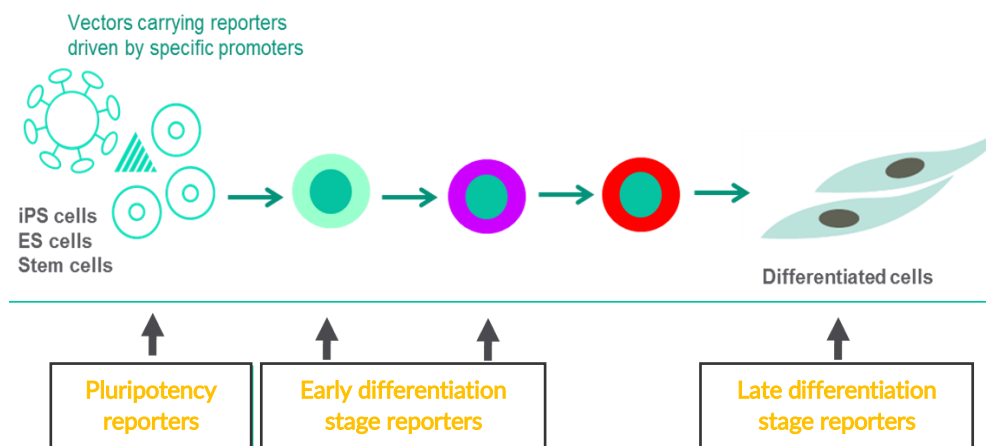


HOW TO FOLLOW THE CELL DIFFERENTIATION PROCESS?

The use of specific promoters allows the expression of a gene of interest under specific conditions. Discover the applications that our premade products allow, ideal for testing your future experiments with small quantities.

Tissue-specific promoters are ideal tools to follow the differentiation process of living cells (In Process Control)



[Click here](#) for an overview of cell and tissue specific promoters available.

Case study: *in vitro* monitoring of stem cell differentiation using specific promoters:

There are two main technologies commonly used by scientists for quality controls (QC) of differentiation process of a cell population from pluripotency to late differentiation stage:

- ▶ Immunostaining using specific biomarkers (IF) (duration 6H)

Issues: For each control, a sample of cells is recovered, cells are then fixed and stained with a specific antibody to reveal the differentiation step.

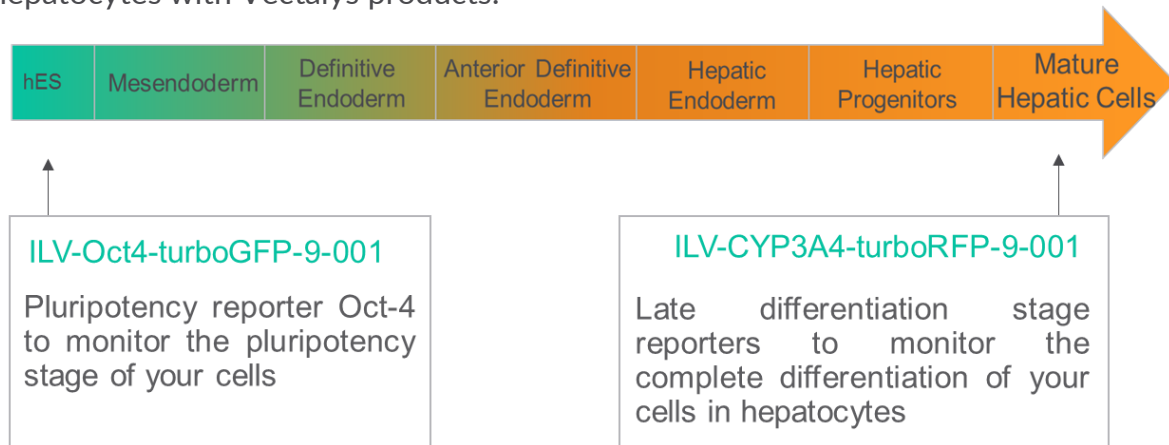
- ▶ RT-qPCR (duration 10H)

Issues: For each control, ARN is extracted from a sample of cells, ARN are retro-transcribed and a Q-PCR is made to analyze cell differentiation stages.

- ▶ **Our solution:** lentiviral vectors with fluorescent protein under specific promoter (duration 30min)

Benefits: In-Process Control (on living cells), one transduction only, time saving tool, no recovery nor fixation of cells.

Example of hepatocytes differentiation monitoring from pluripotency to mature hepatocytes with Vectalys products:

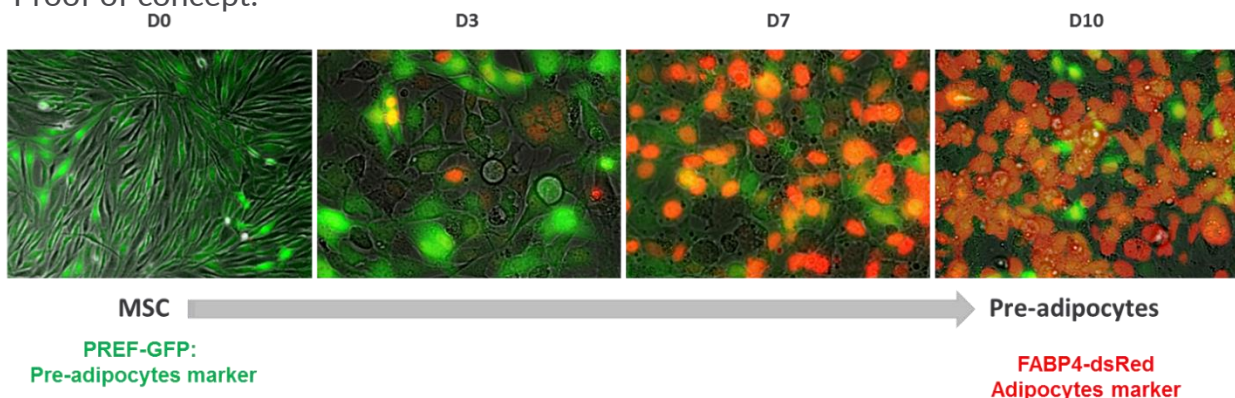


With these two products from Vectalys you can track cells differentiation step from hES to mature hepatic cells. In this case, cells will be fluorescent only when the differentiation stage you are monitoring is achieved (mature hepatic cells).

Benefits of lentiviral vectors :

- ▶ No fixation of cells
- ▶ One transduction only
- ▶ Duration ~ 30min
- ▶ In-Process Control
- ▶ On living cells

Proof of concept:



These data show that it is possible to follow the cell differentiation process in living cells by using a pre-adipocyte specific promoter and an adipocyte specific promoter.

- ▶ For an overview of cell and tissue specific promoters available, please [click here](#).
- ▶ To request a quote contact us at tech@flashtherapeutics.com.