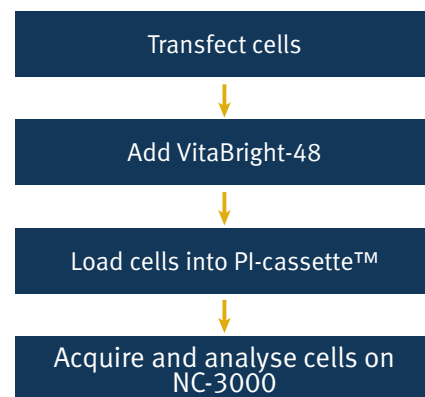


## NC-3000 GFP Transfection Efficiency Assay

– For easy, fast and objective measurement of transfection efficacy

Introduction and expression of foreign DNA into a eukaryotic cell (transfection) is widely used for studying gene regulation and function. It is often required to determine the transfection efficiency either for optimising transfection conditions or because the down-stream experimental set-up relies upon accurate determination of the transfection ratio. An easy way to determine the transfection efficiency is to use the gene encoding Green Fluorescent Protein (GFP) as a transfection reporter. The vector harbouring the gene of interest can be constructed so it also carries GFP either as a fusion or under control of its own promoter. Such a construct enables determination of transfection efficiency by simply determining the ratio of cells expressing GFP to the total cell number.

### NC-3000 GFP Transfection Efficiency Assay

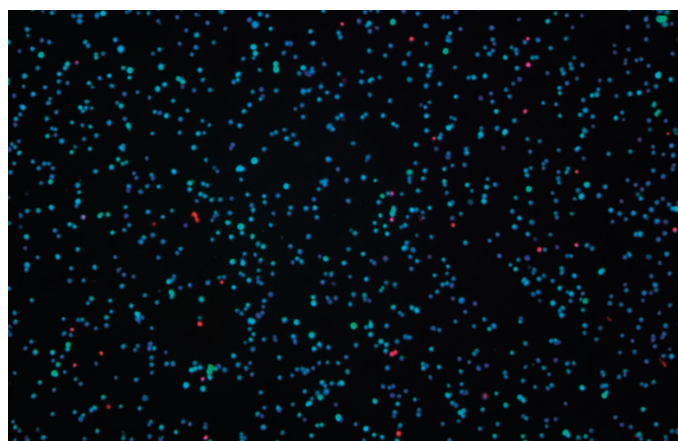
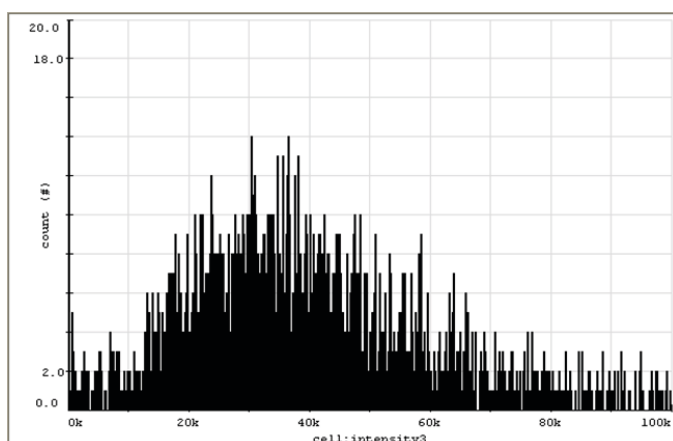
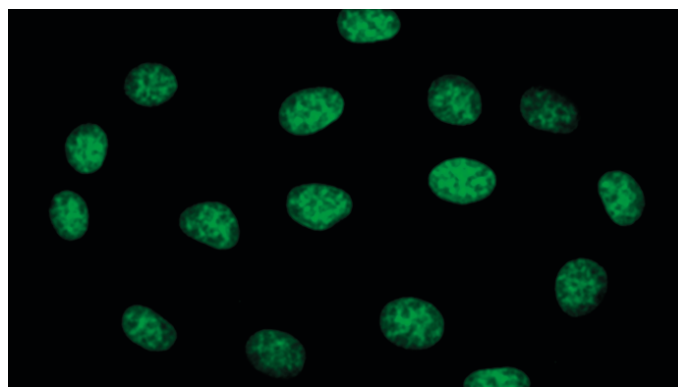


### Key benefits

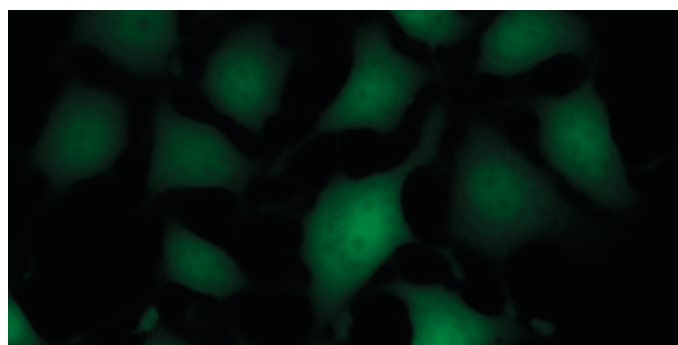
- Fast and easy-to-use assay for measuring transfection efficiency
- User friendly protocol with predefined settings
- Fully automated analysis procedure
- GFP intensity histogram displayed
- Objective analysis – standardized results
- Provides cell count and viability data
- Analysis time less than 45 seconds

## Principle

Using fluorescence microscopy and image analysis, the NC-3000 system provides easy determination of the transfection efficiency and viability. The concentrations of transfected cells, viable and nonviable cells are measured at the same time as well. A histogram showing the fluorescence intensity of all GFP expressing cells is displayed enabling the user to compare the profile across experiments.



#	Description	Results	Image
-	Transfection ratio[%]	27	GFP construct A MCF-7
	Viability [%]	97	
	Transfected viable cells [cells/mL]	3.42E5	
	Untransfected viable cells [cells/mL]	9.49E5	
	Transfected nonviable cells [cells/mL]	3.74E3	
	Viable cells [cells/mL]	1.29E6	
	Nonviable cells [cells/mL]	3.36E4	
	Total cell count [cells/mL]	1.33E6	
	GFP mean intensity	5.11E4	
	GFP standard deviation	3.33E4	
	GFP main number	2.20E4	



MCF-7 cells were transfected with GFP (Green Fluorescent Protein). 24 hours post transfection, cells were harvested, stained with VitaBright-48, loaded into a PI-Cassette™ and analysed using NC-3000. A histogram (upper left) shows the fluorescence intensity of the GFP transfected cells. The image of the transfected cells acquired by NC-3000 is shown to the upper right. Cells appearing green are GFP expressing cells, cells appearing red are nonviable cells (propidium iodide permeable cells), while cells appearing blue are nontransfected, viable cells. A result box shows information about transfection ratio, viability, cell counts and GFP intensity. To the lower right is a picture of MCF-7 cells expressing GFP. (40X magnification, obtained using an Olympus microscope).