

gWIZ β -Galactosidase Mammalian Expression Vector

PRODUCT SUMMARY

Cat. No: AMS.P010200

Description: gWiz vectors represent a series of plasmids that have been engineered to produce the highest levels of transgene expression in a wide range of mammalian cells and tissues. It contains a proprietary modified promoter followed by the intron A from the human cytomegalovirus (CMV) immediate early gene and a high-efficiency artificial transcription terminator. The expression vector is constructed in the context of a plasmid backbone extensively modified to achieve the enhanced levels of transgene expression in mammalian cells as well as high efficiency of plasmid production in *E. coli*.

Components: 25 μ g gWiz β -galactosidase plasmid in
25 μ l sterile TE buffer.

Storage: Store at -20°C .

Comments: gWiz is suitable for in vitro and in vivo gene expression studies and applications. Use Kanamycin as selection to grow the plasmid in *E. coli*.

INTRODUCTION

The CMV immediate early gene (IE) promoter/enhancer is the most widely used constitutive promoter for expressing high levels of transgene product in many mammalian cells and tissues. However, not all CMV IE gene promoter/enhancer-based expression vectors are created equal. Depending on the actual CMV IE gene sequences used and the context of the plasmid backbone upon which the expression cassette is constructed, the expression levels can vary as much as two orders of magnitude. The CMV IE promoter sequences contained in the gWiz vectors have been systemically analyzed and modified. The modifications include removing the sequences that are redundant and deleterious to the high levels of expression while retaining those sequences that are of high transcriptional potency. After coupling the modified promoter with a high-efficiency synthetic transcriptional terminator, the whole expression cassette is finally constructed on a plasmid backbone that has also been streamlined and modified to accommodate the high levels of expression in mammalian cells as well as high yield of plasmid production in *E. coli*. The resulting plasmid, gWiz

expression vector, is capable of fully unleashing the potential of the CMV promoter and giving the highest levels of expression possible both *in vitro* and *in vivo*.

USAGE

- For extremely high levels of transgene expression in mammalian cells and tissues.
- Can be used with the GenePORTER[®] 2 reagent (Cat. # T202007 or T202015) to transfect a wide variety of mammalian cells and tissues.

DETECTION OF THE EXPRESSED GENE

The level of β -galactosidase expression can be determined by a colorimetric assay as described by Jiin Felgner *et al.**. An immunohistochemical approach for β -galactosidase quantification has also been reported by E. Gussoni *et al.***

*Felgner, J.H. *et al.* (1994) Enhanced gene delivery and mechanism studies with a novel series of cationic lipid formulations. *J. Biol. Chem.* **269**, 2550-2561.

Gussoni, E. *et al.* (1996) A method to codetect introduced genes and their products in gene therapy protocols. *Nature Biotechnology* **14: 1012-1015.

RELATED PRODUCTS

Product	Cat. Nos.
gWiz [™] Blank	P000200
gWiz [™] CAT	P020200
gWiz [™] Luciferase	P030200
gWiz [™] GFP	P040400
gWiz [™] Secreted AP	P050200

GenePORTER [®] 2 Transfection Reagent	
75 transfections (0.75 ml)	T202007
150 transfections (1.5 ml)	T202015

Enhanced β -Galactosidase Assay Kit (CPRG)	
	A10100K

AMSBIO | www.amsbio.com | info@amsbio.com

AMSBIO LLC
USA & Canada

1035 Cambridge Street,
Cambridge, MA 02141
T: +1 (617) 945-5033 or
T: +1 (800) 987-0985
F: +1 (617) 945-8218

AMSBIO Europe BV
EU

Berenkoog 41,
1822 BH Alkmaar,
Netherlands
T: +31 (0) 72 8080244
F: +31 (0) 72 8080142

AMS Biotechnology (Europe) Ltd
UK & Rest of the World

184 Park Drive, Milton Park
Abingdon OX14 4SE
T: +44 (0) 1235 828 200
F: +44 (0) 1235 820 482

AMS Biotechnology (Europe) Ltd
Switzerland

Via Lisano 3,
(CP.683)
CH-6900 Massagno
T: +41 (0) 91 604 55 22
F: +41 (0) 91 605 17 85

AMSBIO Europe BV
Deutschland

T: +49 (0) 69 779099
F: +49 (0) 69 13376880