

## pVectOZ-LacZ ( $\beta$ -Galactosidase Expression Vector)

### Description

The pVectOZ-LacZ vector has been created to produce the highest levels of  $\beta$ -Galactosidase expression in a broad range of mammalian cells and tissues. It contains a proprietary modified human cytomegalovirus (CMV) promoter followed by a specific intron, enhancer and a terminator. The expression vector is engineered in an optimized plasmid backbone to achieve the highest levels of transgene expression in mammalian cells and high copy number production in *Escherichia coli*.

### Kit contents

Ref. #PL00130  
100 $\mu$ g pVectOZ-LacZ (encoding for  $\beta$ -Galactosidase) plasmid in 100 $\mu$ l sterile TE buffer.

### Storage

Store at -20°C.

### Selection Marker

**Kanamycin** is the selection gene included for producing the plasmid in *Escherichia coli*.

### Applications

pVectOZ-LacZ ( $\beta$ -Galactosidase) vector is suitable for all transfection applications (in vitro & in vivo).

**Presentation.** The transgene expression level depends mainly on the promoter, enhancer, terminator and plasmid backbone. The pVectOZ-LacZ expression cassette was designed to express very high levels of transgene product in many mammalian cells and tissues. This vector has been modified to eliminate sequences affecting transgene expression levels while optimizing those critical for high levels of expression. The final expression cassette accommodates the high levels of transgene expression in mammalian cells as well as high yield of plasmid production in *Escherichia coli*. The resulting plasmid is the ideal vector to reach high levels of expression in vitro and in vivo.

**Use.** For high levels of transgene expression in mammalian cells and tissues. For optimal results, this vector can be used with all OZ Biosciences transfection reagents to transfect a wide variety of mammalian cells and tissues.

### $\beta$ -Galactosidase detection

LacZ is one of the most frequently used reporter gene in transfection experiments because of the gene product specific properties. Indeed, the LacZ encoded protein,  $\beta$ -galactosidase, is very stable, resistant to proteolytic degradation and easily tested. The levels of active  $\beta$ -galactosidase expression can be quickly measured by colorimetric assays:

- CPRG (Chlorophenol red- $\beta$ -D-galactopyranoside) assay kit (catalog # GC10002)
- ONPG (o-nitrophenyl- $\beta$ -D-galactopyranoside) assay kit (catalog # GO10001)

The levels of active  $\beta$ -galactosidase expression can also be detected by histochemistry:

- X-gal staining kit (catalog # GX10003). It allows to visualize  $\beta$ -gal expression, through hydrolysis of X-Gal which yields a blue precipitate. Thus, transfected cells appear blue and can be visualized by microscopy.

### References

1. Felgner, J. et al. (1994). *J. Biol. Chem.* **269**: 2550.
2. Gussoni, E. et al. (1996). *Nature Biotech.* **14**: 1012.
3. Liu, M. et al. (2003). *Methods Mol Biol.* **235**: 289-96.
4. Nazarenko, DA. et al. (2001). *Biotechniques*, **4**: 776.
5. Tanahashi, H. et al. (2000). *Anal Biochem.* **279**: 122.

### Contact Us

Please, feel free to contact us for all complementary information and remember to visit our website ([www.ozbiosciences.com](http://www.ozbiosciences.com)) to stay informed on the latest breakthrough technologies and updates on our complete product list.

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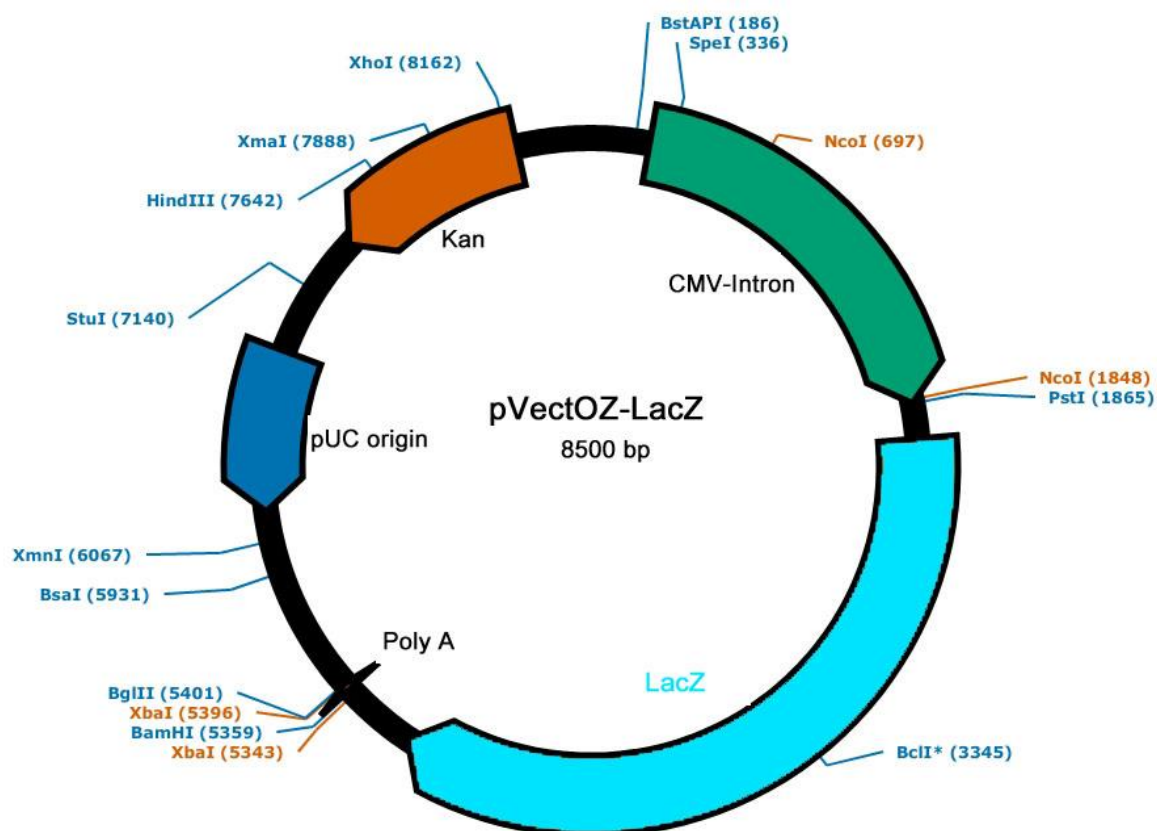
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## Plasmid Map



## Related Products

| Description                                | Reference | Description                      | Reference |
|--------------------------------------------|-----------|----------------------------------|-----------|
| <b>Magnetofection Technology</b>           |           | <b>Gene &amp; Protein Tools</b>  |           |
| Mega Magnetic Plate                        | MF14000   | Bradford – Protein Assay Kit     | BA00100   |
| Super Magnetic Plate                       | MF10000   | GeneBlaster selection kit        | GB20010   |
| Magnetic Plate 96-magnets                  | MF10096   | β-Galactosidase (ONPG) assay kit | GO10001   |
| PolyMag 1 mL (for all nucleic acids)       | PN31000   | β-Galactosidase (CPRG) assay kit | GC10002   |
| PolyMag Neo 1 mL (for all nucleic acids)   | PG61000   | X-Gal Staining Kit               | GX10003   |
| CombiMag 1 mL (boost transfection reagent) | CM21000   | <b>Plasmids</b>                  |           |
| SilenceMag 500μL (for siRNA applications)  | SM10500   | pVectOZ-CAT 25μg                 | PL00010   |
| NeuroMag 1 mL (for neuron transfection)    | NM51000   | pVectOZ-GFP 25μg                 | PL00020   |
| <b>Lipofection (lipid-based reagents)</b>  |           | pVectOZ-LacZ 25μg                | PL00030   |
| DreamFect Gold Transfection reagent 1mL    | DG81000   | pVectOZ-Luc 25μg                 | PL00040   |
| DreamFect Transfection reagent 1mL         | DF41000   | pVectOZ-SEAP 25μg                | PL00050   |
| Lullaby siRNA Transfection reagent 1mL     | LL71000   | pVectOZ-CAT 100μg                | PL00110   |
| VeroFect Transfection Reagent 1mL          | VF61000   | pVectOZ-GFP 100μg                | PL00120   |
| FlyFectin Transfection Reagent 1mL         | FF51000   | pVectOZ-Luc 100μg                | PL00140   |
|                                            |           | pVectOZ-SEAP 100μg               | PL00150   |

