



## Product Sheet

# pEF1 $\alpha$ <sub>lux</sub> Vector

### Intended Use

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

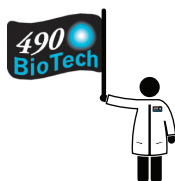
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### Description

The pEF1 $\alpha$ <sub>lux</sub> vector encodes a fully human expression-optimized synthetic luciferase reporter gene cassette based on the bacterial luciferase (*Photobacterium luminescens*) operon under the control of a strong human elongation factor 1 (EF1 $\alpha$ ) promoter for constitutive autoluminescent expression across a wide range of mammalian cell types.

### This vector contains the following features:

- Human-optimized *lux* reporter cassette for expression in mammalian cells
- Inter-gene linker regions for coordinated cassette expression
- EF1 $\alpha$  promoter for high translational expression
- Neomycin resistance gene for mammalian cell selection of the plasmid
- Ampicillin resistance gene for bacterial selection of the plasmid

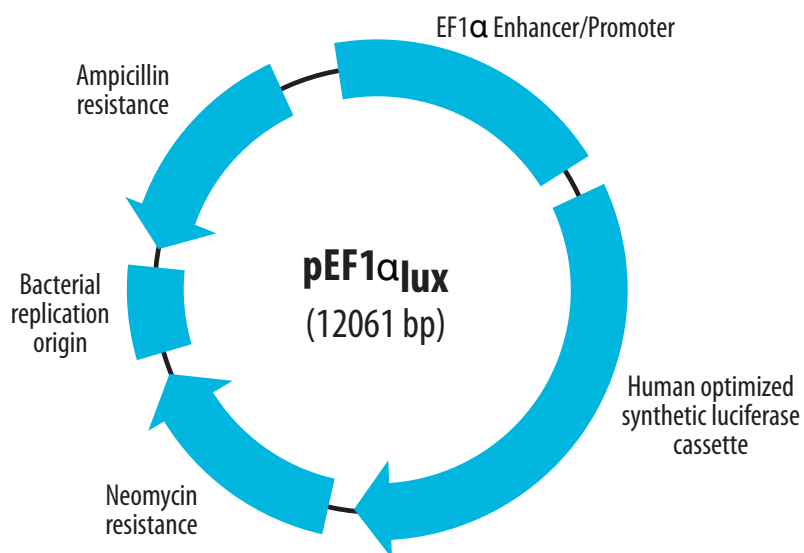
**Storage Buffer:** The pEF1 $\alpha$ <sub>lux</sub> vector is supplied either in 1x TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0) or in a lyophilized (dried) format. If received lyophilized, reconstitute by centrifuging at 6,000 x g for 1 minute to pellet the DNA to the bottom of the tube, adding 50  $\mu$ l nuclease-free water or TE buffer, vortexing for 1 minute, and incubating at room temperature for 5 minutes (If necessary, heat at 50° C for 5-10 minutes to fully dissolve the DNA into solution). The vial can then be briefly vortexed and pulse centrifuged to collect the re-suspended DNA to the bottom of the tube and the reconstituted DNA will be ready for use.

**Storage Conditions:** Store at -20° C. Avoid multiple freeze-thaw cycles and exposure to frequent temperature changes. Temperature fluctuations can greatly alter product stability.

**Usage Note:** Concentration gradients may form in frozen products and should be dispersed upon thawing. Mix well prior to use.

### pEF1 $\alpha$ <sub>lux</sub> Feature List:

EF1 $\alpha$ promoter	6 - 1193 bp
Human optimized synthetic luciferase cassette	1199 - 7903 bp
Neomycin resistance region	8678 - 10042 bp
Bacterial replication origin	10266 - 10948 bp
Ampicillin resistance region	11046 - 11705 bp



**Restrictions on Modification:** Researchers shall have no right to modify or otherwise create variations of the nucleotide sequence of the luciferase cassette genes except that researchers may: (1) create fused gene sequences provided that the coding sequence of the resulting luciferase cassette has no more than four deoxynucleotides missing at the affected terminus compared to the intact luciferase cassette sequence, and (2) insert and remove nucleic acid sequences in splicing research predicated on the inactivation or reconstruction of the luminescence of the encoded luciferase cassette. No other use or transfer of this product or derivatives is authorized without the prior express written consent of 490 BioTech.

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