Vector pcDNA3.1 Containing β-Lactamase Fused to Ebolavirus, Zaire VP40 (Bla-VP40)

Catalog No. NR-19813

For research use only. Not for human use.

Manufacturer: BEI Resources

Product Description: The viral matrix protein VP40 gene from ebolavirus (EBOV), Zaire was synthesized by multiple rounds of overlapping PCR based on the EBOV, Zaire genome sequence (GenBank accession L11365). The β-lactamase gene was PCR amplified from the pcDNA3.1 vector (Invitrogen™) and fused to the N-terminal of VP40 by a short linker sequence (GGGGSGG) to create a modified β-lactamase-VP40 fusion protein (Bla-VP40) which was subcloned into pcDNA3.1. The modified β-lactamase lacks the N-terminal 24 amino acid secretion signal and His24 was substituted by Asp to create an optimal Kozak consensus sequence. The plasmid was produced in Escherichia coli S-alpha F′I′ cells (New England Biolabs®) and extracted using a QIAGEN® plasmid DNA extraction kit.

VP40 drives the budding of filovirus particles. 293T cells co-transfected with NR-19813 and the EBOV glycoprotein (NR-19814) or the Marburg virus (MARV) glycoprotein (NR-19815) produce EBOV or MARV virus-like particles (VLPs), respectively. Fusion of these VLPs with target cells can be detected by monitoring β-lactamase activity using a fluorogenic substrate, permitting study of the cell entry steps of these highly pathogenic viruses without the need for BSL-4 containment.

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Biosafety Level: 1


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References:

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