

**HRE-Luciferase Plasmid**

Catalog number: 12552

Unit size: 1 ug

Component	Storage	Amount (Cat No. 12552)
HRE-Luciferase Plasmid	Freeze (< -15 °C)	1 ug

**OVERVIEW**

HRE-Luciferase Plasmid is a transcriptional reporter construct used to monitor activation of hypoxia-inducible factor (HIF) signaling pathways. The plasmid contains hypoxia response element (HRE) sequences located upstream of a promoter that regulates expression of a luciferase reporter gene. Under reduced oxygen conditions, HIF transcription factors can bind to the HRE sequences and promote transcription of the luciferase gene. Luciferase expression can then be measured using standard luciferase assay reagents that produce a luminescent signal in the presence of luciferin substrate. This reporter system is commonly used in cell-based assays to evaluate HIF-dependent transcription and to study cellular responses to hypoxic conditions. Changes in luminescence intensity reflect changes in transcriptional activity associated with HRE-mediated gene regulation.

**AT A GLANCE**
**Specifications:**

Concentration: 0.02 µg/µL in TE

Volume: 50 µL

Backbone size: 5820 bp

Vector type: Cloning vector

Promoter: Mini-TK

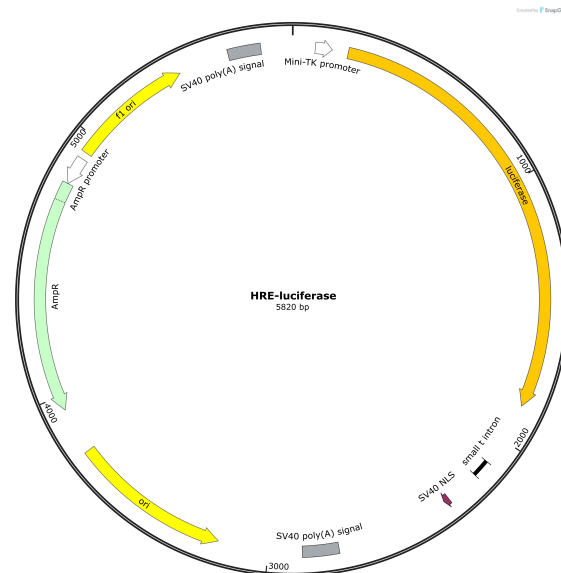
Bacterial Resistance(s): Ampicillin

Copy number: High Copy

**SAMPLE EXPERIMENTAL PROTOCOL**

1. Plate mammalian cells in appropriate culture medium and allow them to reach the recommended confluency (typically 60–80%) prior to transfection or transduction.
2. Introduce the plasmid into cells using a suitable transfection reagent according to the manufacturer's instructions for the chosen method.  
AAT Bioquest offers a range of Transfectamine reagents that can be used for plasmid delivery into mammalian cells.
3. Incubate cells under standard culture conditions to allow reporter expression. For constructs containing a selectable marker (e.g., neomycin resistance), apply the appropriate antibiotic to enrich for successfully transfected or transduced cells.
4. Measure luciferase activity using a compatible luciferase assay reagent and a luminometer or plate reader capable of detecting bioluminescence.

**Note:** Avoid multiple freeze-thaw cycles and exposure to frequent temperature changes. Concentration gradients may form in frozen products and should be dispersed upon thawing. Mix well prior to use.

**EXAMPLE DATA ANALYSIS AND FIGURES**


**Figure 1.** Schematic map of the HRE-Luciferase reporter plasmid (5820 bp).

**DISCLAIMER**

AAT Bioquest provides high-quality reagents and materials for research use only. For proper handling of potentially hazardous chemicals, please consult the Safety Data Sheet (SDS) provided for the product. Chemical analysis and/or reverse engineering of any kit or its components is strictly prohibited without written permission from AAT Bioquest. Please call 408-733-1055 or email [info@aatbio.com](mailto:info@aatbio.com) if you have any questions.