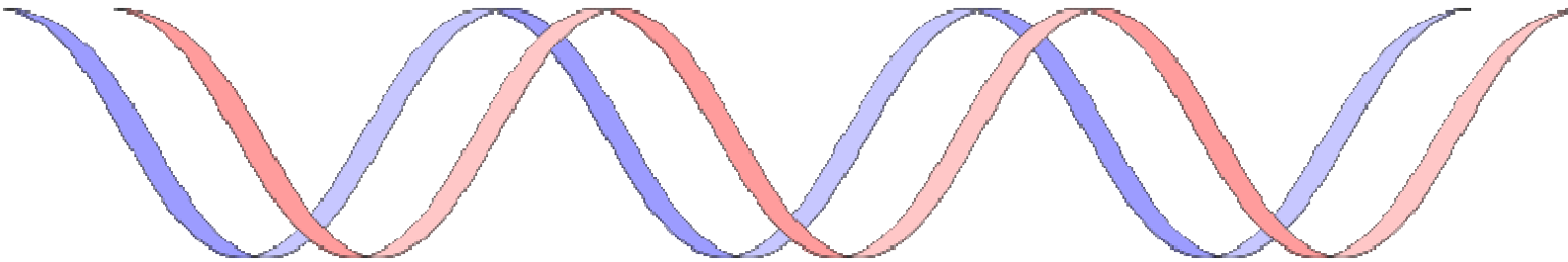


GeneBlaster™ Emerald

# INSTRUCTION MANUAL

**GeneBlaster**



**OZBIOSCIENCES**  
The art of delivery systems

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# GeneBlaster™ Emerald Kit

## Instruction Manual

GeneBlaster™ Emerald is a new formulation of additives that significantly enhance and prolong the gene expression level obtained by *in vitro* transfection in primary neurons.

### List of GeneBlaster Kits

Catalog Number	Description	Volume
GB20010	GeneBlaster Selection Kit <sup>1</sup>	4 x 1.5 mL
GB20011	GeneBlaster Ruby	3 x 1.5 mL
GB20012	GeneBlaster Sapphire	3 x 1.5 mL
GB20013	GeneBlaster Topaz	3 x 1.5 mL
GB20014	GeneBlaster Emerald	3 x 1.5 mL

<sup>1</sup> Contain 1 vial of each GeneBlaster reagent (Ruby, Sapphire, Topaz & Emerald)

Use the content of the table above to determine the appropriate catalog number for your needs. You can order these products by contacting us. For all other supplementary information, do not hesitate to contact our dedicated technical support ([tech@ozbiosciences.com](mailto:tech@ozbiosciences.com)).

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# 1. Technology

## 1.1. Description

Congratulations on your purchase of the **GeneBlaster** Emerald!

The **GeneBlaster** Emerald is the latest formulation of additives that significantly improve the number of transfected neurons and the gene expression level obtained with any viral and non-viral gene delivery systems such as Magnetofection™ (NeuroMag or CombiMag) or DreamFect™ Gold transfection reagents. It is suitable with all commercially available transfection reagents. The application of the GeneBlaster Emerald is specific to primary neurons. GeneBlaster Emerald is extremely easy to use: simply add the appropriate volume to your culture medium and boost neuronal transfection efficiency.

- Rapid and easy to use
- Highest gene expression in primary neurons
- Prolong in vitro gene expression
- Compatible with all transfection reagents including Magnetofection™.
- Effective for transient transfection and long lasting transfection
- Economical

## 1.2. Available Kits

OZ Biosciences offers five types of ready-to-use GeneBlaster Kits:

1. **GeneBlaster Ruby** is a mixture of chemicals that has been developed intentionally for adherent cells. The dimension of the response is also cell type depend.
2. **GeneBlaster Sapphire** is another combination of chemicals developed for adherent cells. The response extend is also cell type depend and complement well the GeneBlaster Ruby.
3. **GeneBlaster Topaz** is a mixture of chemicals that has been developed purposely for suspension cells especially hematopoietic cell lines. However, other cell types appear to respond also very well.
4. **GeneBlaster Selection Kit**. This kit is a convenient assortment of the three GeneBlaster reagents (Ruby, Sapphire and Topaz) that permit to cover a large number of suspension and adherent cells.
5. **GeneBlaster Emerald** is the latest additives specifically designed and developed to boost primary neurons transfection efficiency.

## 1.3. Kit Contents

Each vial of the GeneBlaster Emerald Reagent (1.5 mL) is provided at a 25X concentration and is sufficient for 75 transfections using 0.5 mL transfection volume. The Kit contains three vials of reagents and allows performing at least 225 assays.

Description	Vials	Volume	Tube color
GeneBlaster Emerald	3	3 x 1.5 mL	3 green

### Stability and Storage

Storage Upon receipt and for long-term use, store all reagent tubes at -20°C. GeneBlaster Emerald is stable for at least one year at -20°C.

Shipping condition The GeneBlaster Kits are shipped at room temperature.

## 2. Applications

GeneBlaster Emerald helps to achieve higher and longer levels of transgene expression in primary neurons. Since the GeneBlaster Emerald reagent is composed of additives; they could activate neurons for the first 24 hours. Thereafter, the reagent is eliminated by the cells within 24h (see §3.3 Important remarks) and consequently, do not affect cellular toxicity.

The level of gene expression enhancement and persistence mediated by the GeneBlaster Emerald reagent might be neuron type dependent. This formulation has been successfully tested on primary Hippocampal and Cortical neurons from rat embryos. Likewise, these formulations have successfully trans-activated a variety of gene expression under the control of various promoters (CMV, SV40, Ubiquitin, HIV LTR, EF1a, etc.). If a particular promoter is not listed below, this does not mean that GeneBlaster Kits is not going to work. An updated list of responsive promoters is available on our website: [www.ozbiosciences.com](http://www.ozbiosciences.com)

## 3. Protocol

### 3.1. General Considerations

- Gene Blaster Emerald should be stored at -20°C, bring it up to room temperature. Briefly vortex the reagent before each use.
- Dilute the GeneBlaster Emerald reagent 25 times directly in the culture medium.

The instructions given below represent sample protocols that were applied successfully with different neurons. They can be used as guidelines to achieve very high gene expression level with minimal times. Optimal conditions do vary from cell culture to cell culture, promoter to promoter and the final dilution of the GeneBlaster Reagents might have to be adjusted to achieve best results. Therefore, we advise you to optimize few trans-activation parameters (concentration, incubation time, medium change...) if necessary.

### 3.2. General Protocol

GeneBlaster Emerald is a life compatible-non cytotoxic reagent designed for enhancing neuron transfection efficiency. It is recommended to dilute Emerald Reagent in the culture medium one hour before your transfection experiment. Depending on the neuron type and the cell culture density, dilution might be optimized in order to gain the best augmentation efficiency. No Medium changes is required after stimulation, moreover, GeneBlaster Emerald is particularly suitable with NeuroMag transfection reagents which neither needs medium change.

1. Bring GeneBlaster Emerald at room temperature before use it.
2. Dilute Emerald reagent 25 times in the culture medium, one hour before transfection experiment. Gently, rock the plate to ensure proper dilution.
3. Incubate one hour at 37°C.
4. Prepare the DNA/transfection reagent complexes according to the manufacturer's instruction or the viral titers as standard. To gain the best efficiency in neuron transfection we recommend using NeuroMag transfection reagent in association with GeneBlaster Emerald.
5. Add the complexes or viruses onto the cells growing in serum-free or serum-containing medium as standard culture conditions or as suggested by the manufacturer's protocol.
6. Cultivate the cells under standard conditions until evaluation of gene expression. The gene expression analysis can be monitored and assayed 24 to 72 hours following transfection or infection. This depends on the neuron type, reporter gene and promoter activity.

### 3.3. Important Remarks

#### For all GeneBlaster Kits

Although the team of OZ Biosciences has carefully designed and optimized the GeneBlaster Emerald formulation for a number of cells, additional adjustment and optimization might be required for different cell density to avoid undesired effect and to enhance gene expression level after transfection or infection. We advise testing various dilutions of the GeneBlaster from 12.5X to 100X dilutions to attain the best results.

## 4. Related Products

Description
<b>MAGNETOFECTION TECHNOLOGY</b>
Super Magnetic Plate ( <i>standard size for all cell culture support</i> )
Mega Magnetic plate ( <i>mega size to hold 4 culture dishes at one time</i> )
<b>Transfection reagents:</b>
PolyMag Neo ( <i>for all nucleic acids</i> )
SilenceMag ( <i>for siRNA application</i> )
NeuroMag ( <i>dedicated for neurons</i> )
<b>Transfection enhancer:</b>
CombiMag ( <i>to improve any transfection reagent efficiency</i> )
<b>Viral Transduction enhancers:</b>
Viro-MICST ( <i>to optimize viral transduction and purification</i> )
ViroMag ( <i>to optimize viral transduction</i> )
ViroMag R/L ( <i>specific for retrovirus and Lentivirus</i> )
AdenoMag ( <i>for Adeno viruses</i> )
<b>LIPOFECTION TECHNOLOGY (LIPID-BASED)</b>
Lullaby ( <i>siRNA transfection reagent</i> )
DreamFect Gold ( <i>Transfection reagent for all types of nucleic acids</i> )
Ecotransfect ( <i>Economical reagent for routine transfection</i> )
FlyFectin ( <i>for Insect cells</i> )
VeroFect ( <i>for Vero cells</i> )
<b>3D TRANSFECTION TECHNOLOGY</b>
3Dfect ( <i>for scaffolds culture</i> )
3DfectIN ( <i>for hydrogels culture</i> )
<b>RECOMBINANT PROTEIN PRODUCTION</b>
HYPE-5 Transfection Kit ( <i>for <b>High Yield Protein Expression</b></i> )
<b>PROTEIN DELIVERY SYSTEMS</b>
Ab-DeliverIN ( <i>delivery reagent for antibodies</i> )
Pro-DeliverIN ( <i>delivery reagent for protein in vivo and in vitro</i> )
<b>ASSAY KITS</b>
Bradford – Protein Assay Kit
β-Galactosidase assay kits (CPRG/ONPG)
X-Gal Staining Kit
<b>BIOCHEMICALS</b>
D-Luciferin, K <sup>+</sup> and Na <sup>+</sup> 1g
G-418, Sulfate 1g
X-Gal powder 1g

Our dedicated and specialized technical support group will be pleased to answer any of your request and to assist you in your experiments. Do not hesitate to contact us for all complementary information and remember to visit our website in order to stay inform on our last breakthrough technologies and updated on our complete product list. <http://www.ozbiosciences.com>

# Purchaser Notification

## Limited License

The purchase of the **GeneBlaster** Kit grants the purchaser a non-transferable, non-exclusive license to use the kit and/or its separate and included components (as listed in section 1, Kit Contents). This reagent is intended **for internal research only** by the buyer. Such use is limited to the use described in the product manual. In addition, research only use means that this kit and all of its contents are excluded, without limitation, from resale, repackaging, or use for the making or selling of any commercial product or service without the written approval of OZ Biosciences.

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## Product Use Limitations

The **GeneBlaster** Kit and all of its components are developed, designed, intended, and sold for research use only. They are not to be used for human diagnostic or included/used in any drug intended for human use. All care and attention should be exercised in the handling of the kit components by following proper research laboratory practices.

For more information, or for any comments on the terms and conditions of this License, please contact:

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