



Product Information Sheet for HRP-12455

Human Immunodeficiency Virus Type 1 (HIV-1) Non-Infectious Molecular Clone NL4-3 Gag-iGFP ΔEnv

Catalog No. HRP-12455

For research use only. Not for use in humans.

Contributor:

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Manufacturer:

NIH HIV Reagent Program

Product Description:

HRP-12455 is a full-length non-infectious HIV-1 NL4-3 Gag-iGFP Env-deficient molecular clone derived from HIV-1 NL4-3 infectious molecular clone pNL4-3 (available as ARP-114) in a [pUC18](#) backbone. This plasmid carries green fluorescent protein (GFP) inserted into the Gag protein between the MA and CA domains of Gag, with HIV-1 protease cleavage sites created to flank the GFP insertion. A frameshift mutation (restriction site NdeI) was also introduced to disrupt the *env* open reading frame making this clone effectively *env* null. The ampicillin resistance gene, *bla*, provides transformant selection through ampicillin resistance in *Escherichia coli* (*E. coli*). The plasmid size is approximately 15,600 base pairs.^{1,2,3} The plasmid sequence and map are provided on the NIH HIV Reagent Program webpage.

This plasmid may be used to generate fluorescently labeled HIV-1 particles and may be pseudotyped by co-transfection with Env expression plasmids or used as a negative control for HIV-1 Gag-iGFP. Key applications include flow cytometry, fluorescence microscopy, monitoring cell-to-cell transmission of HIV, single particle imaging, and single particle fusion assays.

Material Provided:

Each vial contains plasmid DNA in TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0). The DNA concentration and volume provided are shown on the Certificate of Analysis. The vial should be centrifuged prior to opening. Note: The contents of the vial should be used to transform the plasmid in *E. coli* prior to mammalian expression.

Packaging/Storage:

HRP-12455 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -80°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH HIV Reagent Program, NIAID, NIH: Human Immunodeficiency Virus Type 1 (HIV-1) Non-Infectious Molecular Clone NL4-3 Gag-iGFP ΔEnv, HRP-12455, contributed by Dr. Benjamin K. Chen."

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the NIH HIV Reagent Program Material Transfer Agreement (MTA). The MTA is available on our Web site at www.hivreagentprogram.org.

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NIH HIV Reagent Program

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References:

1. Chen, P., et al. "Predominant Mode of Human Immunodeficiency Virus Transfer Between T Cells is Mediated by Sustained Env-Dependent Neutralization-Resistant Virological Synapses." J. Virol. 81 (2007): 12582-12595. PubMed: 17728240.
2. Hübner, W., et al. "Sequence of Human Immunodeficiency Virus Type 1 (HIV-1) Gag Localization and Oligomerization Monitored with Live Confocal Imaging of a Replication-Competent Fluorescently Tagged HIV-1." J. Virol. 81 (2007): 12596-12607. PubMed: 17728233.
3. Hübner, W., et al. "Quantitative 3D Video Microscopy of HIV Transfer Across T Cell Virological Synapses." Science 323 (2009): 1743-1747. PubMed: 19325119.

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