

## **HIV-1 IN Mutant in a Single Round Vector**

### **Summary**

The National Cancer Institute (NCI) seeks potential non-exclusive licensees for a collection of mutated single-round vectors for testing of potential Integrase Strand Transfer Inhibitor (INSTI) and reverse transcriptase (RT) inhibitor drugs.

### **NIH Reference Number**

E-114-2021

### **Product Type**

- Research Tools

### **Keywords**

- Single-Round Vectors, Integrase Strand Transfer Inhibitors, INSTIs, Reverse Transcriptase, RT, Anti-HIV Drugs, HIV, pNL4.3, Smith, Hughes

### **Collaboration Opportunity**

This invention is available for licensing.

### **Contact**

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### **Description of Technology**

Antiretroviral therapy (ART) has changed the prognosis of HIV-1 infection to a chronic illness that, in most cases, can be managed or controlled. Integrase strand transfer inhibitors (INSTIs) and reverse transcription inhibitors are essential components of ART drug cocktails. In compliant individuals, ART has been found to block viral replication completely. Additionally, blocking viral replication can prevent the emergence of drug resistance.

Researchers at the Retroviral Replication Laboratory of the National Cancer Institute have introduced mutations into the nucleotides encoding the integrase (IN) or reverse transcriptase (RT) of a replication-defective variant of the pNL4.3 HIV-1 vector. The result is a collection of single-round vectors containing mutations in HIV-1 IN or RT. These mutants can be used in single round-infection assays to evaluate potential anti-HIV drugs. The vector collection contains over 140 mutations or a combination of mutations and has

been thoroughly tested and validated. This collection is a good research surrogate as the included vectors are safer versions of HIV-1 viruses when compared to those found in patients.

The Retroviral Replication Laboratory of the National Cancer Institute actively seeks parties interested in non-exclusive licensing this collection of vectors. Parties interested in licensing the technology should submit an application for licensing and seek detailed information from the Licensing and Patenting Manager indicated below.

### **Potential Commercial Applications**

- Screening assays to test the efficacy of potential INSTIs or RT anti-HIV drugs

### **Competitive Advantages**

- Collections made from replication-defective variant of the pNL4.3 HIV-1 vector
- Over 140 mutation or combination of mutations in collection

### **Inventor(s)**

Steven Smith (NCI), [Stephen Hughes \(NCI, CCR, RRL\)](#)

### **Development Stage**

- Basic (Target Identification)

### **Publications**

Smith SJ, et al. Integrase Strand Transfer Inhibitors Are Effective Anti-HIV Drugs. [[PMID 33572956](#)]

### **Patent Status**

- **Research Material:** NIH will not pursue patent prosecution for this technology

### **Therapeutic Area**

- Infectious Diseases

### **Updated**

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