NIH AIDS Reagent Program
20301 Century Boulevard
Building 6, Suite 200
Germantown, MD 20874
USA

Phone: 240 686 4740
Fax: 301 515 4015
aidsreagent.org

DATA SHEET

Reagent:	Jurkat HIV-1 LTR-luciferase Cells (1G5)
Catalog Number:	1819
Lot Number:	040912
Release Category:	C
Provided:	1.5 x 10^7cells/ml. Viability is 84%.
Cell Type:	Jurkat derivative.
Propagation Medium:	RPMI 1640, 90%; fetal bovine serum, 10%.
Freeze Medium:	RPMI 1640, 72.5%; fetal bovine serum, 20%; DMSO, 7.5%.
Growth Characteristics:	This cell line can be difficult to grow. Viability tends to start low and will drop a few days after initial culture. Keep cells slightly crowded until the culture recovers. This may take a week or more. 1G5 cells should be maintained at 1 x 10^6 cells/ml. Doubling time is approximately 24 hours. Split 1:10 every five days. The cells grow in suspension as single cells or small clumps. The suggested medium for 1G5 cells is RPMI with 10% fetal bovine serum; however, 1G5 cells have also been grown in RPMI with 5% fetal bovine serum and DMEM with 10% fetal bovine serum without appreciable change in their characteristics.
Morphology:	Characteristic T cell appearance; round, refractile with smooth edges.
Sterility:	Negative for bacteria, fungi, and mycoplasma.

Special Characteristics:	1G5 is a Jurkat derivative containing a stably integrated HIV-LTR-luciferase construct. Cells were selected for low basal luciferase activity, HIV infectability, high responsiveness to *tat* expression, and high responsiveness to T-cell activation signals. Conditions can be established for quantitative analysis of LTR(HIV)-luciferase response to each of these conditions. A 10-1000-fold increase in luciferase activity can be achieved after transfection or infection of 1G5 with *tat*-expressing vectors or HIV. Equivalent levels of expression have also been detected after stimulation with T cell mitogens and stimulating environmental conditions. When used in conjunction with a tat-expressing vector, 1G5 provides a system for testing potential anti-*tat* therapies without the use of live HIV.
Recommended Storage:	Liquid nitrogen.
Contributor:	Dr. Estuardo Aguilar-Cordova and Dr. John Belmont.
References:	Aguilar-Cordova E, Chinen J, Donehower L, Lewis DE, Belmont JW. A sensitive reporter cell line for HIV-1 tat activity, HIV-1 inhibitors, and T cell activation effects. *AIDS Res Hum Retroviruses* **10**:295-301, 1994.
NOTE:	Acknowledgment for publications should read "The following reagent was obtained through the NIH AIDS Reagent Program, Division of AIDS, NIAID, NIH: 1G5 from Dr. Estuardo Aguilar-Cordova and Dr. John Belmont." **Corporate requests should be directed to Dr. Aguilar-Cordova or Dr. Belmont, Baylor College of Medicine, Institute for Molecular Genetics, One Baylor Plaza, Houston, TX 77030.**
Research Chart:	**HIV-TAT DRUG INTERACTION STUDIES USING 1G5 CELLS** **Cell Culture and Transfection:** 1G5 cells were maintained in RPMI 1640 supplemented with 10% HyClone fetal calf serum. Transfections were done in complete medium in a BTX electroporator at 120 V, 3000 µF, in 125 µl at 2.5 x 10^7 cells/ml in a 0.2 ml cuvette. Infections with retroviral vectors were done by supernatant exposure in complete medium containing 4.0 µg/ml polybrene. HIV infections using the NL4-3 laboratory strain were performed in complete medium. The infected cells were then treated with anti-viral compounds. **Luciferase Analysis:** Five days after infection with HIV or a Tat retroviral vector (E. Aguilar-Cordova, unpublished data) and exposure to antiviral compounds, the cells were harvested, centrifuged at 1800 rpm for two minutes, washed once with PBS, and resuspended in 50 µl of luciferase lysis buffer [25 mM Tris-phosphate (pH 7.8), 2 mM 1,2-diaminocyclohexane-N,N,N',N'-tetraacetic acid, 10% glycerol, 1% Triton X-100]. The mixture was incubated at room temperature for 15-30 minutes and microfuged for 30 seconds. 10 µl of the lysis supernatant was added to 50 µl of luciferase assay reagent (Promega) and immediately read in a Packard scintillation counter set for single photon counting. All experiments were done in triplicate.
Last Updated	March 24, 2016