DATA SHEET

For research use only. Not for use in humans.

Reagent: OM-10.1 cells

Catalog Number: ARP-1319

Lot Number: 170174

Release Category: C

Provided: Each vial of ARP-1319 contains approximately 4.4 × 10^6 cells in 1.0 mL of freeze medium. Post-thaw viability was 54%.

Propagation Medium: The recommended propagation medium is RPMI supplemented with 2.0 mM L-glutamine, 100 U/mL penicillin, 100 µg/mL streptomycin, 90%; heat-inactivated fetal bovine serum, 10%.

Freeze Medium: The recommended freeze medium is propagation medium, 50%, heat-inactivated fetal bovine serum, 42.5%, DMSO, 7.5%.

Growth Characteristics: ARP-1319 cells should be thawed rapidly and immediately diluted at least 1:10 in propagation medium warmed to 37°C. The initial culture should be seeded at 0.5 x 10^6 cells/mL, and then the growth medium should be added to obtain a concentration of 0.2 x 10^6 cells/mL after 24 hours. The cells should be passaged every 72 hours thereafter, splitting them 1:10 to maintain log phase growth. These cells grow as a single-cell suspension. Doubling time is 24 hours.

Sterility: Tests for bacteria, fungi and mycoplasma were negative.

Description: ARP-1319 was cloned from HL-60 promyelocyte cells that survived an acute human immunodeficiency virus 1 (HIV-1) infection. These cells express surface myeloid-specific antigens characteristic of parental HL-60 cells and differentiate in response to established agents. Morphology is large circular cells with "spiked" cytoplasmic membrane. No syncytia are seen in these infected cells, although large multi-nucleated cells are sometimes observed in uninfected HL-60 cultures.

Special Characteristics: Each OM-10.1 cell contains a single integrated provirus. OM-10.1 shows minimum constitutive HIV-1 production and is $CD4^+$ under normal culture conditions. HIV-1 expression increases 30 to 1000-fold 24 to 72 hours after treatment with TNF-α and 10 to 20-fold 24 to 72 hours after treatment with phorbol esters. HIV-1 induction can be monitored by measuring RT activity or by viral antigen ELISA, or, for TNF-α-treated cells, by measuring cell-surface CD4 down-modulation. Supernatant p24 levels can increase to greater than 500 ng/mL after TNF-α treatment. Because OM-10.1 cells remain $CD4^+$ until viral activation, superinfection of resting cells will result in an increase in background HIV expression. This is particularly true immediately after cryo recovery and can be minimized by periodic treatment of the cells with 10 µg/mL AZT.

Recommended Storage: Keep at -100°C or colder, preferably in the vapor phase of a liquid nitrogen freezer.

Contributor: Dr. Salvatore Butera

References:

Butera, S., T., et al. “Extrachromosomal Human Immunodeficiency Virus Type-1 DNA Can Initiate a Spreading Infection of HL-60 Cells.” J. Cell Biochem. 45 (1991): 366-373. PubMed: 2045430.

Butera, S. T., et al. “Oscillation of the Human Immunodeficiency Virus Surface Receptor is Regulated by the State of Viral Activation in a CD4+ Cell Model of Chronic Infection.” J. Virol. 65 (1991): 4645-4653. PubMed: 1678437.

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Butera, S. T., et al. “Tumor Necrosis Factor Receptor Expression and Signal Transduction in HIV-1-Infected Cells.” AIDS 7 (1993): 911-918. PubMed: 8395188.

Butera, S. T., B. D. Roberts and T. M. Folks. “Regulation of HIV-1 Expression by Cytokine Networks in a CD4+ Model of Chronic Infection.” J. Immunol. 150 (1993): 625-634. PubMed: 8380428.

Butera, S. T., et al. “Human Immunodeficiency Virus Type 1 RNA Expression by Four Chronically Infected Cell Lines Indicates Multiple Mechanisms of Latency.” J. Virol. 68 (1994): 2726-2730. PubMed: 7511177.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through the NIH HIV Reagent Program, Division of AIDS, NIAID, NIH: OM-10.1 Cells, ARP-1319, contributed by Dr. Salvatore Butera.” Also include the references cited in any publication.

Biosafety Level: 2

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 (BMBL). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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