

## Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

### ➤ *Limited Use & License Disclosure*

**BY USE OF THIS PRODUCT, RESEARCHER AGREES TO BE BOUND BY THE FOLLOWING TERMS OF LIMITED USE OF THIS CELL LINE PRODUCT.**

- If the researcher is not willing to accept the terms of limited use of this cell line product, and the product is unused, ACRO will accept return of the unused product.
- Researchers may use this product for research use only, no commercial use is allowed.  
"Commercial use" means any and all uses of this product and derivatives by a party for profit or other consideration and may include but is not limited to use in: (1) product manufacture; and (2) to provide a service, information or data; and/or resale of the product or its derivatives, whether or not such product or derivatives are resold for use in research.
- This cell line is neither intended for any animal or human therapeutic purposes nor for any direct human in vivo use. You have no right to share, modify, transfer, distribute, sell, sublicense, or otherwise make the cell line available for use to other researchers, laboratories, research institutions, hospitals, universities, or service organizations.
- ACROBIOSYSTEMS MAKES NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE SUITABILITY OF THE CELL LINE FOR ANY PARTICULAR USE.
- ACROBIOSYSTEMS ACCEPTS NO LIABILITY IN CONNECTION WITH THE HANDLING OR USE OF THE CELL LINE.
- Modifications of the cell line, transfer to a third party, or commercial use of the cell line may require a separate license and additional fees. Please contact [order.cn@acrobiosystems.com](mailto:order.cn@acrobiosystems.com) for further details.

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

## Human CD16a (158V) (Luc) Jurkat Reporter Cell

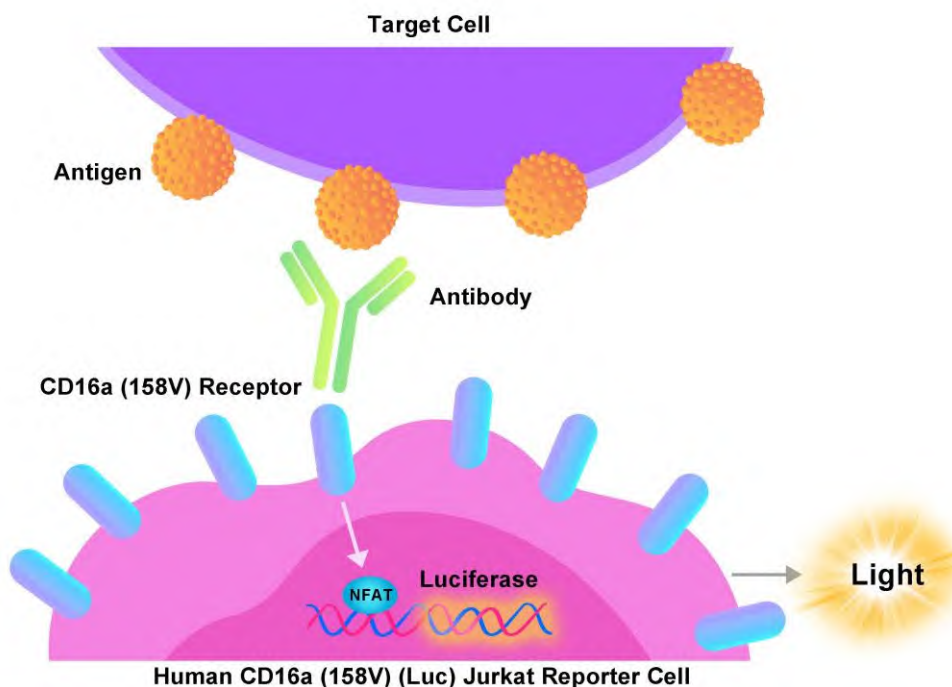
| Catalog No.  | Size   |
|--------------|--|
| SCJUR-STF067 | 2 × (1 vial contains ~5×10 <sup>6</sup> cells) |

### • Description

The Human CD16a (158V) (Luc) Jurkat Reporter Cell was engineered to not only express the NFAT response element driving luciferase expressing systems, but also express the receptor full length human CD16a (Uniprot: P08637) mutated to a Valine (V) at amino acid 158 exhibiting a higher affinity for IgG1 and IgG3 isotypes compared to CD16a-158F, which can use to evaluate ADCC activity of antibodies in the presence of corresponding target cells. When co-cultured with a target cell and relevant antibody, the antibody simultaneously binds the target cell antigen and CD16a (158V) receptor on the surface of Human CD16a (158V) (Luc) Jurkat Reporter Cell, resulting in receptor clustering, intracellular signaling and NFAT-mediated luminescence.

### • Application

- Determination of ADCC activity induced by antibodies.



# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

## • Cell Line Profile

|                        |   |
|------------------------|---|
| Cell line              | Human CD16a (158V) (Luc) Jurkat Reporter Cell |
| Host Cell              | Jurkat  |
| Property               | Suspension                                    |
| Complete Growth Medium | RPMI-1640 + 10% FBS                           |
| Selection Marker       | Puromycin (5 µg/mL) + Hygromycin B (20 µg/mL) |
| Incubation             | 37°C with 5% CO <sub>2</sub>                  |
| Doubling Time          | 16-20 hours                                   |
| Transduction Technique | Lentivirus                                    |

## • Materials Required for Cell Culture

- RPMI Medium 1640 (Gibco, Cat. No. 11875-093)
- Fetal bovine serum (CellMax, Cat. No. SA211.02)
- Puromycin (InvivoGen, Cat. No. ant-pr-5b)
- Hygromycin B (Invitrogen, Cat. No. 10687010)

**Note:** For selection antibiotics, we highly recommend using the specified brand. The activity of antibiotics may vary between manufacturers, so if you choose to use a different brand, it is essential to validate whether the concentration recommended in the culture medium is suitable. Regardless of the brand used, we recommend maintaining a backup culture without selection antibiotics to avoid potential cell loss due to inappropriate antibiotic concentration.

- Penicillin-Streptomycin (Gibco, Cat. No. 15140-122)
- Complete Growth Medium: RPMI-1640 + 10% FBS, 1% P/S
- Culture Medium: RPMI-1640 + 10% FBS, Puromycin (5 µg/mL), Hygromycin B (20 µg/mL), 1% P/S
- Freeze Medium: 90% FBS, 10% (V/V) DMSO
- T-75 Culture flask (Corning, Cat. No. 430641)
- Cryogenic storage vials (SARSTEDT, Cat. No. 72.379.007)
- Thermostat water bath
- Centrifuge (Cence, Model: L550)
- Cell counter (MONWEI, Model: SmartCell200A Plus)
- CO<sub>2</sub> Incubator (Thermo, Model: 3111)
- Biological Safety Cabinet (Thermo, Model: 1389)

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

## • *Recovery*

1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize the risk of contamination, ensure the cap remains out of the water. Thawing should be completed quickly, typically within 3-5 minutes.
2. After thawing, promptly remove the vial from the water bath and decontaminate it by spraying with 70% ethanol. From this point onward, all operations must be performed under strict aseptic conditions.
3. Transfer the contents of the vial to a centrifuge tube containing 4.0 mL of complete growth medium.
4. Count viable cells and centrifuge at approximately 1000 rpm for 5 minutes.
5. Discard the supernatant and resuspend the cell pellet in an appropriate amount of fresh **complete growth medium**. Adjust the cell density of the suspension to  $1 \times 10^6$  viable cells/mL and transfer cells to an appropriate size vessel.
6. Incubate at 37°C with 5% CO<sub>2</sub> incubator.

## • *Subculture*

Cell viability may be low after thawing, and full recovery (viability >90%) may take up to 1-2 weeks. Once the cell density reaches approximately  $2 \times 10^6$  viable cells/mL, adjust the density to a range of  $2 \times 10^5$ - $5 \times 10^5$  viable cells/mL by either adding the fresh **culture medium** or replacing the existing culture medium. Avoid allowing the cell density to exceed  $3 \times 10^6$  cells/mL, as this may negatively impact cell performance in subsequent passages. T-75 flasks are recommended for subculturing.

• **Subculturing Frequency:** It is recommended to subculture every 3-4 days, adjusting the frequency based on the cell density in your specific culture system.

**Note:** After recovery, maintain the cells for 1-2 passages in the **complete growth medium not containing the selection marker**, if the cells are in good condition (viability >90%), transition to the **culture medium containing the selection marker** during subculturing.

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

## • *Cryopreservation*

1. Count viable cells and harvest the cell suspension.
2. Centrifuge at 1000 rpm for 5 min at room temperature and resuspend cells in ice cold freezing medium to a concentration of  $5 \times 10^6$  to  $1 \times 10^7$  cells/mL.
3. Aliquot the cell suspension into cryogenic storage vials. Place the vials in a programmable cooler or an insulated box placed in a  $-80^{\circ}\text{C}$  freezer overnight, then transfer to liquid nitrogen storage for long-term storage.

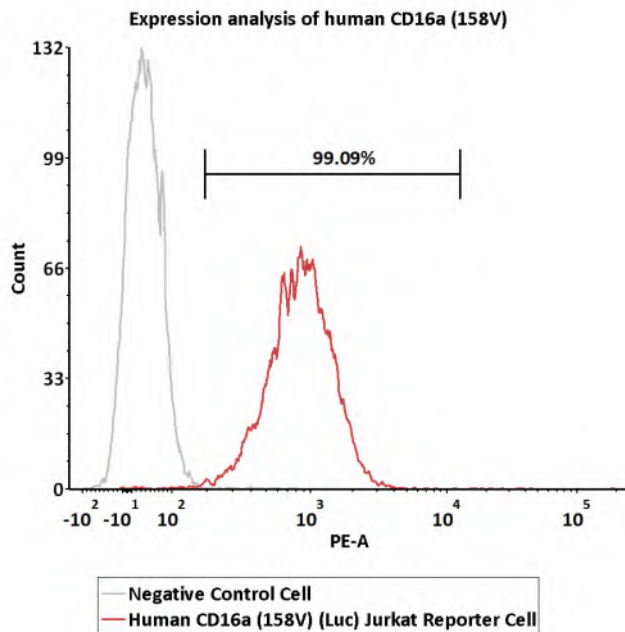
**Note:** It is recommended to establish a cell bank at the earliest possible passage for long-term use.

## • *Storage*

Cells must be received in a frozen state on dry ice and should be transferred to liquid nitrogen or a  $-80^{\circ}\text{C}$  freezer immediately upon receipt. If stored in a  $-80^{\circ}\text{C}$  freezer, it is recommended to limit the storage period to no more than two weeks. For long-term preservation, transfer the cells to liquid nitrogen is highly recommended.

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

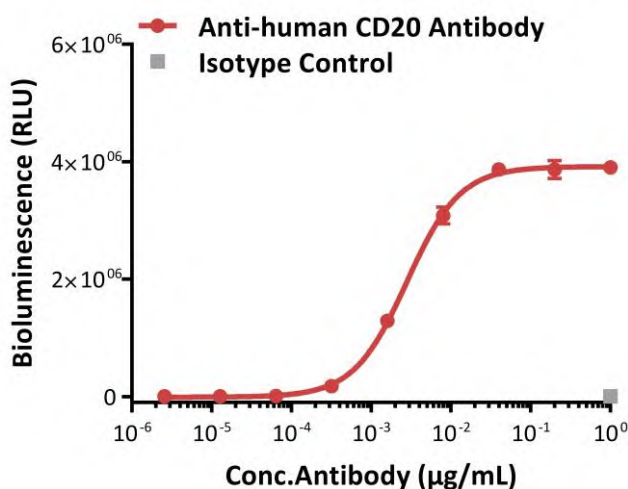
## • Receptor Assay



**Fig1. Expression analysis of human CD16a (158V) on Human CD16a (158V) (Luc) Jurkat Reporter Cell by FACS.** Human CD16a (158V) (Luc) Jurkat Reporter Cell or negative control cell were stained with PE-labeled anti-human CD16a antibody.

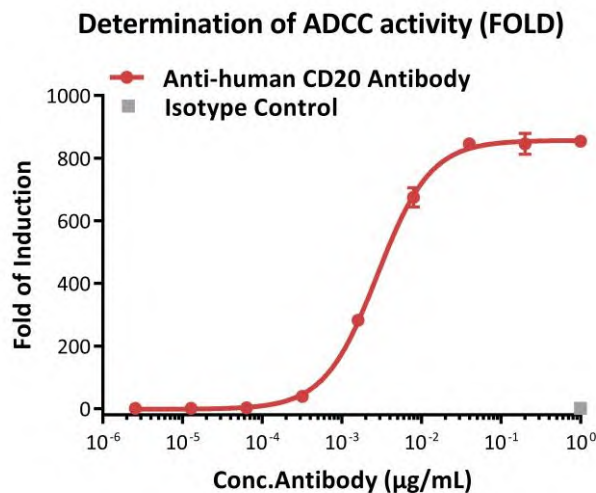
## • Application

### Determination of ADCC activity (RLU)



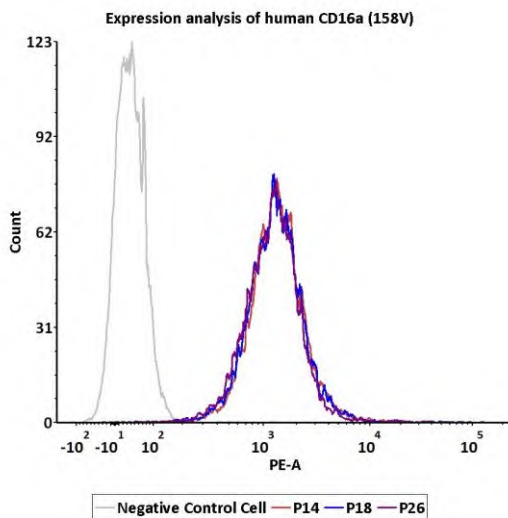
**Fig2. ADCC response to anti-human CD20 antibody (RLU).** Anti-human CD20 antibody-induced ADCC activity was evaluated using Human CD16a (158V) (Luc) Jurkat Reporter Cell in the presence of Raji cells that express CD20 endogenously. The EC<sub>50</sub> of anti-human CD20 antibody was approximately 0.0028  $\mu\text{g/mL}$ .

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet



**Fig3. ADCC response to anti-human CD20 antibody (FOLD).** Anti-human CD20 antibody-induced ADCC activity was evaluated using Human CD16a (158V) (Luc) Jurkat Reporter Cell in the presence of Raji cells that express CD20 endogenously. The max induction fold was approximately 854.

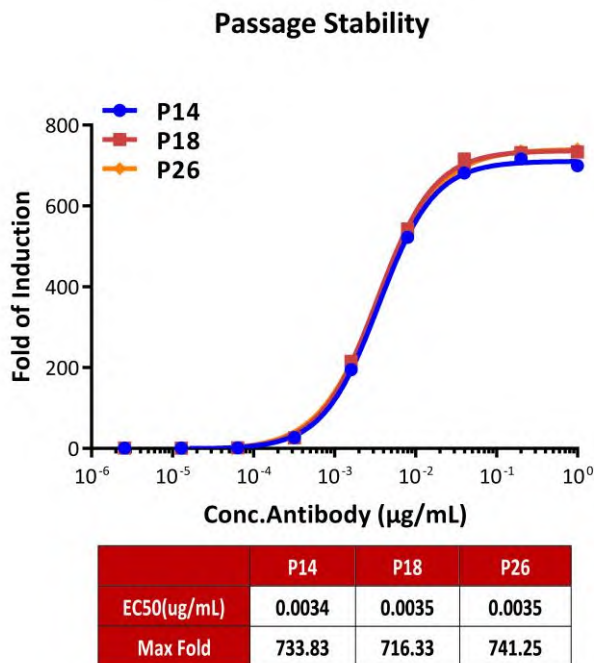
## • Passage Stability



| Passage | MFI for CD16a (158V) (PE) |
|---------|---------------------------|
| P14     | 1269                      |
| P18     | 1227                      |
| P26     | 1187                      |

**Fig4. Passage stability analysis of receptors expression by FACS.** Flow cytometry surface staining of human CD16a on Human CD16a (158V) (Luc) Jurkat Reporter Cell demonstrates consistent mean fluorescent intensity across passage 14-26.

# Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet



**Fig5. Passage stability analysis by Signaling Bioassay.** The continuously growing Human CD16a (158V) (Luc) Jurkat Reporter Cell was stimulated with serial dilutions of anti-human CD20 antibody in the presence of Raji cells that express CD20 endogenously. Anti-human CD20 antibody stimulated response demonstrates passage stabilization (fold induction and EC50) across passage 14-26.



## Human CD16a (158V) (Luc) Jurkat Reporter Cell Data Sheet

### • *Related Products*

#### Products

Human CD16a (158F) (Luc) Jurkat Reporter Cell  
 Human CD32a (131H) (Luc) Jurkat Reporter Cell  
 Human CD32a (131R) (Luc) Jurkat Reporter Cell  
 Human CD32b (Luc) Jurkat Reporter Cell  
 Human CD64 (Luc) Jurkat Reporter Cell

#### Cat.No.

SCJUR-STF068  
 SCJUR-STF069  
 SCJUR-STF070  
 SCJUR-STF071  
 SCJUR-STF072