aceRNA Technologies Co., Ltd.

# CM detector RNA Switch™

# PROTOCOL

| Product name | Cat. No. | Size*** | Storage |
|---|---|---|---|
| CM detector RNA Switch™ | P-0002 | 9 μg | -80°C |

*** 0.5 μg/μL

**Additional materials required**

- 24-well tissue culture plates
- 1.5 mL microcentrifuge tubes (RNase/DNase free, Sterile)
- Lipofectamine MessengerMAX™ Transfection Reagent (ThermoFisher)
- Reference iRFP670 mRNA - various fluorescents can be used except EGFP
  mCherry mRNA (TriLink) is recommended
- Control detector RNA Switch™ (P-0001)

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## Cardiomyocyte detection using CM detector RNA Switch™

The following procedure is for the transfection of cell populations containing human cardiomyocytes with CM detector RNA Switch™ in one well of a 24-well plate. Transfection efficiency and mRNA expression can be influenced by the cell type being transfected.

RNA Switch™ is synthetic mRNA. Therefore, transfection should be performed in a RNase-free working-environment and mRNA should be diluted and aliquoted in RNase-free Water. Store them at -80°C.

1. Plate cell population containing human cardiomyocytes in a 24-well tissue culture plate at a density of 2.0 ~ 3.0 x $10^5$ cells/well and incubate the cells at 37°C and 5% $CO_2$ 24 h prior to transfection.

2. 24 h after seeding, aspirate the medium and add 0.5 mL of fresh medium to wells and incubate the cells at 37°C and 5% $CO_2$ 1 to 2 hrs before transfection.

3. Thaw Control detector RNA Switch™ (P-0001), CM detector RNA Switch™, and reference iRFP670 mRNA on ice or at 4°C. Transfect the cells with 0.1 μg of Control detector RNA Switch™ or CM detector RNA Switch™ mixed with 0.1 μg of reference iRFP670 mRNA using 1 ~ 1.5 μL of Lipofectamine MessengerMAX™ Transfection Reagent (ThermoFisher) according to the manual. Incubate the cells at 37°C and 5% $CO_2$.

4. 4 h after transfection, discard the medium and add 0.5 mL of fresh medium. Incubate the cells at 37°C and 5% $CO_2$.

5. Next day, fluorescence expression can be imaged by image analyzer and harvested for FACS analysis.

- Control detector RNA Switch™: EGFP
- CM detector RNA Switch™: EGFP
- Reference mRNA: iRFP670