PCR*opsis*™ BCS Nano

For Research Use Only

REF #: 2276001, 2276010, 2276100, 22761000

Store at room temperature

INTENDED USE

PCR*opsis*™ BCS Nano is intended for selective precipitation of red blood cells from whole blood at room temperature without equipment.

01 INTRODUCTION

PCR*opsis*™ BCS Nano consists of a set of proprietary substrates engineered to selectively precipitate red blood cells (RBC) from whole blood. As a result, an enrichment of white blood cells (WBC) remains on the top portion of the processed sample. This approach can be used in combination with cell-specific depletion products that cross link RBC to undesired cells. In this scenario, PCR*opsis*™ BCS Nano forces RBC, along with undesired cells, to the bottom of the tube. PCR*opsis*™ BCS Nano allows for the enrichment of nucleated without the need for centrifugation, filters, or antibodies, and thereby streamlines automated sample processing and results in unlabeled cells.

02 PRODUCT SIZE

Catalog Number	Volume
2276001	1 mL
2276010	10 mL
2276100	100 mL
22761000	1000 mL

03 STORAGE & STABILITY

PCR*opsis*™ BCS Nano is shipped and stored at room temperature. The recommended storage temperature is: 4˚C ~ 25˚C. Do not freeze.

04 OVERVIEW OF PROTOCOL

BCS Nano

Thoroughly mix BCS Nano with Blood in a 1:5 ~ 1:10 ratio

Let blood mixture at room temperature for 10~20 minutes

supernatant

Test sample (whole blood)

- **BCS Nano can be used to process 0.1 ~ 2 mL of whole blood / tube**
- **BCS Nano + Blood can be mixed in 0.2 ~ 3 mL plastic tubes or plates (diameter =< 10 mm)**

05 WRITTEN PROTOCOL

1. Thoroughly vortex PCR*opsis*™ BCS Nano to ensure homogeneity
    1. BCS Nano has a hazy, white-clear color with visible particulates when homogenized and normal settlement occurs if not regularly mixed
2. Add 1 volume (e.g., 40 µL) of BCS Nano to a 0.2 ~ 3 mL plastic tube tube or well on a plate with a diameter no greater than 10 mm using a 1 mL pipette tip
    1. It's critical to use 1 mL pipette tips, or 200 µL tips where the end is cut off, when aliquoting BCS Nano to avoid clogging
    2. BCS Nano may not function optimally when using tubes with a capacity of >3 mL or tubes with a diameter greater than 10 mm
3. Add 5~10 volumes (e.g., 200 ~ 400 µL) of test sample to the tube or well with BCS Nano
    1. The test sample should be 0.1 ~ 2 mL whole blood

05 WRITTEN PROTOCOL

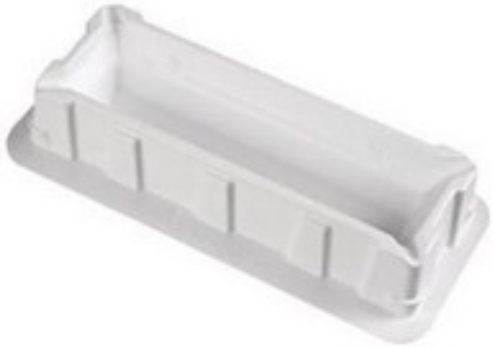
4. Thoroughly mix sample by pipetting up and down 3 times
5. Let the mixture incubate at room temperature for 15 minutes
    1. 10~20 minutes is sufficient time to observe cellular separation for most samples
    2. A 20 minute separation time will result in the maximal separation possible for most samples
6. Carefully collect the RBC-depleted supernatant containing an enrichment of nucleated cells without disturbing the interphase
    1. The supernatant can be used directly in nucleic acid amplification studies
    2. 1 ~ 3 µL of supernatant can be directly added to a PCR mixture (20 µL final volume) without the need for RNA / DNA extraction

06 STEP-BY-STEP PROTOCOL WITH FIGURES

Step 1

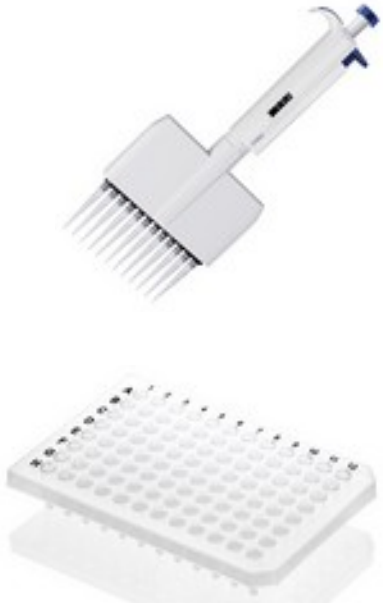
Gently invert BCS Nano to ensure homogeneity

Step 2



Add BCS Nano to a reservoir

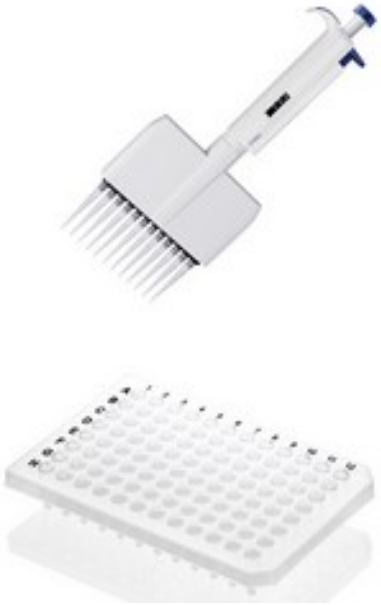
Step 3



Add 1~2 volumes of reagent to wells in a 96-well PCR plate or tube

06 STEP-BY-STEP PROTOCOL WITH FIGURES

Step 4



Mix 10 volumes of whole blood to wells / tubes containing reagent

Step 5

Incubate mixture at room temperature for 10~20 minutes for cellular separation

Step 6

Carefully remove some of the supernatant above the interphase

07 TROUBLESHOOTING & SUGGESTIONS

1. For best results, use freshly collected blood that has been stored at 4˚C for less than 72 hours.
2. Performance characteristics of PCR*opsis*™ BCS Nano were validated using 0.1 ~ 2 mL of freshly collected blood in BD Vacutainer EDTA Tubes and processed in plastic tubes with a diameter no greater than 10 mm. The blood was used within 48 hours from collection and stored at 4˚C~10˚C. The use of alternative samples, tubes, or volumes may affect the performance of the product.
3. Take care in maintaining the sterility of your BCS Nano stock after use.
4. It's recommended to use the processed supernatant for downstream applications within 4 hours, although samples may be stable at 4˚C or -20˚C for some applications.
5. For flow cytometry applications: Immediately mix the processed supernatant with your flow cytometry buffer and label cells following established protocols.
6. For cell culture applications: The processed supernatant containing nucleated cells should be immediately mixed with nutrient-rich medium to maximize viability. However, you may find a percentage of cells undergoing apoptosis.
7. For direct PCR applications: Ensure that the processed supernatant consist of 1~3 µL in a PCR mixture totaling 20 µL. BCS Nano sequesters PCR inhibitors found in blood, however higher volumes of supernatant may overwhelm the sequestration capacity and thereby inhibit PCR for some applications. **For optimal nucleic acid amplification**, the enriched nucleated cells should be washed with PBS and processed with PCR*opsis*™ Reagent RVD with RVD Enhancer as indicated in the product IFU.

08 CONTACT

Contact our research team if assistance with BCS Nano is necessary (**info@entopsis.com**). We will try our best to assist with non-intended applications of this product or direct you to alternative products. Any business related questions should be directed to: **Sales@PCRopsis.com**.

7600 NW 69th Ave, Medley, FL 33166
www.PCRopsis.com

info@entopsis.com
sales@PCRopsis.com

Toll-free 1-888-407-5070

PROUDLY DESIGNED & MADE IN THE USA

v.20230109