Immunophenotyping RBRCLA_IMM_002

Purpose

This test differentiates immune cell sub-populations via flow cytometry.

Description: increased CD4-positive T cell number (MP:0008074), decreased CD4-positive T cell number (MP:0008075), etc..

Experimental Design

- **Minimum number of animals :** 3M + 3F
- **Age at test:** Week 57
- **Sex:** We would expect the results of this test to show sexual dimorphism

Equipment

Equipment

- Scissors and forceps for biopsy
- Precision balance
- Calibrated single and multichannel pipettes
- Plate shaker
- Refrigerated centrifuge
- Flow Cytometer (capable of distinguishing a minimum of 8 colours per well)
- Tissue dissociator:
  - GentleMACS tissue dissociator ***OR***
  - Equipment for manual dissociation
- Cell counter equipment:
  - Orflo Moxi-Z Cell counter ***OR***
  - Coulter Vicell XR OR Life Technologies Attune® Flow Cytometer

Supplies

- 96-well V-bottomed plates (Falcon #353263)
- Petri dishes
- Dispensing troughs
- Extra long 10 µl pipette tips for antibody solutions
- *(if using GentleMACS for dissociation)* C Tubes. It is acceptable to re-use these once.
- 50ml Falcon tubes
- Cell strainers e.g. 70m cell strainers that fit 50ml Falcon tubes (BD Falcon, #352350) ***OR*** Nytex
- Cell counter recipients (i.e., slides/cassettes/etc. for cell counter)
- *(if sample processing delayed)* RPMI 1640

- *(if sample processing on same day)* HBSS (with phenol red)
- CS (calf serum)
- PBS with Mg2+, with Ca2+ (for enzyme buffer used for DNAse and Collagenase D digestions)
- PBS without Mg2+, without Ca2+ (for FACS buffer to be used in all steps subsequent to enzymatic digest)
- EDTA (final concentration 2mM)
- Digestion enzyme (Collagenase D from Roche, #11088858001) stock solution in enzyme buffer (see below), aliquoted and stored at –20°C
- DNAse I stock solution (Sigma, #DN25) in enzyme buffer (see below), aliquoted and stored at -20°C
- RBC lysis buffer (eBioscience #00-4300-54 or BD Biosciences #555899, both 10X from manufacturer)
- HEPES (pH 7.2)

Procedure

This protocol requires several steps in the collection, preparation and analysis of the samples. Each one is detailed separately below.

Reagent preparation

Note that two different PBS solutions are required for the protocol below, one with Ca2+ and with Mg2+, another without Ca2+ and without Mg2+.

- **Collection buffer:**
  - (*if spleens are to be processed on the same day*) HBSS with Ca2+/Mg2+ and phenol red (Life Technologies 14170161; check if it has phenol red) ***OR***
  - (*if analysis will be delayed*) RPMI medium with 2% CS added.
- **FACS buffer** (for all steps subsequent to enzymatic digest; stable for up to 1 month in the fridge):
  - PBS 1X *without* Ca2+/Mg2+ ***OR***
  - HBSS 1X *without* Ca2+/Mg2+
  - EDTA 2mM
  - 2% CS (v/v)
  - 10mM HEPES
- **Enzyme buffer** (for DNAse and Collagenase D digestions; Stable for up to 1 month in the fridge):
  - PBS *with* Ca2+ and Mg2+ ***OR***
  - HBSS 1X *with* Ca2+/Mg2+
  - 2% CS (v/v);
  - 10mM HEPES
- **RBC Lysis buffer**: Prepare a 1X solution in ddH_20 from lysis buffer.
- **Stopping buffer** (require 300 µl per sample):
  - 1x PBS without Ca2+ and without Mg2+ or HBSS
  - 0.1 M EDTA (37.5 g/L)
- **Antibody cocktails for Panels 1 & 2**
  - Protect antibodies and prepared cocktails from direct light.
  - Mastermix concentration, storage temperature and stability to be determined after panels 1 and 2 have been finalised and tested.

- Each sample will require 50 µl (or up to 100 µl) of diluted 1X antibody cocktail.
- Antibody cocktails should be gently but thoroughly mixed or quickly vortexed to ensure homogeneity of the solutions.
- In order to eliminate aggregated antibodies from your mix, centrifuge each antibody cocktail for 8 min at 20,000xg and 8°C prior to staining cells.

- **Read buffer / dead cell exclusion dye**
  - SytoxBlue at 1:10000 concentration in FACS buffer ***OR***
  - SytoxGreen at 1:20000 concentration in FACS buffer
  - Zombie Near Infra-Red live dead from Biolegend at 1:2000 concentration
  - Require 200 l per well (i.e. 400 l for each spleen).
- **Enzyme cocktail (working solution):** 3 ml per each spleen, containing final concentrations of:
  - DNAse I: 30 g
  - Collagenase D: 600 Mandl Units

  NOTE: To top up to the 3ml use enzyme buffer; any intermediate dilutions of the enzyme stock solutions should be prepared with enzyme buffer.

Other preparations on the day

- Bring RBC lysis buffer and stop solution to room temperature.
- Prepare wet ice box, label tubes, etc.

Note all centrifuge steps are: 5 min, 400 x g at 8°C

Spleen collection

- Collect the spleen from euthanized mice.
- Remove all fat from the spleen and weigh the organ on a petri dish (do not hydrate the organ before weighing it as this would lead to substantial errors in measurement).
- Place the spleen in a 1.5ml eppendorf tube with 1 mL of sample collection buffer on ice. Use:
  - *(if spleens are to be processed on the same day)* HBSS without calcium, without magnesium but with phenol red ***OR***
  - *(if analysis will be delayed)* RPMI with 2% CS buffer.

Spleen dissociation / digests

If using a GentleMacs tissue dissociator:

- Add the spleen to a GentleMACS C tube containing 3 ml of 1X enzyme cocktail.
- Clip the tube on GentleMACS dissociator and run programme spleen_2.
- Incubate cell suspension for 30 minutes with gentle mixing at least every 5 minutes. Register incubation temperature.
- Run programme spleen 3.
- Add 300 L of stopping buffer and mix by inversion to block enzymatic digestion and dissociate T cell-dendritic cell interactions.
- Filter cell suspension:
  - through 70 m Nylon mesh filter into a 50 mL Falcon tube ***OR***

    - directly from C-tubes pour splenocyte suspension through 30 mm CellTrics Partec filters (#04-0042-2316) into 15 ml tubes.
- *(optional)* Wash the GentleMACS C tube with 5ml FACS buffer, filter and pool with flow-through from previous step.
- Centrifuge for 5 minutes, 400 x g at 8°C and discard supernatant.
- Resuspend total splenocytes in 1 mL cold FACS buffer and keep on ice (this step is not required if counting is performed on the attune).

OR, if performing manual digests:

- Place weighed spleen in 12x75mm tube containing 1ml of collagenase solution in 1X HBSS with Ca2+ and Mg2+ (0.17-0.2 Wünsch unit/ml)
- Mince into fine pieces using small scissors, place on ice until all samples are minced.
- Add 2ml collagenase (0.17-0.2 Wünsch unit/ml) to each tube and place in a 37ºC water bath for 30 minutes.
- Tricturate (pipetting vigorously up and down using a 1 mL pipetman) the mixture to break up clumps.
- Spin at 500 x g in a swing bucket rotor for 5 min at 10ºC. Decant the supernatant, rack the tubes or vortex to resuspend the pellet. Add 2ml FACS buffer, mix well by vortexing, take 10 µl for the counting step.
- Dilutions for counting: 2 serial 1:10 dilutions (10µl cells + 90µl FACS buffer, then 10µl of the 1:10 dilution + 90µl buffer.)
- Spin for 5min, 500 x g at 10ºC, decant supernatant, blot the top of the tube, resuspend pellet at $1x10^8$ cells/ml.

Cell counting

- Perform a cell count on an aliquot of the re-suspended cells (adjust concentration according to the cell counter method used).
- Note down the cell count, correct for dilution and calculate the concentration in cells per µl.
- Cell count:
    - *If performed before RBC lysis*, pipette the volume containing approximately 4 million cells/well to a 96 well plate in horizontal fashion starting from A1 onwards for panel 1 staining.
    - *If performed after RBC lysis*, pipette the volume containing approximately 1-2 million cells/well to a 96 well plate in horizontal fashion starting from A1 onwards for panel 1 staining.
- Do the same for panel 2 staining in separate wells leaving a few empty rows between the panels to avoid cross contamination.
- Top up to final volume of 100 ml using FACS buffer, centrifuge, discard supernatant and keep plate on wet ice.

Red blood cell lysis, blocking & staining

- Remove plate from ice and add 30 to 100 ml of 1X RBC lysis buffer (at room temperature) to each cell pellet from the previous step.
- Pipette up and down 2-3 times to break up the pellet and ensure complete lysis. Alternatively, vortex the edges of the plates, then pipet quickly once to ensure resuspension is ideal for optimal lysis.

- Incubate for 1 minute at room temperature and then return to ice and add 100 to 200 ml of FACS buffer (to stop lysis) to each well.

Note: *Following RBC lysis, every centrifugation step can be performed at 2000rpm for 1 minute in a 96 well plate, which significantly speeds up the protocol. Do take care to resuspend the cells very well to prevent HTS clumping.*

- Centrifuge, discard supernatant and resuspend in 200 ml FACS buffer (this step is not required if lysis was performed in 30 µl, since there will be enough volume left in the well for a bigger wash of 200 µl; saves time on a spin).
- Again centrifuge and discard supernatant and resuspend in 50 ml of 1:100 Fc block and incubate on ice for 10 min. Top up to 200 ml using FACS buffer after incubation.
- Take antibody (AB) cocktails from the fridge. In order to eliminate aggregated ABs from your mix before use, centrifuge each AB cocktail for 8 min at 20,000 x g and 4°C.
- Centrifuge plate, discard supernatant and resuspend in 50 to 100 ml 1X AB mix in appropriate wells for individual panels followed by incubation on ice and in the dark for 20 min.
- If using Sytox Blue/Sytox Green as live/dead discriminator:
    - Top up to 200 ml with FACS buffer after incubation. Centrifuge, discard supernatant and resuspend in 200 ml FACS buffer.
    - When ready to read plate, centrifuge again and discard supernatant. Resuspend the pellet in 200 ml of read buffer (Sytox Blue diluted 1:10000 in FACS buffer; Sytox Green diluted 1:20000 in FACS buffer).
- If using Zombie NIR dye as live/dead discriminator:
    - Add 200 ml of PBS (RT) to all samples
    - Spin at 2000 rpm for 1 minute 8°C
    - Add 100 ml/well of Zombie Near-IR Live/Dead dye (1/2000) made up in PBS incubate at room temperature for 10 mins, add 200 ml FACS buffer.

General Recommendations for Setting up Cytometer

Set up the analyser to aim acquire 300,000 viable events (live cells) for each of Panels 1 and 2. 500,000 are recommended for panel 2 in order to increase robustness of myeloid population of low frequencies (macrophages, DCs).

Gating Panel 1

Parameters	Gating steps			
Panel A live leukocyte count				
T cells (panel A)	number of live leukocytes	CD5+	CD161-	
NKT cells (panel A)	number of live leukocytes	CD5+	CD161+	
NK cells (panel A)	number of live leukocytes	CD5-	CD161+	
Others	number of live leukocytes	CD5-	CD161-	
CD4 T cells	number of live leukocytes	CD5+	CD161-	CD
CD8 T cells	number of live leukocytes	CD5+	CD161-	CD
DN T cells	number of live leukocytes	CD5+	CD161-	CD
DP T cells	number of live leukocytes	CD5+	CD161-	CD
CD4 NKT cells	number of live leukocytes	CD5+	CD161+	CD
CD8 NKT cells	number of live leukocytes	CD5+	CD161+	CD

DN NKT cells	number of live leukocytes	CD5+	CD161+	CD
CD4 CD25+ T cells		number of CD5+	CD161-	CD
CD4 CD25- T cells		number of CD5+	CD161-	CD
CD8 CD25+ T cells		number of CD5+	CD161-	CD
CD8 CD25- T cells		number of CD5+	CD161-	CD
DN CD25+ T cells		number of CD5+	CD161-	CD
DN CD25- T cells		number of CD5+	CD161-	CD
CD4 CD25+ NKT cells		number of CD5+	CD161+	CD
CD4 CD25- NKT cells		number of CD5+	CD161+	CD
CD8 CD25+ NKT cells		number of CD5+	CD161+	CD
CD8 CD25- NKT cells		number of CD5+	CD161+	CD
DN CD25+ NKT cells		number of CD5+	CD161+	CD
DN CD25- NKT cells		number of CD5+	CD161+	CD
CD4 CD44+CD62L- T cells		number of CD5+	CD161-	CD
CD4 CD44+CD62L+ T cells		number of CD5+	CD161-	CD
CD4 CD44-CD62L+ T cells		number of CD5+	CD161-	CD
CD4 CD44-CD62L- T cells		number of CD5+	CD161-	CD
CD8 CD44+CD62L- T cells		number of CD5+	CD161-	CD
CD8 CD44+CD62L+ T cells		number of CD5+	CD161-	CD
CD8 CD44-CD62L+ T cells		number of CD5+	CD161-	CD
CD8 CD44-CD62L- T cells		number of CD5+	CD161-	CD
DN CD44+CD62L- T cells		number of CD5+	CD161-	CD
DN CD44+CD62L+ T cells		number of CD5+	CD161-	CD
DN CD44-CD62L+ T cells		number of CD5+	CD161-	CD
DN CD44-CD62L- T cells		number of CD5+	CD161-	CD
CD4 CD44+CD62L- NKT cells		number of CD5+	CD161+	CD
CD4 CD44+CD62L+ NKT cells		number of CD5+	CD161+	CD
CD4 CD44-CD62L+ NKT cells		number of CD5+	CD161+	CD
CD8 CD44+CD62L- NKT cells		number of CD5+	CD161+	CD
CD8 CD44+CD62L+ NKT cells		number of CD5+	CD161+	CD
CD8 CD44-CD62L+ NKT cells		number of CD5+	CD161+	CD
DN CD44+CD62L- NKT cells		number of CD5+	CD161+	CD
DN CD44+CD62L+ NKT cells		number of CD5+	CD161+	CD
DN CD44-CD62L+ NKT cells		number of CD5+	CD161+	CD

Gating Panel B

Parameters	Gating steps				
Panel B live leukocyte count					
Neutrophils	Live	CD11b+	Ly6G+		
Monocytes	Not Granulocytes	CD11b+	Ly6C High		
Eosinophils	Not Monocytes	CD11b+	SSC-H High		
NK Cells (panel B)	Not Eosinophils	CD161+	CD19-	CD5-	
NK Subsets (Q1)	Not Eosinophils	CD161+	CD19-	CD5-	C
NK Subsets (Q2)	Not Eosinophils	CD161+	CD19-	CD5-	C
NK Subsets (Q3)	Not Eosinophils	CD161+	CD19-	CD5-	C

NK Subsets (Q4)	Not Eosinophils	CD161+	CD19-	CD5-	C
NKT Cells (panel B)	Not Eosinophils	CD161+	CD19-	CD5+	
NKT Subsets (Q1)	Not Eosinophils	CD161+	CD19-	CD5+	C
NKT Subsets (Q3)	Not Eosinophils	CD161+	CD19-	CD5+	C
T Cells (panel B)	Not Eosinophils	CD161-	CD5+		
T Subset	Not Eosinophils	CD161-	CD5+	Ly6C+	
B Cells	Not Eosinophils	MHCII+	CD19+		
B1B Cells	Not Eosinophils	MHCII+	CD19+	CD5+	
B2B Cells	Not Eosinophils	MHCII+	CD19+	CD5-	
Follicular B Cells	Not Eosinophils	MHCII+	CD19+	CD5-	C
pre-B Cells	Not Eosinophils	MHCII+	CD19+	CD5-	C
MZB	Not Eosinophils	MHCII+	CD19+	CD5-	C
cDCs	Not Eosinophils	MHCII+	CD19-	CD11c+	
cDCs CD11b Type	Not Eosinophils	MHCII+	CD19-	CD11c+	C
pDCs	Not Eosinophils	Not T Cells	Ly6C+	CD317+	
RP Macrophage (F4/80+)	Not Eosinophils	MHCII+	F4/80+		
or					
RP Macrophage (CD19-CD11c-)	Not Eosinophils	MHCII+	CD19-	CD11c-	

Parameters and Metadata

Spleen weight RBRCLA_IMM_001_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: g

Live leukocytes (Panel A) - % of total events RBRCLA_IMM_002_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

T cells (Panel A) - % of live leukocytes (Panel A) RBRCLA_IMM_003_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

NKT cells (panel A) - % of live leukocytes (Panel A) RBRCLA_IMM_004_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

NK cells (Panel A) - % of live leukocytes (Panel A) RBRCLA_IMM_005_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

CD4 T cells - % of live leukocytes (Panel A) RBRCLA_IMM_007_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

CD8+ T cells - % of live leukocytes (Panel A) RBRCLA_IMM_008_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

CD4+ NKT cells - % of live leukocytes (Panel A) RBRCLA_IMM_011_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

CD4- NKT cells - % of live leukocytes (Panel A) RBRCLA_IMM_013_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Treg cells - % of live leukocytes (Panel A) RBRCLA_IMM_014_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

CD4+ T helper cells - % of live leukocytes (Panel A) RBRCLA_IMM_015_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Total events (Panel A) RBRCLA_IMM_026_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Total events (Panel B) RBRCLA_IMM_027_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Effector CD4+ T helper cells - % of live leukocytes (Panel A) RBRCLA_IMM_028_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Resting CD4+ T helper cells - % of live leukocytes (Panel A) RBRCLA_IMM_029_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Effector CD8+ T cells - % of live leukocytes (Panel A) RBRC

LA_IMM_032_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

NaÃ¯ve CD8+ T cells - % of live leukocytes (Panel A)RBRCL

A_IMM_033_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Resting CD8+ T cells - % of live leukocytes (Panel A) RBRCL

A_IMM_034_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Effector CD4+ NKT cells - % of live leukocytes (Panel A) R

BRCLA_IMM_040_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** true

Unit Measured: %

Resting CD4+ NKT cells - % of live leukocytes (Panel A) RB

RCLA_IMM_041_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Effector CD4- NKT cells - % of live leukocytes (Panel A) RB

RCLA_IMM_046_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Resting CD4- NKT cells - % of live leukocytes (Panel A) RB

RCLA_IMM_047_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Live leukocytes (Panel B) - % of total events (Panel B) RBR

CLA_IMM_049_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Granulocytes - % of live leukocytes (Panel B) RBRCLA_IMM_05

0_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Monocytes - % of live leukocytes (Panel B) RBRCLA_IMM_051_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Eosinophils - % of live leukocytes (Panel B) RBRCLA_IMM_052_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

NK cells (Panel B) - % of live leukocytes (Panel B) RBRCLA_IMM_053_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Ly6C+ CD11b- NK cells - % of live leukocytes (Panel B) RB

RCLA_IMM_054_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Ly6C+ CD11b+ NK cells - % of live leukocytes (Panel B) RB

RCLA_IMM_055_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

CD11b- NK cells - % of live leukocytes (Panel B) RBRCLA_IMM_056_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

CD11b+ NK cells - % of live leukocytes (Panel B) RBRCLA_IMM_057_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

NKT cells (panel B) - % of live leukocytes (Panel B) RBRCLA_IMM_058_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Ly6C+ NKT cells - % of live leukocytes (Panel B) RBRCLA_IMM_059_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

T cells (panel B) - % of live leukocytes (Panel B) RBRCLA_IMM_061_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

B cells - % of live leukocytes (Panel B) RBRCLA_IMM_063_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Follicular B cells - % of B cells (Panel B) RBRCLA_IMM_067_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: %

Marginal zone B cells - % of B cells (Panel B) RBRCLA_IMM_071_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Conventional DC - % of live leukocytes (Panel B) RBRCLA_IMM_072_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Plasmacytoid DC- % of live leukocytes (Panel B) RBRCLA_IMM_074_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Macrophages- % of live leukocytes (Panel B) RBRCLA_IMM_075_002 | v2.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Equipment name RBRCLA_IMM_077_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: FACS, Flow cytometer, Fortessa_1, LSR II, Fortessa_I Custom Build,

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Equipment manufacturer RBRCLA_IMM_078_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BD Biosciences, Beckman Coulter, IntelliCyt, Cytek,

Equipment model RBRCLA_IMM_079_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BD LSR-II, BD LSRFortessa Cell Analyzer, CANTO-II, FACSAria III, Gallios, H47100123, iQue Screener PLUS, Aurora,

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CS&T Bead lot RBRCLA_IMM_080_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Anesthesia RBRCLA_IMM_081_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Injection narcosis with Ketamine (100mg/kg)/Xylazine (10mg/kg), Injection narcosis with Sodium Pentobarbital (Somnopentyl), Injection narcosis with Tribromoethanol (Avertin), Isoflurane, none, Injection narcosis with Medetomidine/Midazolam/Butorphanol,

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Cell digestion RBRCLA_IMM_082_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: GentleMACS, manual,

Cell digestion agent RBRCLA_IMM_083_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Collagenase D, Collagenase II, Spleen Dissociation Kit, manual,

---

Cell digestion agent manufacturer RBRCLA_IMM_084_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Gibco, Roche, Worthington, Miltenyi Biotec, manual, Sigma,

---

Cell digestion agent catalog number RBRCLA_IMM_085_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: #11088858001, 17101-015, CLS2LS004176, 130-095-926, manual, C6885,

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Cell counting performed RBRCLA_IMM_086_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: post-lysis, pre-lysis,

Cell counting equipment manufacturer RBRCLA_IMM_087_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: American Optical, BD Biosciences, Beckman Coulter, Life Technologies, Merck Millipore, Orflo, Nexcelom Bioscience, IntelliCyt,

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Cell counting equipment model RBRCLA_IMM_088_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 4468770, Attune, BD LSR-II, Countess Automated Cell Counter, Gallios, Moxi Z, Reichert Brightline, Scepter, Cellometer Auto T4, iQue Screener PLUS,

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Cell counting equipment name RBRCLA_IMM_089_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Cell lysis buffer manufacturer RBRCLA_IMM_090_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BD PharmLyse, eBioscience, Jax, JMC, LONZA, In house,

---

Cell lysis buffer catalog number RBRCLA_IMM_091_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 00-4300-54, 10-548E, 555899, home brew, In house,

Date and time of sacrifice RBRCLA_IMM_092_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Date and time of sample preparation RBRCLA_IMM_093_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

Sample storage temperature until analysis (in Celsius) RBRCLA_IMM_094_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: C

FCS repository reference (URL/ID) RBRCLA_IMM_095_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

Balanced salt solution type RBRCLA_IMM_096_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: HBSS, PBS, KDS BSS,

Balanced salt solution manufacturer RBRCLA_IMM_097_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Biochrom, Gibco, Life Technologies, Sigma, Wako, Wisent, home brew, In house,

---

Balanced salt solution catalog number RBRCLA_IMM_098_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 041-20211, 14175-095, 14190-144, D1408, H6136-1L, HBSS 1X 14170-088, L 182-10, home brew, 14190169, In house,

---

RPMI manufacturer RBRCLA_IMM_099_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Gibco, Jax, Life Technologies, none used, Sigma, Wako, Thermo Fisher Scientific,

RPMI catalog number RBRCLA_IMM_100_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 11875-093, 11875-101, 189-02145, 31800-022, home brew, none used, R8758,

---

DNAse I manufacturer RBRCLA_IMM_101_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Sigma, Spleen Dissociation Kit, N/A,

DNAse I catalog number RBRCLA_IMM_102_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: D8764, DN25, N/A,

Dead cell exclusion dye RBRCLA_IMM_103_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: DAPI, Propidium Iodide, Sytox Blue, Sytox Green, Zombie NIR, LIVE/DEAD Fixable Aqua stain, Ghost Dye UV450,

---

Dead cell exclusion dye manufacturer RBRCLA_IMM_104_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Biolegend, home brew, Life Technologies, Sigma, Invitrogen by Thermo Fisher, Tonbo biosciences,

---

Dead cell exclusion dye catalog number RBRCLA_IMM_105_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 423106, D9542, home brew, R37606, S-34860, S11348, S34857, P4170, L34966, 13-0868-T500,

---

Cell digestion temperature (in Celsius) RBRCLA_IMM_106_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 37, RT, N/A,

Panel A FCS file(s) RBRCLA_IMM_107_002 | v2.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Panel B FCS file(s) RBRCLA_IMM_108_002 | v2.0

seriesMediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

Automated analysis RBRCLA_IMM_109_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: No, Yes,

Collection buffer manufacturer RBRCLA_IMM_110_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Life Technologies, BD Biosciences,

Collection buffer catalog number number RBRCLA_IMM_111_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 24020, 563503,

FACS buffer manufacturer RBRCLA_IMM_112_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Life Technologies, In house,

FACS buffer catalog number RBRCLA_IMM_113_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 14175, In house,

Enzyme buffer manufacturer RBRCLA_IMM_114_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Life Technologies, N/A,

Enzyme buffer catalog number RBRCLA_IMM_115_002 | v2.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 14025, N/A,

Total spleen leukocyte count RBRCLA_IMM_116_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Clog- events (Panel A) RBRCLA_IMM_117_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

FSC/SSC Singlets (Panel A) RBRCLA_IMM_118_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Effector NK cells - % of live leukocytes (Panel A) RBRCLA_IMM_119_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector Treg cells - % of live leukocytes (Panel A) RBRCLA_IMM_120_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector ?? T cells - % of live leukocytes (Panel A) RBRCLA_IMM_121_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4- NKT cells - % of live leukocytes (Panel A) RBRCLA_IMM_122_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4+ NKT cells - % of live leukocytes (Panel A) RBRCLA_IMM_123_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4+ T helper cells - % of live leukocytes (Panel A) RBRCLA_IMM_124_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD8 T cells - % of live leukocytes (Panel A) RBRCLA_IMM_125_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ NK cells - % of live leukocytes (Panel A) RBRCLA_IMM_126_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ Treg cells - % of live leukocytes (Panel A) RBRCLA_IMM_127_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ ?? T cells - % of live leukocytes (Panel A) RBRCLA_IMM_128_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting NK cells - % of live leukocytes (Panel A) RBRCLA_IMM_129_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting Treg cells - % of live leukocytes (Panel A) RBRCLA_IMM_130_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting ?? T cells - % of live leukocytes (Panel A) RBRCLA_IMM_131_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

?? T cells - % of live leukocytes (Panel A) RBRCLA_IMM_132_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

?? T cells - % of live leukocytes (Panel A) RBRCLA_IMM_133_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD4- NKT cells - % of NKT cells (Panel A) RBRCLA_IMM_134_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD4+ NKT cells - % of NKT cells (Panel A) RBRCLA_IMM_135_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD4+ T cells - % of T cells RBRCLA_IMM_136_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD4+ T helper cells - % of CD4 T cells RBRCLA_IMM_137_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD8+ T cells - % of T cells RBRCLA_IMM_138_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector CD4- NKT cells - % of CD4- NKT cells RBRCLA_IMM_139_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector CD4+ NKT cells - % of CD4+ NKT cells RBRCLA_IMM_140_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector CD4+ T helper cells - % of CD4+ T helper cells RBRCLA_IMM_141_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector CD8+ T cells - % of CD8+ T cells RBRCLA_IMM_142_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector NK cells - % of NK cells (Panel A) RBRCLA_IMM_143_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector Treg cells - % of Treg cells RBRCLA_IMM_144_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Effector ?? T cells - % of ?? T cells RBRCLA_IMM_145_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4- NKT cells - % of CD4- NKT cells RBRCLA_IMM_146_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4+ NKT cells - % of CD4+ NKT cells RBRCLA_IMM_147_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD4+ T helper cells - % of CD4+ T helper cells RBRCLA_IMM_148_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ CD8 T cells - % of CD8+ T cells RBRCLA_IMM_149_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ NK cells - % of NK cells (Panel A) RBRCLA_IMM_150_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ Treg cells - % of Treg cells RBRCLA_IMM_151_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Klrg1+ ?? T cells - % of ?? T cells RBRCLA_IMM_152_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Nave CD8+ T cells - % of CD8+ T cells RBRCLA_IMM_153_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting CD4- NKT cells - % of CD4- NKT cells RBRCLA_IMM_154_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting CD4+ NKT cells - % of CD4+ NKT cells RBRCLA_IMM_155_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting CD4+ T helper cells - % of CD4+ T helper cells RBRCLA_IMM_156_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting CD8+ T cells - % of CD8+ T cells RBRCLA_IMM_157_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting NK cells - % of NK cells (Panel A) RBRCLA_IMM_158_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting Treg cells - % of Treg cells RBRCLA_IMM_159_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Resting ?? T cells - % of ?? T cells RBRCLA_IMM_160_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Treg cells - % of CD4 T cells RBRCLA_IMM_161_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Clog- events (Panel B) RBRCLA_IMM_162_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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FSC/SSC Singlets (Panel B) RBRCLA_IMM_163_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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B1a cells - % of B cells (Panel B) RBRCLA_IMM_164_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

B1b cells - % of B cells (Panel B) RBRCLA_IMM_165_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD11b-high cDC - % of conventional DC (Panel B) RBRCLA_IMM_166_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD11b-low cDC - % of conventional DC (Panel B) RBRCLA_IMM_167_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD161+ B cells - % of live leukocytes (Panel B) RBRCLA_IMM_168_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Transitional 1 B cells - % of B cells (Panel B) RBRCLA_IMM_169_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Transitional 2 B cells - % of B cells (Panel B) RBRCLA_IMM_170_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD11b- NK cells - % of NK cells (Panel B) RBRCLA_IMM_171_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD11b+ NK cells - % of NK cells (Panel B) RBRCLA_IMM_172_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

CD161+ B cells - % of B cells RBRCLA_IMM_173_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Follicular B cells - % of B cells RBRCLA_IMM_174_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Ly6C+ CD11b- NK cells - % of NK cells (Panel B) RBRCLA_IMM_175_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Ly6C+ CD11b+ NK cells - % of NK cells (Panel B) RBRCLA_IMM_176_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Ly6C+ NKT cells - % of NKT cells (Panel B) RBRCLA_IMM_177_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Marginal zone B cells - % of B cells RBRCLA_IMM_178_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Transitional 1 Bcells - % of B cells RBRCLA_IMM_179_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

Transitional 2 B cells - % of B cells RBRCLA_IMM_180_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: %

T cells (Panel A) - cell count RBRCLA_IMM_181_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

?? T cells - cell count RBRCLA_IMM_182_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD8+ T cells - cell count RBRCLA_IMM_183_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector CD8+ T cells - cell count RBRCLA_IMM_184_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting CD8+ T cells - cell count RBRCLA_IMM_185_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Nave CD8+ T cells - cell count RBRCLA_IMM_186_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ CD8 T cells - cell count RBRCLA_IMM_187_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD4 T cells - cell count RBRCLA_IMM_188_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD4+ T helper cells - cell count RBRCLA_IMM_189_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector CD4+ T helper cells - cell count RBRCLA_IMM_190_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting CD4+ T helper cells - cell count RBRCLA_IMM_191_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ CD4+ T helper cells - cell count RBRCLA_IMM_192_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Treg cells - cell count RBRCLA_IMM_193_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector Treg cells - cell count RBRCLA_IMM_194_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting Treg cells - cell count RBRCLA_IMM_195_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ Treg cells - cell count RBRCLA_IMM_196_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

?? T cells - cell count RBRCLA_IMM_197_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector ?? T cells - cell count RBRCLA_IMM_198_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting ?? T cells - cell count RBRCLA_IMM_199_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ ?? T cells - cell count RBRCLA_IMM_200_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

NKT cells (panel A) - cell count RBRCLA_IMM_201_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD4+ NKT cells - cell count RBRCLA_IMM_202_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector CD4+ NKT cells - cell count RBRCLA_IMM_203_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting CD4+ NKT cells - cell count RBRCLA_IMM_204_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ CD4+ NKT cells - cell count RBRCLA_IMM_205_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD4- NKT cells - cell count RBRCLA_IMM_206_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector CD4- NKT cells - cell count RBRCLA_IMM_207_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting CD4- NKT cells - cell count RBRCLA_IMM_208_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ CD4- NKT cells - cell count RBRCLA_IMM_209_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

NK cells (Panel A) - cell count RBRCLA_IMM_210_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Effector NK cells - cell count RBRCLA_IMM_211_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Resting NK cells - cell count RBRCLA_IMM_212_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Klrg1+ NK cells - cell count RBRCLA_IMM_213_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

T cells (panel B) - cell count RBRCLA_IMM_214_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

NKT cells (panel B) - cell count RBRCLA_IMM_215_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Ly6C+ NKT cells - cell count RBRCLA_IMM_216_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

NK cells (Panel B) - cell count RBRCLA_IMM_217_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD11b- NK cells - cell count RBRCLA_IMM_218_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Ly6C+ CD11b- NK cells - cell count RBRCLA_IMM_219_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD11b+ NK cells - cell count RBRCLA_IMM_220_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Ly6C+ CD11b+ NK cells - cell count RBRCLA_IMM_221_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

B cells - cell count RBRCLA_IMM_222_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

B1a cells - cell count RBRCLA_IMM_223_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

B1b cells - cell count RBRCLA_IMM_224_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Follicular B cells - cell count RBRCLA_IMM_225_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Marginal zone B cells - cell count RBRCLA_IMM_226_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Transitional 1 B cells - cell count RBRCLA_IMM_227_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Transitional 2 B cells - cell count RBRCLA_IMM_228_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD161+ B cells - cell count RBRCLA_IMM_229_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Conventional DC - cell count RBRCLA_IMM_230_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD11b-low cDC - cell count RBRCLA_IMM_231_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

CD11b-high cDC - cell count RBRCLA_IMM_232_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Plasmacytoid DC - cell count RBRCLA_IMM_233_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Macrophages - cell count RBRCLA_IMM_234_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Monocytes - cell count RBRCLA_IMM_235_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Granulocytes - cell count RBRCLA_IMM_236_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Eosinophils - cell count RBRCLA_IMM_237_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Unit Measured: count

Derivation: unimplemented()

Panel A anti-CD5 clone RBRCLA_IMM_238_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 53-7.3,

Panel A anti-CD5 fluorochrome RBRCLA_IMM_239_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV421, eF450,

Panel A anti-CD5 RRID RBRCLA_IMM_240_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2737758, AB_1603250,

Panel A anti-CD4 clone RBRCLA_IMM_241_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: RM4-5,

Panel A anti-CD4 fluorochrome RBRCLA_IMM_242_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: FITC, PO,

Panel A anti-CD4 RRID RBRCLA_IMM_243_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394583, AB_1474250,

Panel A anti-CD44 clone RBRCLA_IMM_244_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: IM7,

Panel A anti-CD44 fluorochrome RBRCLA_IMM_245_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE, BV650,

Panel A anti-CD44 RRID RBRCLA_IMM_246_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394649, AB_2562600,

Panel A anti-CD8a clone RBRCLA_IMM_247_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 53-6.7,

Panel A anti-CD8a fluorochrome RBRCLA_IMM_248_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE-CF594, APCeF780,

Panel A anti-CD8a RRID RBRCLA_IMM_249_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_11152075, AB_1272185,

Panel A anti-CD25 clone RBRCLA_IMM_250_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PC61,

Panel A anti-CD25 fluorochrome RBRCLA_IMM_251_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE-Cy7, APC,

Panel A anti-CD25 RRID RBRCLA_IMM_252_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394509, AB_398623,

Panel A anti-CD161 clone RBRCLA_IMM_253_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PK136,

Panel A anti-CD161 fluorochrome RBRCLA_IMM_254_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: APC, PE,

Panel A anti-CD161 RRID RBRCLA_IMM_255_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_398463, AB_394677,

Panel A anti-CD62L clone RBRCLA_IMM_256_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: MEL-14,

Panel A anti-CD62L fluorochrome RBRCLA_IMM_257_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: APC-Cy7, PE-Cy7,

Panel A anti-CD62L RRID RBRCLA_IMM_258_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_10611861, AB_469633,

Panel A Live/Dead stain RBRCLA_IMM_259_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PI, Aqua,

Panel A additional maker 1 name RBRCLA_IMM_260_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: TCRd,

Panel A additional marker 1 clone RBRCLA_IMM_261_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: GL3,

Panel A additional marker 1 fluorochrome RBRCLA_IMM_262_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: FITC,

Panel A additional marker 1 RRID RBRCLA_IMM_263_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394688,

Panel A additional maker 2 name RBRCLA_IMM_264_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD45,

Panel A additional marker 2 clone RBRCLA_IMM_265_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 30-F11,

Panel A additional marker 2 fluorochrome RBRCLA_IMM_266_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV785,

Panel A additional marker 2 RRID RBRCLA_IMM_267_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2564590,

Panel A additional maker 3 name RBRCLA_IMM_268_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD3,

Panel A additional marker 3 clone RBRCLA_IMM_269_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: ebio500A2,

Panel A additional marker 3 fluorochrome RBRCLA_IMM_270_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: Af700,

Panel A additional marker 3 RRID RBRCLA_IMM_271_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_561388,

Panel A additional maker 4 name RBRCLA_IMM_272_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Panel A additional marker 4 clone RBRCLA_IMM_273_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Panel A additional marker 4 fluorochrome RBRCLA_IMM_274_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Panel A additional marker 4 RRID RBRCLA_IMM_275_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Panel A additional maker 5 name RBRCLA_IMM_276_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Panel A additional marker 5 clone RBRCLA_IMM_277_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Panel A additional marker 5 fluorochrome RBRCLA_IMM_278_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Panel A additional marker 5 RRID RBRCLA_IMM_279_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

---

Panel B anti-CD5 clone RBRCLA_IMM_280_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 53-7.3,

Panel B anti-CD5 fluorochrome RBRCLA_IMM_281_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV421, eF450,

Panel B anti-CD5 RRID RBRCLA_IMM_282_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2737758, AB_1603250,

Panel B anti-Ly6G clone RBRCLA_IMM_283_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 1A8,

Panel B anti-Ly6G fluorochrome RBRCLA_IMM_284_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV421, BV785,

Panel B anti-Ly6G RRID RBRCLA_IMM_285_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2737756, AB_2566317,

Panel B anti-CD19 clone RBRCLA_IMM_286_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 1D3,

Panel B anti-CD19 fluorochrome RBRCLA_IMM_287_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV510, PE-Cy7,

Panel B anti-CD19 RRID RBRCLA_IMM_288_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2737915, AB_394495,

Panel B anti-Ly6C clone RBRCLA_IMM_289_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AL-21, HK1.4,

Panel B anti-Ly6c fluorochrome RBRCLA_IMM_290_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: FITC, PerCP Cy5.5,

Panel B anti-Ly6c RRID RBRCLA_IMM_291_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394628, AB_2723343,

Panel B anti-CD21/35 clone RBRCLA_IMM_292_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 7G6,

Panel B anti-CD21/35 fluorochrome RBRCLA_IMM_293_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE, BV605,

Panel B anti-CD21/35 RRID RBRCLA_IMM_294_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394532, AB_2738048,

Panel B anti-CD11b clone RBRCLA_IMM_295_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: M1/70,

Panel B anti-CD11b fluorochrome RBRCLA_IMM_296_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE-CF594,

Panel B anti-CD11b RRID RBRCLA_IMM_297_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_11154216,

Panel B anti-CD11c clone RBRCLA_IMM_298_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: HL3,

Panel B anti-CD11c fluorochrome RBRCLA_IMM_299_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE-Cy7, APC-Cy7,

Panel B anti-CD11c RRID RBRCLA_IMM_300_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_647251, AB_10611727,

Panel B anti-CD161 clone RBRCLA_IMM_301_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PK136,

Panel B anti-CD161 fluorochrome RBRCLA_IMM_302_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: APC, PE,

Panel B anti-CD161 RRID RBRCLA_IMM_303_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_398463, AB_394677,

Panel B anti-MHCII clone RBRCLA_IMM_304_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: M5/114.15.2,

Panel B anti-MHCII fluorochrome RBRCLA_IMM_305_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: APC-eFluor(R) 780, BV650,

Panel B anti-MHCII RRID RBRCLA_IMM_306_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_1548783, AB_2565975,

Panel B Live/Dead stain RBRCLA_IMM_307_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PI, Aqua,

Panel B additional maker 1 name RBRCLA_IMM_308_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD23,

Panel B additional marker 1 clone RBRCLA_IMM_309_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: B3B4,

Panel B additional marker 1 fluorochrome RBRCLA_IMM_310_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: FITC,

Panel B additional marker 1 RRID RBRCLA_IMM_311_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_394653,

Panel B additional maker 2 name RBRCLA_IMM_312_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: F4/80,

Panel B additional marker 2 clone RBRCLA_IMM_313_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BM8,

Panel B additional marker 2 fluorochrome RBRCLA_IMM_314_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: APC,

Panel B additional marker 2 RRID RBRCLA_IMM_315_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_469452,

Panel B additional maker 3 name RBRCLA_IMM_316_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD45,

Panel B additional marker 3 clone RBRCLA_IMM_317_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: 30-F11,

Panel B additional marker 3 fluorochrome RBRCLA_IMM_318_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV510,

Panel B additional marker 3 RRID RBRCLA_IMM_319_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2561392,

Panel B additional maker 4 name RBRCLA_IMM_320_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD43,

Panel B additional marker 4 clone RBRCLA_IMM_321_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: S7,

Panel B additional marker 4 fluorochrome RBRCLA_IMM_322_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: BV650,

Panel B additional marker 4 RRID RBRCLA_IMM_323_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_740464,

Panel B additional maker 5 name RBRCLA_IMM_324_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: CD317,

Panel B additional marker 5 clone RBRCLA_IMM_325_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: ebio927,

Panel B additional marker 5 fluorochrome RBRCLA_IMM_326_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: PE-Cy7,

Panel B additional marker 5 RRID RBRCLA_IMM_327_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Options: AB_2573440,

Analysis results file RBRCLA_IMM_328_001 | v1.0

mediaParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

Description: A csv file with the analysis results for the mutant line