

PNH

Normal studies, PNH Patients
and Interesting Cases

PNH Report Formats

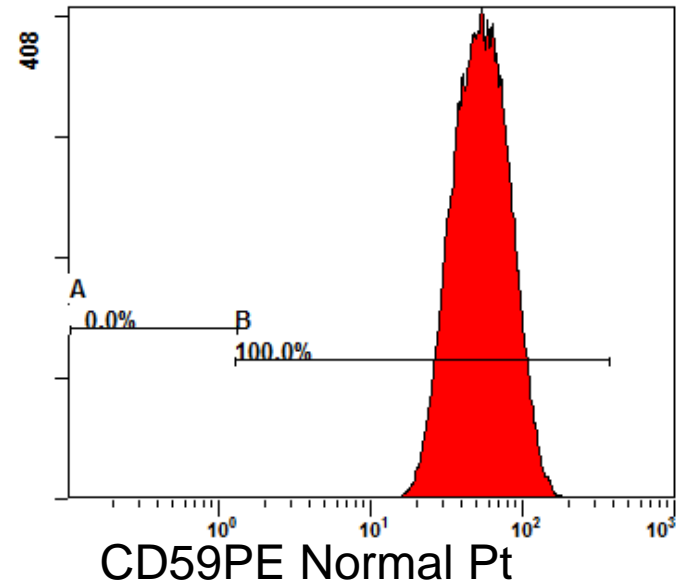
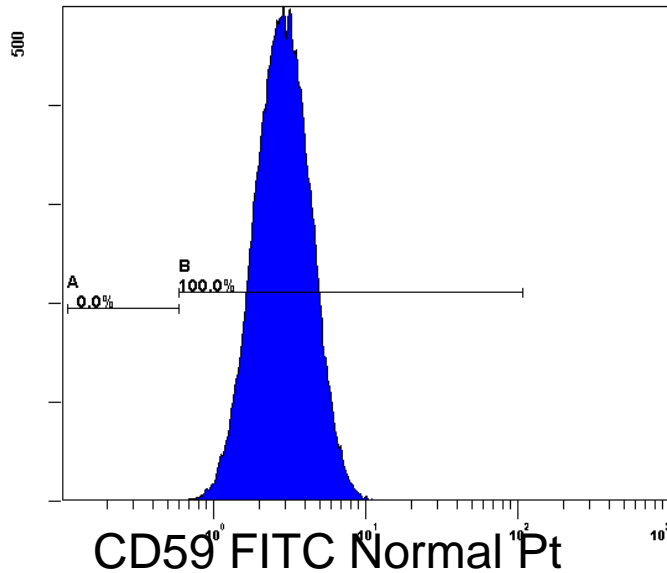
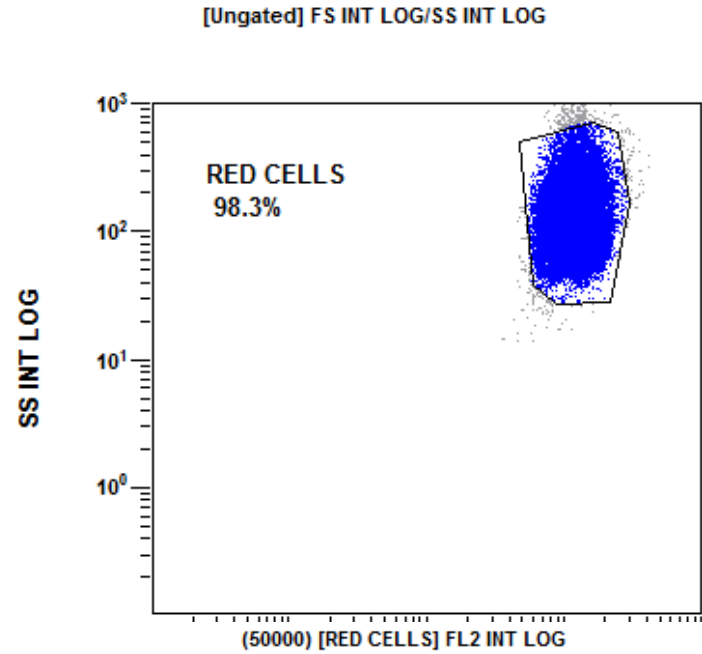


DOUGLASS
HANLY MOIR
PATHOLOGY

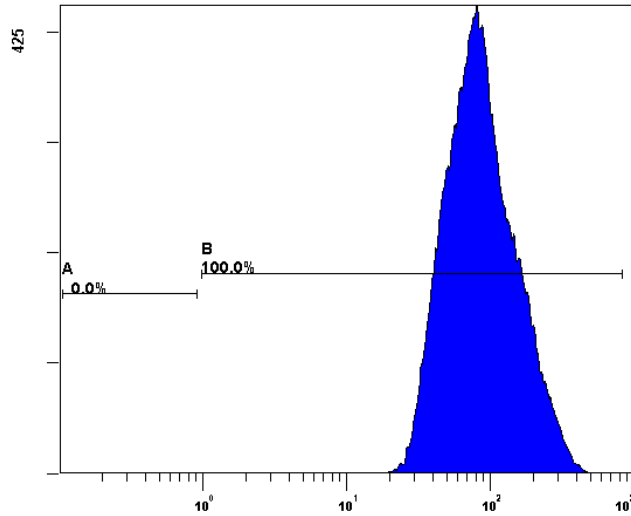
"We take it personally"

Dr Elizabeth Bernal

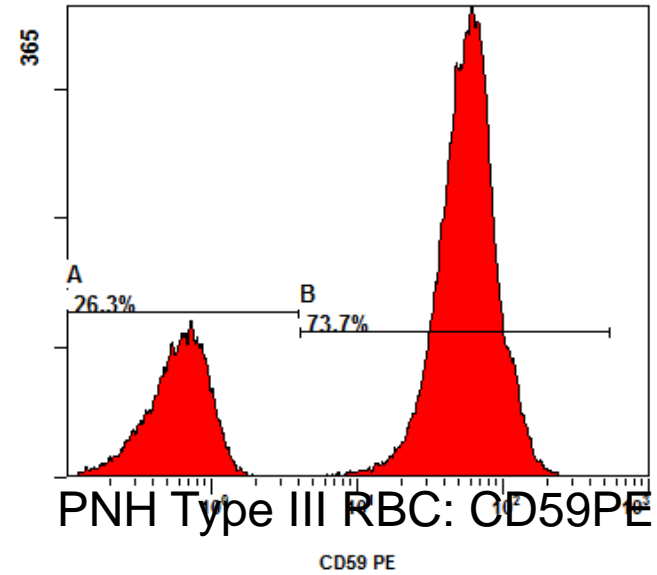
Evaluation of RBC for PNH: CD59 FITC vs CD59PE



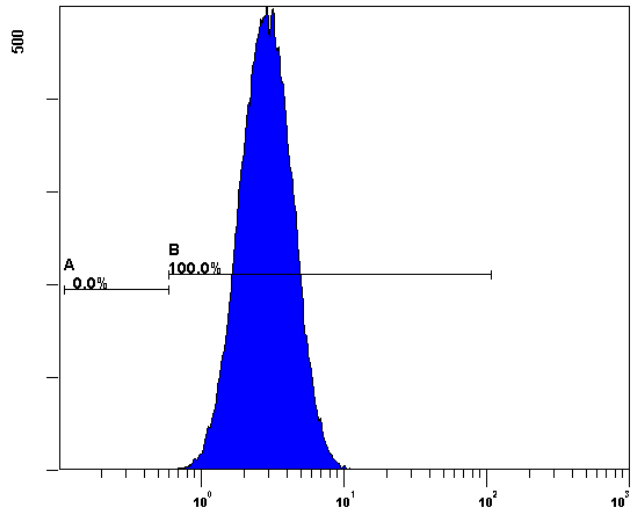
Red cell analysis: CD59 PE vs CD59FITC



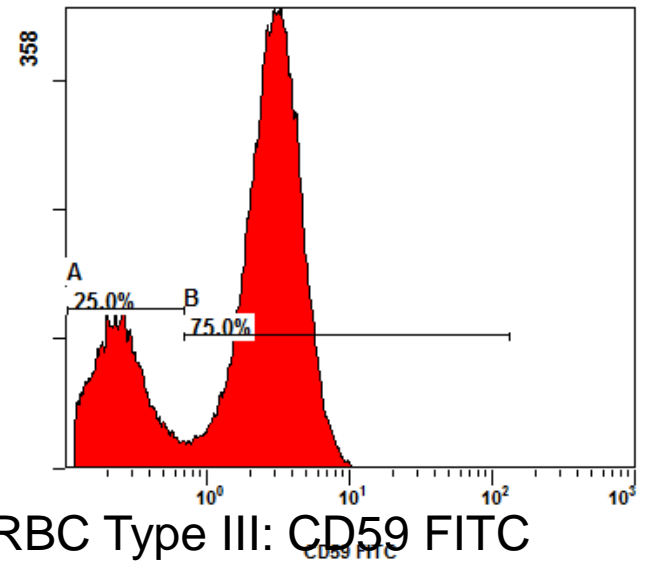
Normal Type I RBC: CD59 PE



PNH Type III RBC: CD59 PE

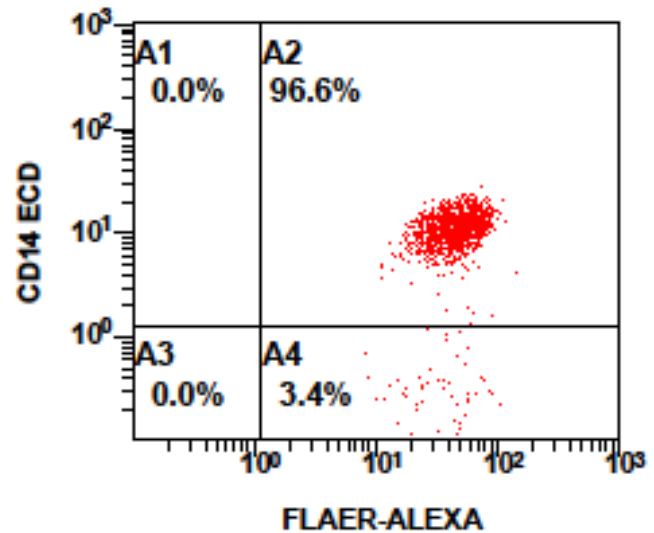
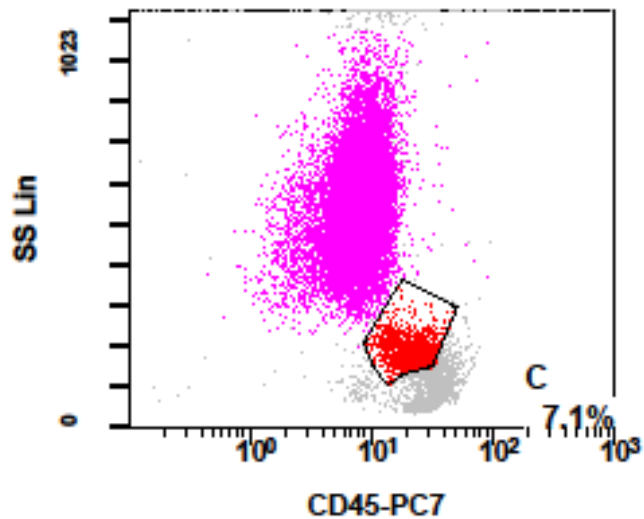
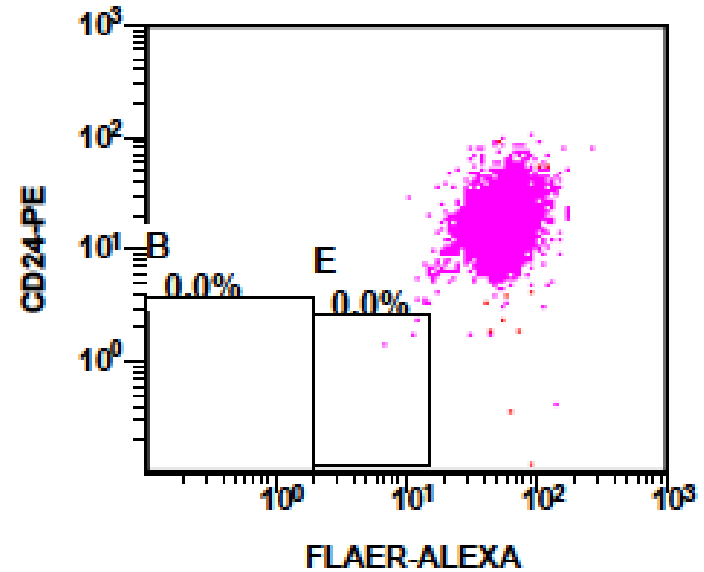
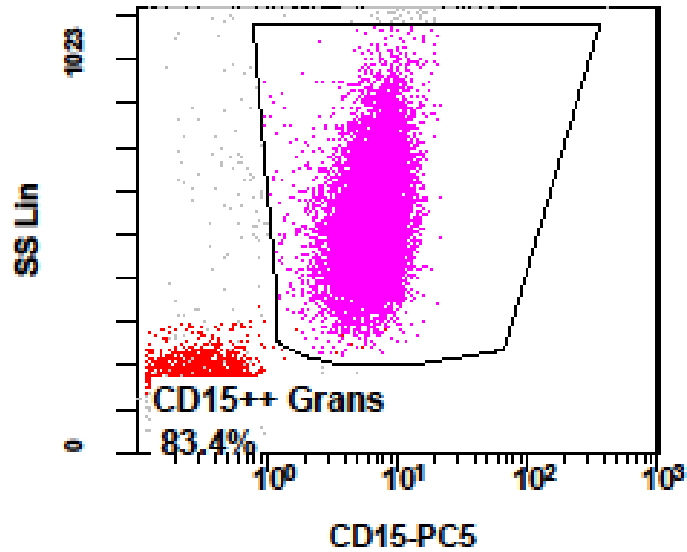


Normal Type I RBC: CD59 FITC

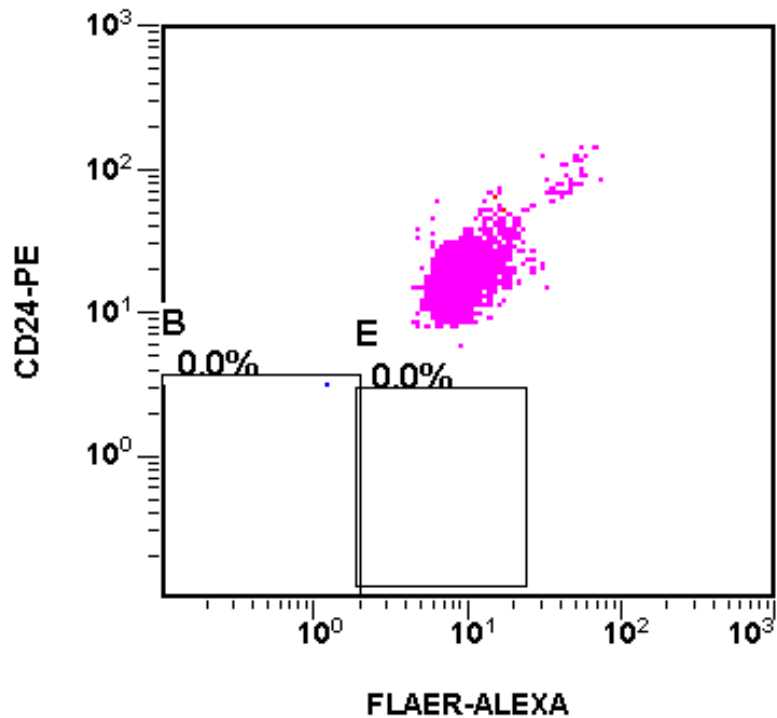


PNH RBC Type III: CD59 FITC

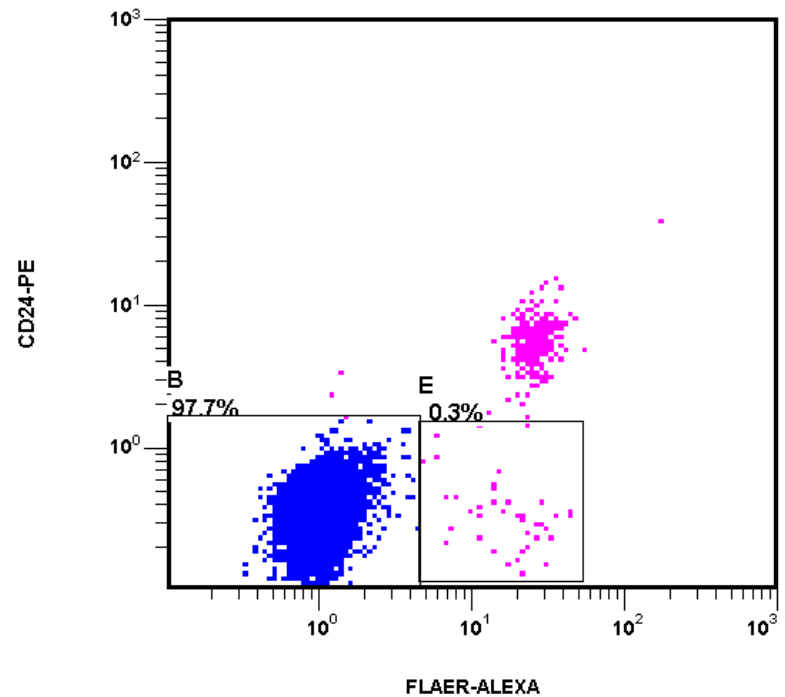
Normal Control: Granulocytes and Monocytes



Granulocytes

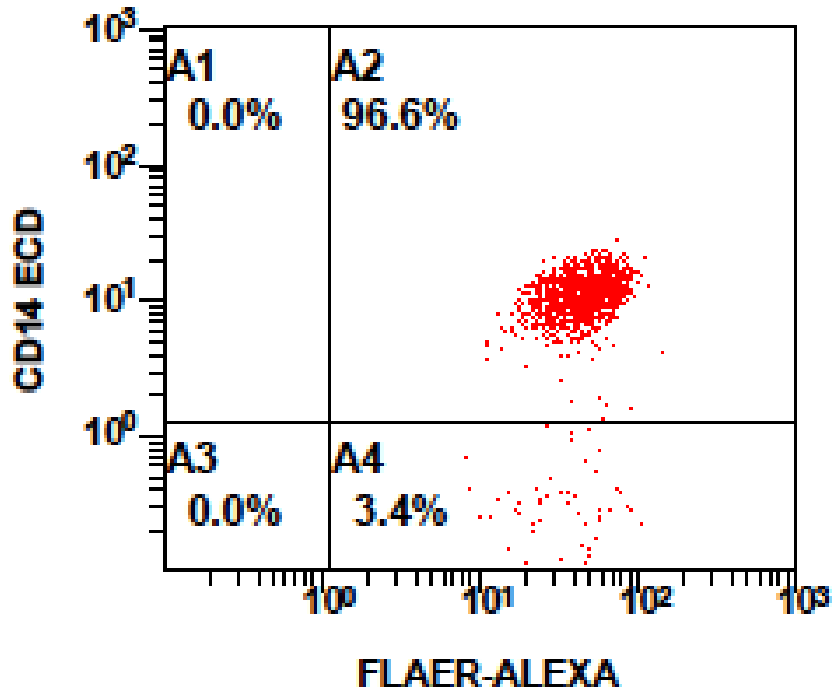


Normal Control

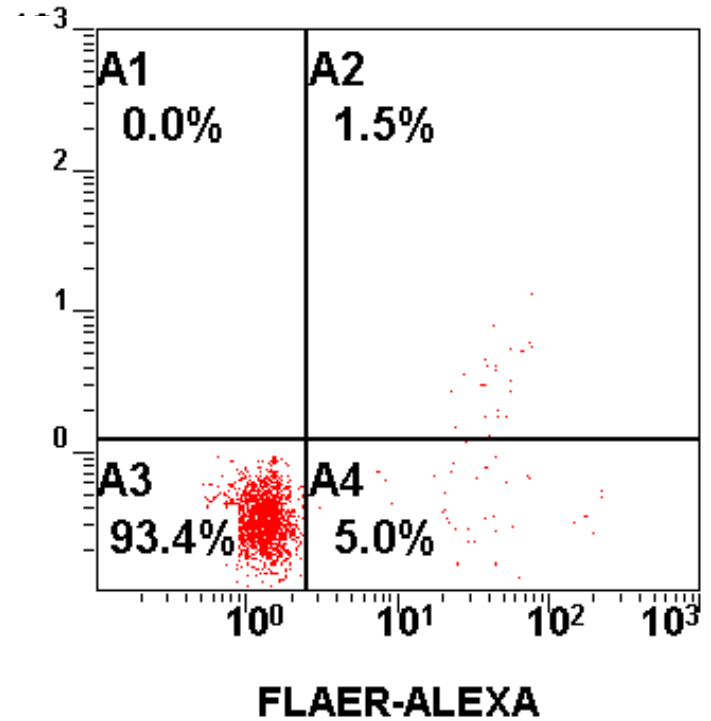


PNH patient: clone size 98%
NB eosinophils are FLAER+, CD24-

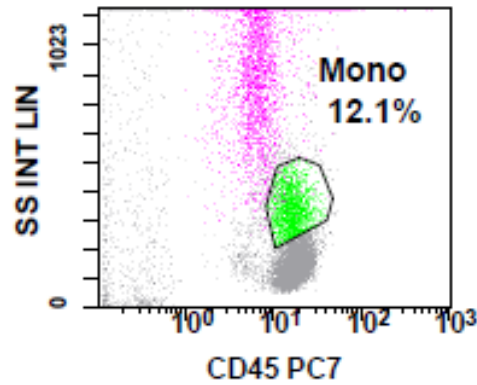
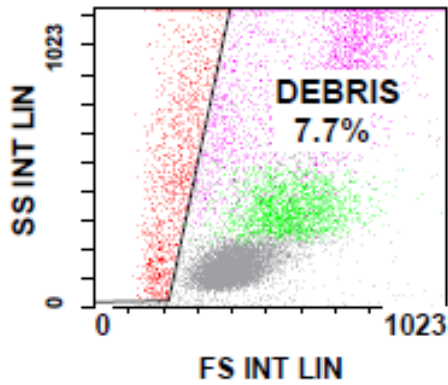
Monocytes



Normal

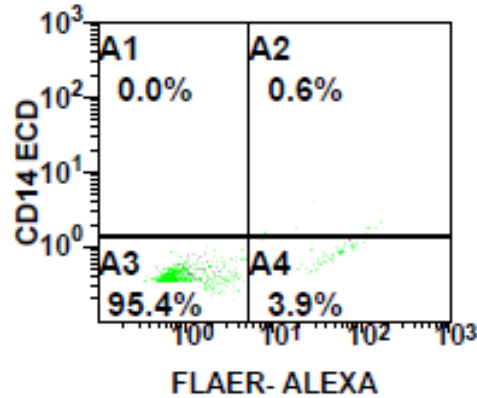
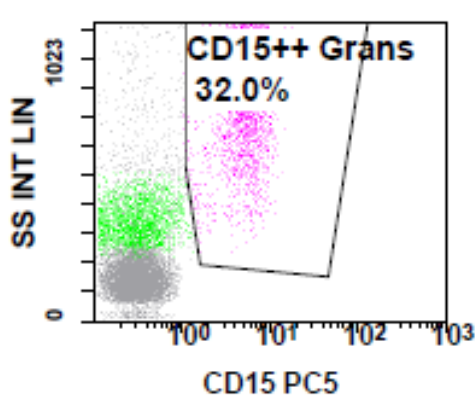


PNH patient:
clone size 93%

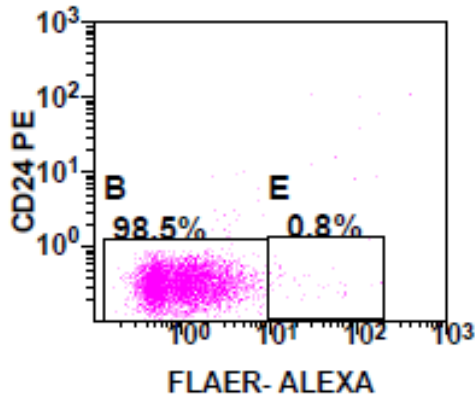


Granulocyte and
monocyte clone
98.5%

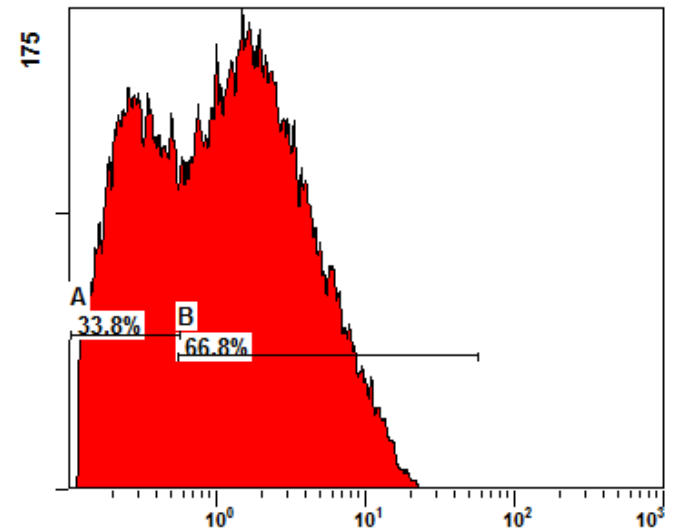
[NOT (DEBRIS)] FL4 INT LOG/[NOT (DEBRIS) AND Mono] FL1 INT LOG/FL3 INT



(DEBRIS) AND CD15++ Grans] FL1 INT LOG/FL2 INT LOG



(50000) [RED CELLS] FL2 INT LOG



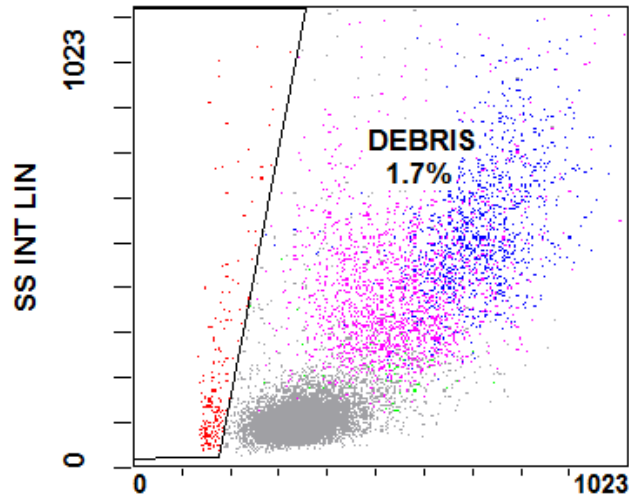
CD59PE: Types II and III

Unexpected findings

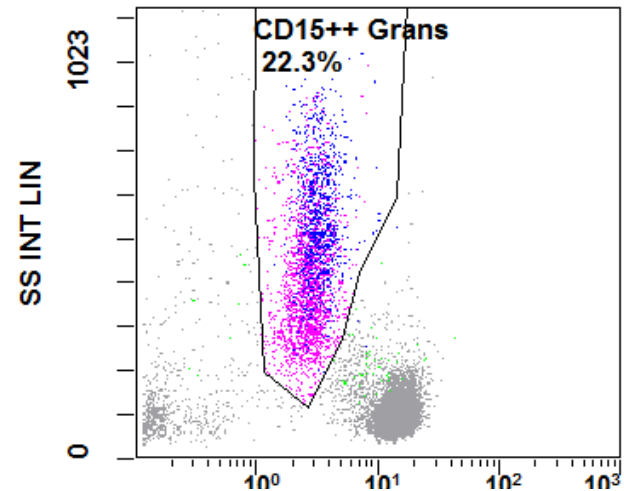


The peripheral blood film must always be examined when the PNH study shows unexpected results!!

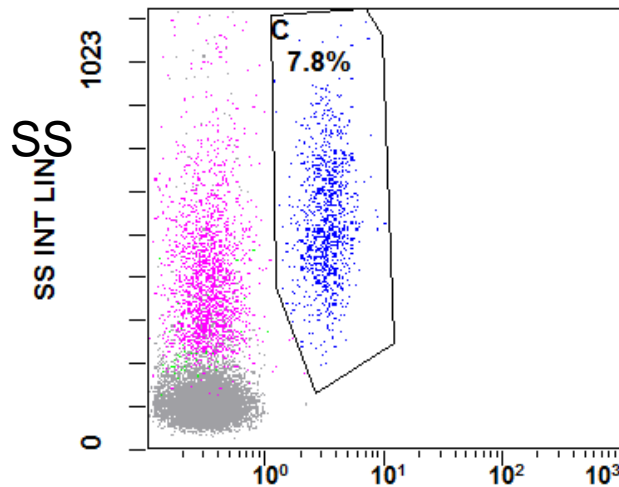
PNH study in APMML patient...



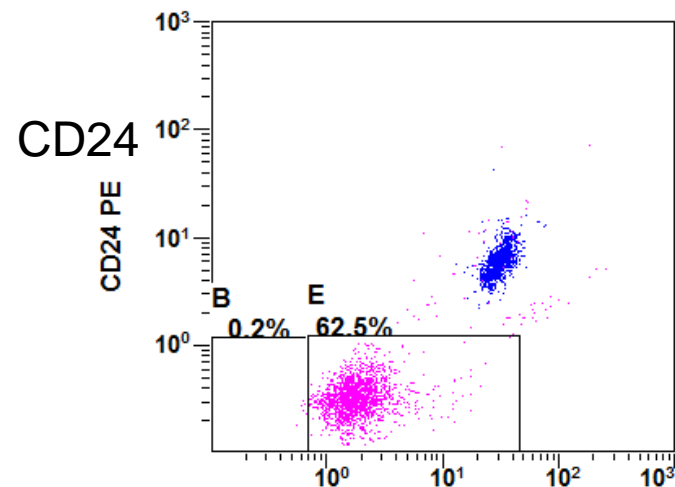
FS



CD45 gate with CD15+ and CD15- populations

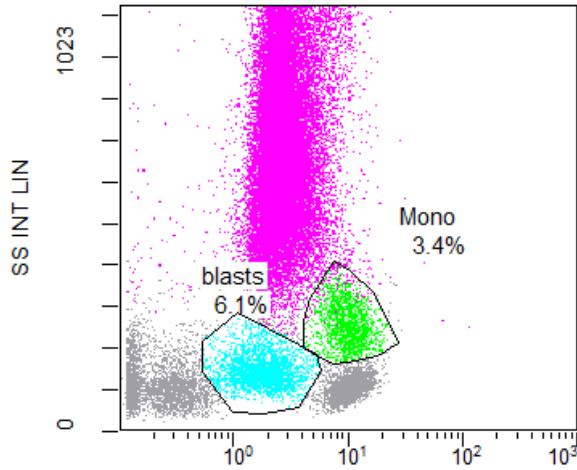


CD15- promyelocytes (pink)



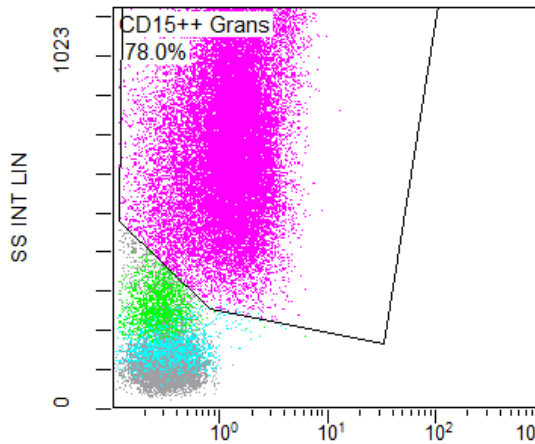
FLAER-ALEXA

Patient with circulating blasts



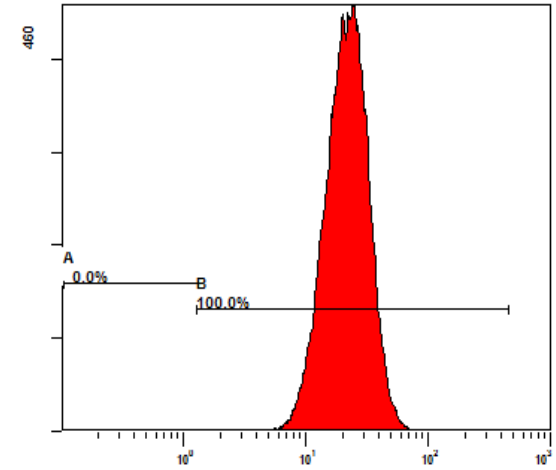
CD45

[NOT (DEBRIS) AND Mono] FL1 INT LOG/FL3 INT LOG

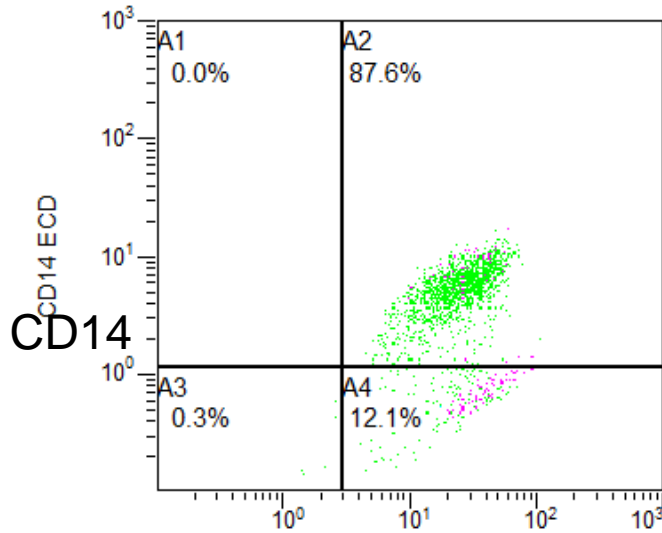


CD15

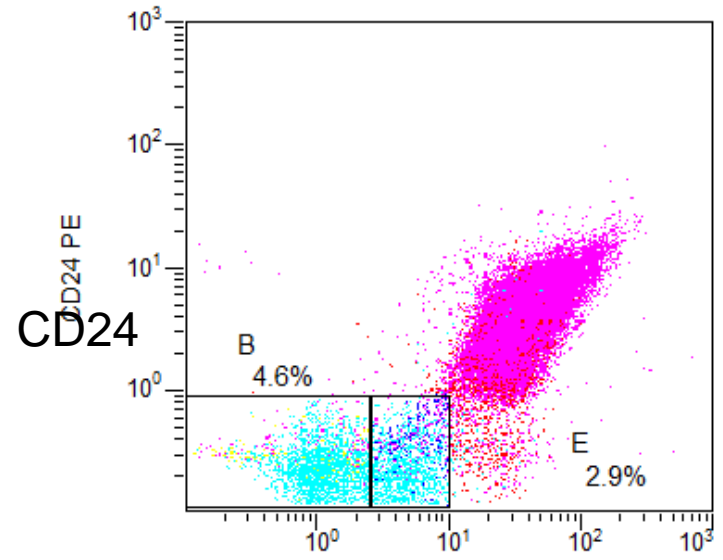
(SS INT LIN) CD15++ Gr



CD59



FLAER-ALEXA



FLAER-ALEXA

Examples of reports for PNH:

FLOW CYTOMETRY REPORT- PNH evaluation

Specimen: Peripheral blood

Antibodies:

Immunophenotypic analysis was performed using gating antibodies CD45, CD15,CD33, and the GPI-linked antibodies CD59, CD14, CD24, as well as fluorescent Aerolysin (FLAER).

Flow Results:

Red Blood Cells: No evidence of decreased or absent CD59 expression

Granulocytes: No evidence of decreased or absent expression of FLAER or CD24

Monocytes: No evidence of decreased or absent expression of FLAER or CD14

DIAGNOSIS: **NO PHENOTYPIC EVIDENCE OF PAROXYSMAL NOCTURNAL HAEMOGLOBINURIA (PNH)**

Comment:

Flow cytometric analysis does not show any evidence of a PNH clone based upon analysis of a variety of GPI-linked antibodies on red cells and granulocytes/monocytes. These findings do not support a diagnosis of PNH. Clinical correlation is recommended.

FLOW CYTOMETRY REPORT- PNH evaluation

Specimen:

Peripheral blood

Antibodies:

Immunophenotypic analysis was performed using gating antibodies CD45, CD15, CD33 and the GPI-linked antibodies CD59, CD14, CD24, as well as fluorescent Aerolysin (FLAER).

Flow Results:

Cell Type	Deficiency	Result
Red Blood Cells	Type I (normal CD59 expression)	%
	Type II (partial CD59 deficiency)	%
	Type III (complete CD59 deficiency)	%
Monocytes	FLAER/CD14 Deficiency	%
Granulocytes	FLAER/CD24 Deficiency	%

DIAGNOSIS:

WBC: PNH CLONE IDENTIFIED (%)

RBC: PNH CLONE IDENTIFIED (%)

Comment:

Flow cytometric analysis shows a PNH clone within the RBCs, granulocytes/ monocytes. These findings are consistent with a diagnosis of paroxysmal nocturnal hemoglobinuria (PNH). Any potential difference in clone size between the white blood cells and the red blood cells may be due to hemolysis and/or recent transfusion.