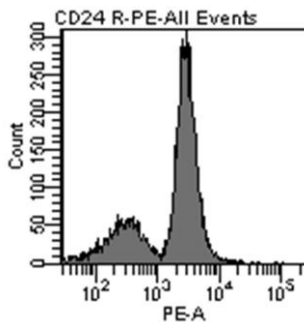


## FLOW CYTOMETRY

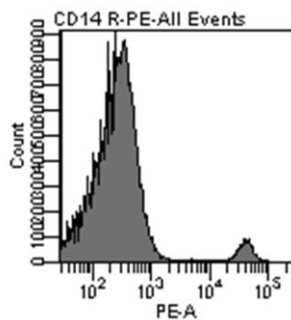
**NEW - NEW - NEW- NEW**

# Monoclonal antibodies against GPI-anchored proteins

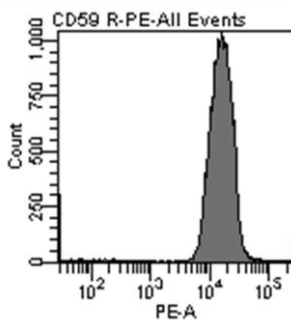
IQ Products' antibodies against the GPI-anchored proteins CD24 R-PE, CD14 R-PE, CD55 R-PE and CD59 R-PE.



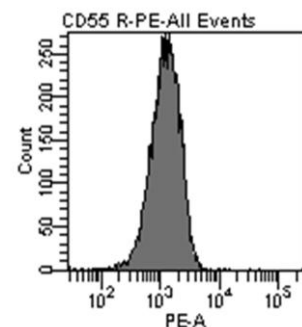
CD24 R-PE, clone SN3, GPI-anchored protein for granulocytes  
*(figure shows all white blood cells)*



CD14 R-PE, clone UCHM1, GPI-anchored protein for monocytes  
*(figure shows all white blood cells)*



CD59 R-PE, clone MEM-43, (left) and CD55 R-PE, clone NaM16-4D3, (right) GPI-anchored protein for erythrocytes  
*(figure shows all white blood cells)*



## Special features

- Antibodies which specifically detect GPI-anchored proteins
- Antibody conjugates that allow PNH clone analysis<sup>[3]</sup> by flow cytometry
- Conjugates compatible with FLAER

## Background information

Paroxysmal Nocturnal Hemoglobinuria (PNH) is characterized by the continuous destruction of red blood cells. This monogenetic disease is caused by mutations in the Phosphatidylinositol N-acetylglucosaminyl-transferase subunit A (*PIGA*) gene, which is essential in the biosynthesis of Glycosylphosphatidylinositol (GPI) anchors. Several proteins require GPI anchors for membrane attachment and this group of proteins is consequently affected in PNH patients. GPI-anchored proteins include CD55 and CD59, which protect erythrocytes against complement attack. CD55 and CD59 deficiency on erythrocyte membranes leads to intravascular erythrocyte lysis (and hence hemoglobinuria) and presents patients with an enhanced risk for thrombosis <sup>[1,2]</sup>.

PNH is a very rare disease with an estimated incidence of 1.3 per million inhabitants <sup>[1]</sup>. However, PNH is associated with several clinical symptoms, which also occur in other diseases. Therefore, PNH testing is not only recommended for patients that develop PNH, but also for patients with PNH-like symptoms in disorders such as Aplastic Anemia (AA) and Myelodysplastic syndrome (MDS). Both AA and MDS are characterized by diminished production of red- and white blood cells and thrombocytes in the bone marrow.

## Application

For diagnosis and monitoring of PNH flow cytometry is the preferred method. As an analytical tool, flow cytometry is performed using monoclonal antibodies directed against GPI-anchored proteins present on the surface of red blood cells (RBCs) and white blood cells (WBCs). In addition to antibody-mediated PNH cell detection, fluorescently (Alexa488) labeled inactive toxin aerolysin (FLAER) detects ALL GPI-anchored proteins expressed on the surface of leukocytes <sup>[3]</sup>.

## References:

1. Michael J. Borowitz, Fiona E. Craig, Joseph A. DiGiuseppe, Andrea J. Illingworth, Wendell Rosse, D. Robert Sutherland, Carl T. Wittwer, and Stephen J. Richards; On behalf of the Clinical Cytometry Society. *Guidelines for the Diagnosis and Monitoring of Paroxysmal Nocturnal Hemoglobinuria and Related Disorders by Flow Cytometry Cytometry Part B (Clinical Cytometry)* 78B:211-230 (2010)
2. Parker C., Omine M., Richards S., et al; for International PNH Interest Group. *Diagnosis and management of paroxysmal nocturnal hemoglobinuria*. Blood. 2005; 106:3699-3709.
3. Brodsky R.A., Mukhina G.L., Li S., et al. *Improved detection and characterization of paroxysmal nocturnal hemoglobinuria using fluorescent aerolysin*. Am J Clin Pathol. 2000; 114:459-466.

## Available antibodies and conjugates from IQ Products

Item	Clone	FITC	R-PE	CyQ	APC	PerCP
<b>Erythrocytes</b>						
CD55	NaM16-4D3		IQP-520R		IQP-520A	
CD59	MEM-43		IQP-561R			
CD59	NaM172-2B5		IQP-521R		IQP-521A	
CD235a	NaM10-6G4	IQP-145F				
<b>Monocytes</b>						
CD14	UCHM1		IQP-143R IVD/CE		IQP-143A IVD/CE	
CD33	WM53		IQP-146R IVD/CE		IQP-146A	
CD45	ML2		IQP-124R IVD/CE	IQP-124C IVD/CE	IQP-124A IVD/CE	IQP-124PC IVD/CE
<b>Granulocytes</b>						
CD15	BRA-4F1		IQP-129R			
CD24	SN3		IQP- 559R			
CD45	ML2		IQP-124R IVD/CE	IQP-124C IVD/CE	IQP-124A IVD/CE	IQP-124PC IVD/CE

**IVD**  in vitro diagnostic medical device

The products are registered as IVD in the countries belonging to the European Union.

**FLOW CYTOMETRY**