# BD PAC-1

## Monoclonal Antibodies Detecting Human Antigens

| Form | Catalog number |
|---|---|
| Pure | 340535 |
| FITC | 340507 |

Product availability varies by region. Contact BD Biosciences Customer Support or your local sales representative for information.

## Research Applications

Research applications include studies of:

- Hemostasis and thrombosis in clinical disorders and vascular injury[1-4]
- Metabolic reactions responsible for platelet surface changes[1,2,5-8]
- Structure and functions of gpIIb/IIIa and its adhesive ligands[5,7,9,10]
- Therapeutic strategies to prevent platelet activation[1,2,3,4,11]

## Description

### Specificity

The PAC-1 antibody recognizes an epitope on the glycoprotein IIb/IIIa (gpIIb/IIIa, $\alpha_{IIb}\beta_3$) complex of activated platelets at or near the platelet fibrinogen receptor.[1,2,9,12-15]

### Antigen distribution

The gpIIb/IIIa complex is a member of a family of heterodimeric adhesive protein receptors found on a variety of cell types that have been named the integrin or the cytoadhesion family.[11,15-16]

The gpIIb/IIIa complex is located on the surface membrane of resting platelets.[3] Platelet activation induces a calcium-dependent conformational change in gpIIb/IIIa that exposes a ligand binding site.[3,11,14,16] Four adhesive macromolecules are capable of interacting with the activated form of gpIIb/IIIa: fibrinogen, von Willebrand factor (vWf), fibronectin, and vitronectin.[3,6,10,11,15] The binding of fibrinogen to the gpIIb/IIIa receptor is required for platelet aggregation.[1,9,11,14,16] PAC-1 binds only to activated platelets and appears to be specific for this recognition site within gpIIb/IIIa.[4,9-11] Approximately 45,000 to 50,000 gpIIb/IIIa receptors appear on the platelet surface upon activation.[3,14] PAC-1 inhibits fibrinogen-mediated platelet aggregation.[11,14]

### Clone

The PAC-1 antibody is derived from the fusion of SP-2 mouse myeloma cells with splenic lymphocytes from BALB/c mice that were immunized with human platelets.[11,14]

### Composition

The PAC-1 antibody is a pentameric IgM κ-immunoglobulin.[1,3,4,9,14]

### Product configuration

The following are supplied in phosphate buffered saline (PBS) containing a stabilizer and a preservative.

| Form | Number of tests | Volume per test (µL) | Amount provided (µg) | Total volume (mL) | Concentration (µg/mL) | Stabilizer | Preservative |
|---|---|---|---|---|---|---|---|
| Pure | N/A | N/A | 200 | 0.2 | 1,000 | N/A | 0.01% Sodium azide |
| FITC | 50 | 20 | 25 | 1.0 | 25 | Gelatin | 0.1% Sodium azide |

## Procedure

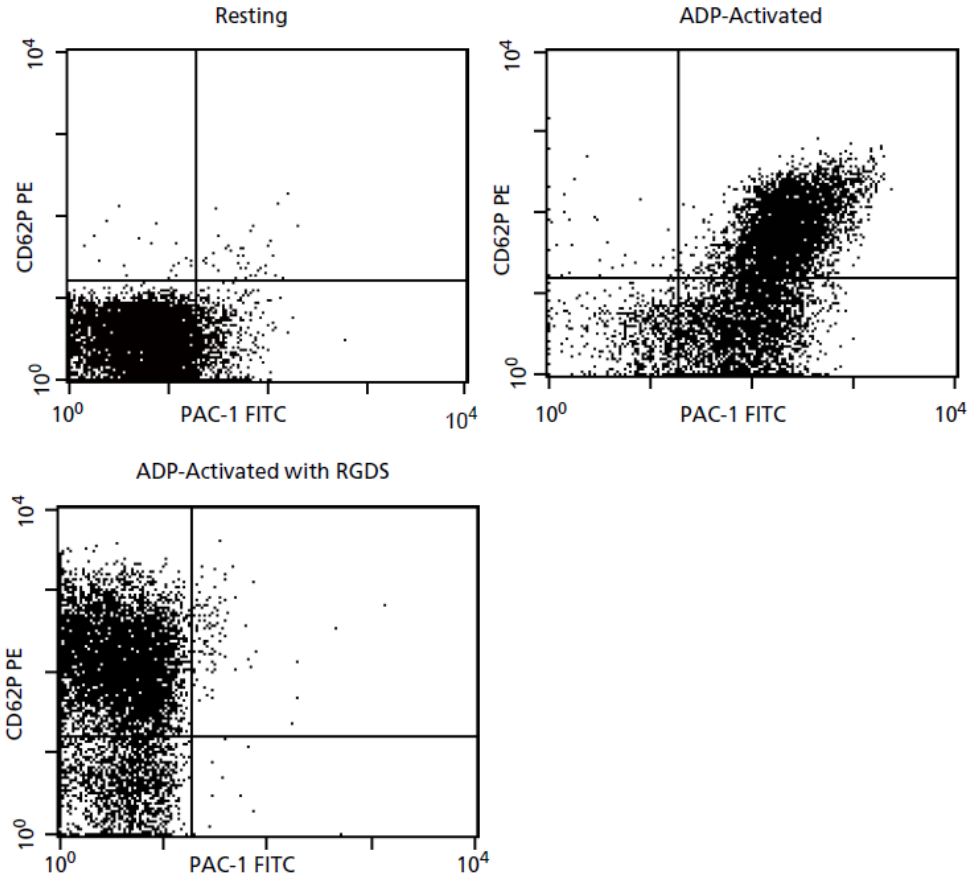
Go to our website (bdbiosciences.com) or contact your local BD representative for the lyse/wash protocol for direct immunofluorescence.

Activation-dependent antibody binding can be affected by fixation and choice of anticoagulant. PAC-1 will not bind fixed platelets or EDTA-treated blood. For details on preparation and staining of platelets, see the Becton Dickinson procedure, Three-Color Analysis of Platelet Activation, *Monoclonal Antibodies Source Book,* Section 2.25.

## Representative Data

Flow cytometric analysis was performed on ADP-activated platelets with an FL3 threshold gate set on CD61 PerCP (positive events). Specificity of PAC-1 binding is demonstrated by staining in the presence of RGDS peptide, a competitive inhibitor.[15] Laser excitation is at 488 nm. Representative data analyzed with a BD flow cytometer is shown in the following plots.

**Figure 1** Two-parameter displays of platelets analyzed with a BD flow cytometer



## Handling and Storage

Store vials at 2–8 °C. Conjugated forms should not be frozen. Protect from exposure to light. Each reagent is stable until the expiration date shown on the bottle label when stored as directed. Refer to the vial label for antibody concentration.

## Warning

All biological specimens and materials coming in contact with them are considered biohazards. Handle as if capable of transmitting infection[17,18] and dispose of with proper precautions in accordance with federal, state, and local regulations. Never pipette by mouth. Wear suitable protective clothing, eyewear, and gloves.

Go to regdocs.bd.com to download the Safety Data Sheet.

## Characterization

To ensure consistently high-quality reagents, each lot of antibody is tested for conformance with characteristics of a standard reagent. Representative flow cytometric data is included in this data sheet.

## Warranty

Unless otherwise indicated in any applicable BD general conditions of sale for non-US customers, the following warranty applies to the purchase of these products.

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## References


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