

## Technical Data Sheet

**BUV661 Mouse Anti-Human IL-3R# (CD123)**

## Product Information

Material Number:	751838
Size:	50 µg
Clone:	6H6
Alternative Name:	IL3RA; IL3R; IL-3R-alpha; IL-3RA
Reactivity:	Human (Tested in Development)
Isotype:	Mouse BALB/c IgG1, κ
Immunogen:	Human IL3RA Transfected Cell Line
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

**Description**

The 6H6 monoclonal antibody specifically recognizes the Interleukin-3 receptor alpha chain (IL-3Ra) which is also known as CD123. IL-3Ra (CD123) is a ~70 kDa type I transmembrane glycoprotein that is encoded by IL3RA (interleukin 3 receptor subunit alpha) which belongs to the type I cytokine receptor family within the immunoglobulin gene superfamily. This receptor chain consists of an extracellular region that contains an immunoglobulin-like N-terminal domain (NTD) with a fibronectin type III (FnIII) fold followed by two more FnIII domains that form the cytokine receptor module (CRM), a transmembrane region, and an intracellular tail. IL-3Ra (CD123) binds IL-3 specifically and with low affinity. IL-3Ra (CD123) forms a high-affinity signaling receptor for IL-3 (IL-3R) with the β common chain (βc; also known as, CD131) that is shared with the heterodimeric IL-5 and granulocyte-macrophage colony-stimulating factor (GM-CSF) receptors. IL-3Ra (CD123) is variably expressed on certain hematopoietic progenitor cells, basophils, eosinophils, mast cells, monocytes, macrophages, dendritic cells, megakaryocytes, and on some B cells, endothelial cells, and leukemia cells. Bound IL-3 can signal through IL-3R to promote the activation, proliferation, differentiation, and viability of these cells. Amongst monoclonal antibodies specific for human IL-3Ra (CD123), the 6H6 and 9F5 antibodies do not block IL-3 binding to the IL-3R whereas the 7G3 antibody does block IL-3 binding to its receptor in a dose-dependent manner.

The antibody was conjugated to BD Horizon™ BUV661 which is part of the BD Horizon Brilliant™ Ultraviolet family of dyes. This dye is a tandem fluorochrome of BD Horizon BUV395 with an Ex Max of 348-nm and an acceptor dye with an Em Max at 661-nm. BD Horizon Brilliant BUV661 can be excited by the ultraviolet laser (355 nm) and detected with a 670/25 filter and a 630 nm LP. Due to cross laser excitation of this dye, there may be significant spillover into channels detecting APC-like emissions (eg, 670/25-nm filter).

Due to spectral differences between labeled cells and beads, using BD™ CompBeads can result in incorrect spillover values when used with BD Horizon BUV661 reagents. Therefore, the use of BD CompBeads or BD CompBeads Plus to determine spillover values for these reagents is not recommended. Different BUV661 reagents (eg, CD4 vs. CD45) can have slightly different fluorescence spillover therefore, it may also be necessary to use clone-specific compensation controls when using these reagents.

**Preparation and Storage**

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze. The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated to the dye under optimum conditions that minimize unconjugated dye and antibody.

**Recommended Assay Procedure**

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to BD CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and BD CompBead to ensure that BD CompBeads are appropriate for your specific cellular application.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect

data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

Note: When using high concentrations of antibody, background binding of this dye to erythroid cell subsets (mature erythrocytes and precursors) has been observed. For researchers studying these cell populations, or in cases where light scatter gating does not adequately exclude these cells from the analysis, this background may be an important factor to consider when selecting reagents for panel(s).

## Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	
554657	Stain Buffer (BSA)	500 mL	
563794	Brilliant Stain Buffer	100 Tests	
555899	Lysing Buffer	100 mL	
566349	Brilliant Stain Buffer	1000 Tests	
566385	Brilliant Stain Buffer Plus	1000 Tests	
349202	Lysing Solution 10X Concentrate	100 NA	
564219	Human BD Fc Block™	50 mg	
612966	BUV661 Mouse IgG1, $\kappa$ Isotype Control	50 $\mu$ g	X40

## Product Notices

1. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
2. Researchers should determine the optimal concentration of this reagent for their individual applications.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
6. Please refer to [www.bdbiosciences.com/us/s/resources](http://www.bdbiosciences.com/us/s/resources) for technical protocols.
7. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
8. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
9. BD Horizon Brilliant Ultraviolet 661 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,575,303; 8,354,239.

## References

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