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InnoCyto Inc.

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Anti-human CD94 Antibody

Catalog Number:	120901, 120902
Size:	25 µg, 100 µg
Target Name:	CD94, KP43
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	094AB
Application:	Flow Cytometry
Reactivity:	Human
Format:	Purified
Isotype:	Rabbit IgG
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Protein Concentration:	0.5 mg/mL
Storage & Handling:	The antibody solution should be stored between 2°C and 8°C
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.2 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application
Isotype Control:	303301
RRID:	AB_3759146

BACKGROUND INFORMATION

CD94, encoded by the KLRD1 gene, is a C-type lectin-like receptor expressed primarily on natural killer (NK) cells and subsets of T cells, particularly NKT-like and CD8+ T cells. CD94 plays an important role in regulating cytotoxic lymphocyte activity by recognizing major histocompatibility complex class I (MHC-I)-related molecules and helping NK cells distinguish healthy cells from cells undergoing infection or transformation. Its function depends strongly on the receptor it associates with, allowing CD94-containing complexes to deliver either inhibitory or activating signals.

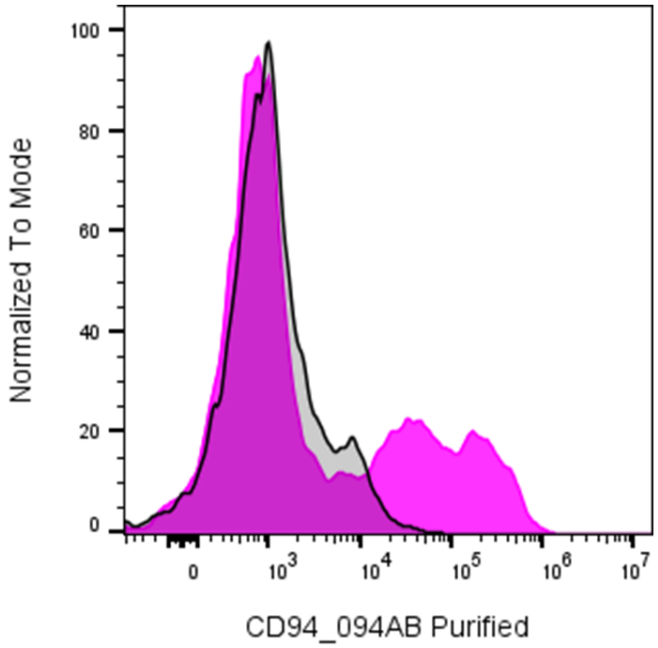
CD94 is a type II transmembrane glycoprotein belonging to the C-type lectin-like receptor family. It contains a short cytoplasmic region, a transmembrane domain, and an extracellular C-type lectin-like domain. CD94 commonly forms heterodimers with members of the NKG2 family, including NKG2A, NKG2B, NKG2C, and NKG2E. The principal ligands for CD94/NKG2 receptors are HLA-E molecules presenting specific peptides derived largely from the leader sequences of other HLA class I proteins. CD94/NKG2A generally mediates inhibitory signaling, whereas CD94/NKG2C is associated with activating responses through the adaptor protein DAP12.

The CD94/NKG2-HLA-E axis contributes to immune surveillance and is involved in the regulation of antiviral and antitumor

immunity. Altered expression or signaling of CD94-containing receptors has been reported in cancer, viral infections, and autoimmune or inflammatory conditions. Tumors may exploit inhibitory CD94/NKG2A signaling to evade NK- and T-cell-mediated immune responses, while certain chronic viral infections can alter the balance of CD94 receptor expression and activity.

Because CD94-containing receptors regulate cytotoxic lymphocyte responses, they are being investigated as potential targets for immunotherapy. Blocking inhibitory NKG2A/CD94 signaling may enhance NK- and T-cell activity against tumors, particularly when combined with other immune checkpoint inhibitors. Conversely, activating pathways involving CD94/NKG2C may potentially enhance antitumor or antiviral immunity. CD94 is therefore a useful marker for studying NK-cell biology and an emerging target for therapeutic strategies aimed at modulating innate and adaptive immune responses.

PRODUCT DATA



Human Peripheral Blood Mononuclear Cells were stained with Purified Anti-Human CD94 clone 094AB (color-filled histogram) or an isotype control (gray histogram), followed by PE Anti-Rabbit IgG.

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