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InnoCyto Inc.

15375 Barranca Pkwy, Suite I-103
Irvine, CA 92618
Email: info@innocyto.com
Phone: 1-949-418-7543

APC Anti-Mouse CD127 (IL-7Rα) Antibody

Catalog Number:	208205, 208206
Size:	25 µg, 100 µg
Target Name:	CD127, IL-7 receptor α chain, IL-7Rα
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	m127AR2a
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	APC
Isotype:	Rat IgG2a
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	0.2 mg/mL
Storage&Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.25 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. APC has an excitation max at 650 nm and an emission max at 660 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Controls:	303508
Antibody Family:	Mouse Antibodies
Storage & Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Isotype Control:	303508

BACKGROUND INFORMATION

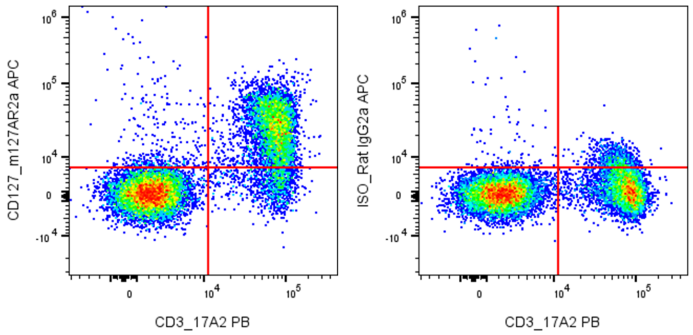
Mouse CD127, also known as interleukin-7 receptor alpha (IL-7Rα), is a cell-surface protein encoded by the Il7r gene. It plays an essential role in lymphocyte development, survival, proliferation, and homeostasis. CD127 is highly expressed on developing thymocytes, immature and mature B cells, and subsets of peripheral T lymphocytes, particularly naïve and memory T cells. It is also expressed on certain innate lymphoid cell populations. Through cytokine signaling, CD127 supports the maintenance of the adaptive immune system and regulates the balance of immune-cell populations.

CD127 is a type I transmembrane glycoprotein belonging to the hematopoietin receptor superfamily. Its structure consists of an extracellular cytokine-binding domain, a single transmembrane segment, and an intracellular region responsible for signal transduction. CD127 does not function independently but forms a heterodimer with the common gamma chain (CD132), which is shared by several interleukin receptors. Its principal ligand is interleukin-7 (IL-7), which binds CD127 and CD132 to activate intracellular signaling pathways, including JAK1/JAK3 and STAT5. CD127 also combines with the thymic stromal lymphopoietin receptor (TSLPR/CRLF2) to form the functional receptor for thymic stromal lymphopoietin (TSLP).

CD127 signaling is critical for normal T-cell development and immune homeostasis. Defects in IL-7Rα signaling can cause severe combined immunodeficiency (SCID), characterized by impaired T-cell development. Altered CD127 expression and signaling have also been associated with autoimmune diseases, including multiple sclerosis and type 1 diabetes, as well as certain hematological malignancies.

Therapeutically, CD127 is an important target for immunomodulation. Blocking antibodies against IL-7Rα are being investigated for autoimmune and inflammatory diseases by reducing IL-7-mediated lymphocyte activation and survival. Conversely, enhancing IL-7/CD127 signaling may support immune reconstitution, lymphocyte recovery, and the maintenance of protective T-cell populations following cancer treatment or immunosuppressive therapy.

PRODUCT DATA



C57BL/6 Mouse splenocytes were stained with PB Anti-Mouse CD3 clone 17A2 and APC Anti-Mouse CD127 clone m127AR2a (left) or an isotype control (right).

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