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InnoCyto Inc.

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Anti-Mouse CD127 (IL-7Rα) Antibody

Catalog Number:	208201, 208202
Size:	100 µg, 500 µg
Target Name:	CD127, IL-7 receptor α chain, IL-7Rα
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	m127AR2a
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	Purified
Isotype:	Rat IgG2a
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
Isotype Controls:	303501
Antibody Family:	Mouse Antibodies
Storage & Handling:	The antibody solution should be stored between 2°C and 8°C
Isotype Control:	303501

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.

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