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InnoCyto Inc.

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Anti-mouse/human Helios Antibody

Catalog Number:	204601, 204602
Size:	25 μg, 100 μg
Target Name:	Helios, IKAROS family zinc finger 2, IKZF2, ZNF1A2, ZNFN1A2
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	22F6
Application:	Intracellular Flow Cytometry, IP
Reactivity:	Mouse, Human
Format:	Purified
Isotype:	Armenian Hamster 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
Isotype Control:	300501
Isotype Controls:	300501

BACKGROUND INFORMATION

Helios, encoded by the IKZF2 gene, is a transcription factor belonging to the Ikaros family of zinc finger proteins. It is predominantly expressed in T lymphocytes, especially regulatory T cells (Tregs), where it contributes to immune homeostasis. Helios is thought to help stabilize Treg identity and suppressive function, although its exact role in distinguishing thymic versus peripherally induced Tregs remains an area of active investigation.

Structurally, Helios contains multiple C2H2 zinc finger domains that mediate DNA binding and protein–protein interactions. The N-terminal zinc fingers are responsible for sequence-specific binding to target gene promoters, while the C-terminal domains facilitate dimerization with other Ikaros family members. As a nuclear protein, Helios does not interact with extracellular ligands; instead, it regulates transcriptional programs controlling T-cell activation and differentiation.

In disease, dysregulation of Helios has been associated with autoimmune disorders, where impaired Treg function may contribute to loss of immune tolerance. Altered Helios expression is also observed in certain T-cell leukemias and lymphomas, suggesting a role in malignant transformation or persistence.

Therapeutically, Helios is not directly targeted but is an important biomarker and functional regulator in immunotherapy. Modulating Helios expression or Helios-positive Tregs may enhance anti-tumor immunity, particularly in cancer settings where Tregs suppress effective immune responses. Ongoing research aims to exploit this pathway while preserving immune balance.