

Ikaros (1-100): sc-4430 WB

BACKGROUND

Ikaros family members, including Ikaros and Helios, are nuclear factors that colocalize with DNA replication machinery components in higher-order chromatin structures and respond to signaling events, such as T cell activation. Helios and Ikaros bind to similar DNA sequences, and they function as hemopoietic-specific transcription factors. Members of the Ikaros family contain zinc-finger domains that are involved in DNA-binding and in the formation of homodimers and heterodimers between Ikaros family members. Expression of Ikaros is primarily detected in the thymus and spleen, where it is essential for regulating T-cell specific gene transcription and for the differentiation and commitment of early hemopoietic progenitors to the B and T lymphoid lineages. Similarly, Helios expression is detected primarily in T cells and in the earliest embryonic hemopoietic precursors and in adult stem cells. Ikaros and Helios also appear to regulate cell cycle entry by inducing transcriptional repression under varying conditions, and thereby mediate T cell activation and IL-2 mediated signaling events.

REFERENCES

1. Georgopoulos, K., Moore, D.D., and Derfler, B. 1992. Ikaros, an early lymphoid-specific transcription factor and a putative mediator for T cell commitment. *Science* 258: 808-812.
2. Molnar, A. and Georgopoulos, K. 1994. The Ikaros gene encodes a family of functionally diverse zinc finger DNA-binding proteins. *Mol. Cell. Biol.* 14: 8292-8303.
3. Sun, L., Liu, A., and Georgopoulos, K. 1996. Zinc finger-mediated protein interactions modulate Ikaros activity, a molecular control of lymphocyte development. *EMBO J.* 15: 5358-5369.
4. Kelley, C.M., Ikeda, T., Koipally, J., Avitahl, N., Wu, L., Georgopoulos, K., and Morgan, B.A. 1998. Helios, a novel dimerization partner of Ikaros expressed in the earliest hematopoietic progenitors. *Curr. Biol.* 8: 508-515.
5. Klug, C.A., Morrison, S.J., Masek, M., Hahm, K., Smale, S.T., and Weissman, I.L. 1998. Hematopoietic stem cells and lymphoid progenitors express different Ikaros isoforms, and Ikaros is localized to heterochromatin in immature lymphocytes. *Proc. Natl. Acad. Sci. USA* 95: 657-662.
6. Hahm, K., Cobb, B.S., McCarty, A.S., Brown, K.E., Klug, C.A., Lee, R., Akashi, K., Weissman, I.L., Fisher, A.G., and Smale, S.T. 1998. Helios, a T cell-restricted Ikaros family member that quantitatively associates with Ikaros at centromeric heterochromatin. *Genes Dev.* 12: 782-796.
7. Cortes, M., Wong, E., Koipally, J., and Georgopoulos, K. 1999. Control of lymphocyte development by the Ikaros gene family. *Curr. Opin. Immunol.* 11: 167-171.

SOURCE

Ikaros (1-100) is expressed in *E. coli* as a 38 kDa tagged fusion protein corresponding to amino acids 1-100 of Ikaros of human origin.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

PRODUCT

Ikaros (1-100) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

Ikaros (1-100) is suitable as a Western blotting control for sc-9859 and sc-13039.

RESEARCH USE

For research use only, not for use in diagnostic procedures.