

**Helios (D4Z6D) Rabbit mAb**

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

<b>Applications:</b> W, IP, FC-FP, ChIP, C&R, C&T	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 58, 63-70, 85	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q9UKS7	<b>Entrez-Gene Id:</b> 22807
---------------------------------------------------------	-------------------------	-----------------------------------	-----------------------------------	--------------------------------------	-------------------------------	---------------------------------

**Product Usage Information**

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10<sup>6</sup> cells) per IP. This antibody has been validated using SimpleChIP<sup>®</sup> Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

<b>Application</b>	<b>Dilution</b>
Western Blotting	1:1000
Immunoprecipitation	1:200
Flow Cytometry (Fixed/Permeabilized)	1:100
Chromatin IP	1:50
CUT&RUN	1:50
CUT&Tag	1:50

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #54887.

**Specificity/Sensitivity**

Helios (D4Z6D) Rabbit mAb recognizes endogenous levels of total Helios protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro424 of human Helios protein.

**Background**

Helios (Ikaros family zinc finger 2, IKZF2) is an Ikaros family transcription factor composed of several zinc fingers that mediate DNA binding and homodimerization or heterodimerization with other Ikaros family proteins (1,2). In the hematopoietic system, Helios expression is restricted to T cells and early hematopoietic progenitors (1,2). In regulatory T cells, expression of Helios contributes to an anergic phenotype by binding to the IL-2 promoter and suppressing IL-2 transcription (3). In addition, alteration of the corresponding Helios gene *IKZF2* is one hallmark of low-hypodiploid acute lymphoblastic leukemia (4).

**Background References**

- Hahm, K. et al. (1998) *Genes Dev* 12, 782-96.
- Kelley, C.M. et al. (1998) *Curr Biol* 8, 508-15.
- Baine, I. et al. (2013) *J Immunol* 190, 1008-16.
- Holmfeldt, L. et al. (2013) *Nat Genet* 45, 242-52.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation **FC-FP:** Flow Cytometry (Fixed/Permeabilized) **ChIP:** Chromatin IP **C&R:** CUT&RUN **C&T:** CUT&Tag

**Cross-Reactivity Key**

**H:** Human

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

Alexa Fluor is a registered trademark of Life Technologies Corporation.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.