Resource Summary Report

Generated by NIF on Apr 28, 2025

siDirect

RRID:SCR_004853

Type: Tool

Proper Citation

siDirect (RRID:SCR_004853)

Resource Information

URL: http://sidirect2.rnai.jp/

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Description: siDirect 2.0 provides functional and off-target minimized siRNA design for mammalian RNAi. The previous version of our software designed functional siRNAs by considering the relationship between siRNA sequence and RNAi activity, and provided them along with the enumeration of potential off-target gene candidates by using a fast and sensitive homology search algorithm. In the new version, the siRNA design algorithm is extensively updated to eliminate off-target effects by reflecting our recent finding that the capability of siRNA to induce off-target effect is highly correlated to the thermodynamic stability, or the melting temperature (Tm), of the seed-target duplex, which is formed between the nucleotides positioned at 2-8 from the 5" end of the siRNA guide strand and its target mRNA. Selection of siRNAs with lower seed-target duplex stabilities (benchmark Tm 94% of human mRNA sequences in RefSeq. Enter an accession number and retrieve sequence or Paste in a nucleotide sequence.

Resource Type: data analysis service, production service resource, service resource, analysis service resource

Defining Citation: <u>PMID:19948054</u>, <u>PMID:15215364</u>

Funding: Special Coordination Fund for Promoting Science and Technology; Ministry of Education Culture Sports Science and Technology of Japan; Grant-in-Aid for Scientific Research on Priority Areas 12208003

Resource Name: siDirect

Resource ID: SCR_004853

Alternate IDs: nlx_83672

Record Creation Time: 20220129T080226+0000

Record Last Update: 20250428T053127+0000

Ratings and Alerts

No rating or validation information has been found for siDirect.

No alerts have been found for siDirect.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 227 mentions in open access literature.

Listed below are recent publications. The full list is available at <u>NIF</u>.

Ashoub MH, et al. (2025) siRNA-mediated inhibition of hTERT enhances the effects of curcumin in promoting cell death in precursor-B acute lymphoblastic leukemia cells: an in silico and in vitro study. Scientific reports, 15(1), 3083.

Agatsuma Y, et al. (2025) FAM32A Suppression Decreases 5-Fluorouracil-induced Apoptosis and Is Associated With Poor Prognosis in Gastric Cancer. Cancer genomics & proteomics, 22(1), 55.

Mekonnen N, et al. (2025) Design, Screening and Development of Asymmetric siRNAs Targeting the MYC Oncogene in Triple-Negative Breast Cancer. Biomolecules & therapeutics, 33(1), 155.

Zheng H, et al. (2024) CCDC157 is essential for sperm differentiation and shows oligoasthenoteratozoospermia-related mutations in men. Journal of cellular and molecular medicine, 28(7), e18215.

Liang H, et al. (2024) FsCGBP, a Cutinase G-Box Binding Protein, Regulates the Growth, Development, and Virulence of Fusarium sacchari, the Pathogen of Sugarcane Pokkah Boeng Disease. Journal of fungi (Basel, Switzerland), 10(4).

Niimi T, et al. (2024) Co-culture of vascular endothelial cells enhances corticosterone production in steroid hormone-producing cells generated from adipose-derived mesenchymal

stromal cells. Scientific reports, 14(1), 18804.

Furuya H, et al. (2024) Stage-specific GATA3 induction promotes ILC2 development after lineage commitment. Nature communications, 15(1), 5610.

Masuda S, et al. (2024) TRAF7 determines circadian period through ubiquitination and degradation of DBP. Communications biology, 7(1), 1280.

Wu MZ, et al. (2024) Disrupting shadow in the prothoracic gland induced larval development arrest in the fall armyworm Spodoptera frugiperda. Frontiers in physiology, 15, 1502753.

Luo S, et al. (2024) P2Y1R silencing in Astrocytes Protected Neuroinflammation and Cognitive Decline in a Mouse Model of Alzheimer's Disease. Aging and disease, 15(4), 1969.

Liu S, et al. (2024) Functional Analysis of ?-Carotene Oxygenase 2 (BCO2) Gene in Yesso Scallop (Patinopecten yessoensis). International journal of molecular sciences, 25(7).

Huang S, et al. (2024) Orange-spotted grouper nervous necrosis virus-encoded protein A induces interferon expression via RIG-I/MDA5-MAVS-TBK1-IRF3 signaling in fish cells. Microbiology spectrum, 12(1), e0453222.

Dutta TK, et al. (2024) Induced knockdown of Mg-odr-1 and Mg-odr-3 perturbed the host seeking behavior of Meloidogyne graminicola in rice. Heliyon, 10(4), e26384.

Ueno K, et al. (2024) miR-709 exerts an angiogenic effect through a FGF2 upregulation induced by a GSK3B downregulation. Scientific reports, 14(1), 11372.

Xu J, et al. (2024) Endothelial Foxo1 Phosphorylation Inhibition via Aptamer-Liposome Alleviates OPN-Induced Pathological Vascular Remodeling Following Spinal Cord Injury. Advanced science (Weinheim, Baden-Wurttemberg, Germany), 11(43), e2406398.

Shao L, et al. (2024) DKK1-SE recruits AP1 to activate the target gene DKK1 thereby promoting pancreatic cancer progression. Cell death & disease, 15(8), 566.

Shin JJ, et al. (2024) LncRNA BRE-AS1 regulates the JAK2/STAT3-mediated inflammatory activation via the miR-30b-5p/SOC3 axis in THP-1 cells. Scientific reports, 14(1), 25726.

Feng J, et al. (2024) Akt regulates the fertility of Coridius chinensis by insulin signaling pathway. Scientific reports, 14(1), 28708.

Wu S, et al. (2024) The BTB-ZF gene Bm-mamo regulates pigmentation in silkworm caterpillars. eLife, 12.

Zai W, et al. (2024) Optimized RNA interference therapeutics combined with interleukin-2 mRNA for treating hepatitis B virus infection. Signal transduction and targeted therapy, 9(1), 150.