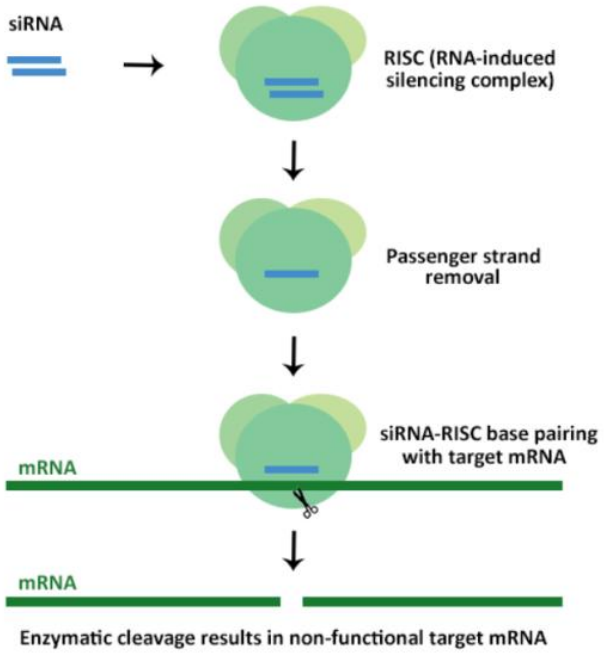
Genome-Wide siRNA Knockdown Collection

siRNA for Precision Gene Knockdown

siRNA knockdown technology uses short double-stranded RNA molecules to selectively reduce gene expression through the RNA interference (RNAi) pathway. Inside the cell, siRNA is loaded into the RNA-induced silencing complex (RISC), where the guide strand directs sequence-specific degradation of target mRNA, blocking protein production. Because siRNA does not alter genomic DNA, the effect is transient, making it ideal for temporary gene silencing. This versatile approach is widely used for functional genomics, pathway analysis, target validation, and therapeutic discovery across cancer, immunology, neuroscience, and genetic disease research.



High Performance siRNA Constructs

abm offers a comprehensive, genome-wide collection of siRNA expression constructs designed for efficient and reliable gene silencing. Each target gene is addressed with a set of four siRNAs, available in lentiviral, AAV, and synthetic RNA delivery formats to suit diverse experimental needs. Our unique convergent dual-promoter system eliminates the need for hairpin loop shRNA design, simplifying cloning and enabling robust target knockdown. Each construct also incorporates GFP and a puromycin resistance marker for flexible monitoring and selection. Trusted by researchers worldwide, **abm's** siRNA solutions are backed by successful use in peer-reviewed studies, including publications in high-impact journals such as *Nature*, making them a dependable choice for gene silencing studies.

Feature	siRNA Lentivirus	siRNA AAV	siRNA dsRNA Oligo	siRNA Plasmid
RNA form delivered	DNA encoding siRNA	DNA encoding siRNA	Chemically synthesized siRNA duplex	DNA encoding siRNA
Duration of knockdown	Stable, long term (integrated)	Long term (episomal)	Transient (<1 week)	Transient, semi-stable
In vivo usage	Good	Excellent	Limited	No
Advantages	High efficiency, stable expression, selectable cell lines	Low immunogenicity, strong in vivo performance, tissue tropism	Fast, simple, no genome integration, tunable dose	Simple, low cost, no virus
Limitations	Genomic integration, biosafety requirements, insertional effects	Limited cargo size, risk of oversaturation of miRNA machinery	Requires transfection, repeated dosing, variable efficiency	Low efficiency, dilution over time
Applications	Stable knockdown cell lines, long-term studies, in vivo models	In vivo gene function, CNS and tissue-specific knockdown	Rapid target validation, screening, pathway studies	Short-term in vitro knockdown

Format	Product	Concentration	Deliverable
Lentiviral Vector	siRNA Lentivector Set	100 ng/µl	Set of 4 vectors
Lentivirus	Lentivirus Pooled siRNA	10^8, 10^9 or 10^{10} IU/ml	Pooled virus
AAV Vector	siRNA AAV Vector Set	100 ng/µl	Set of 4 vectors
AAV	AAV Pooled siRNA	10^{11}, 10^{12} or 10^{13} GC/ml	Pooled virus
dsRNA Oligo	siRNA Oligos Set	5 nmol	Set of 4 Oligos

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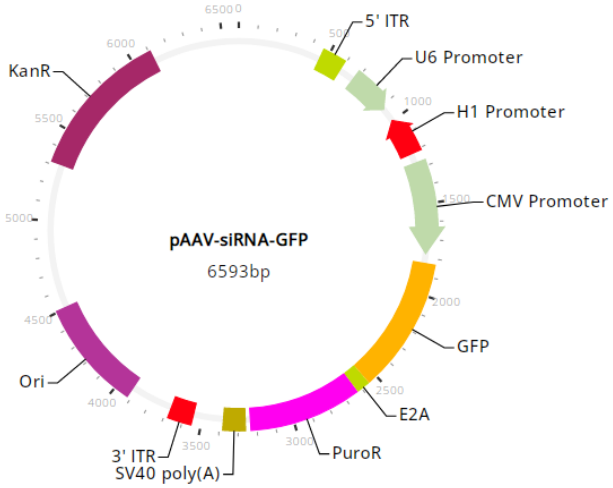
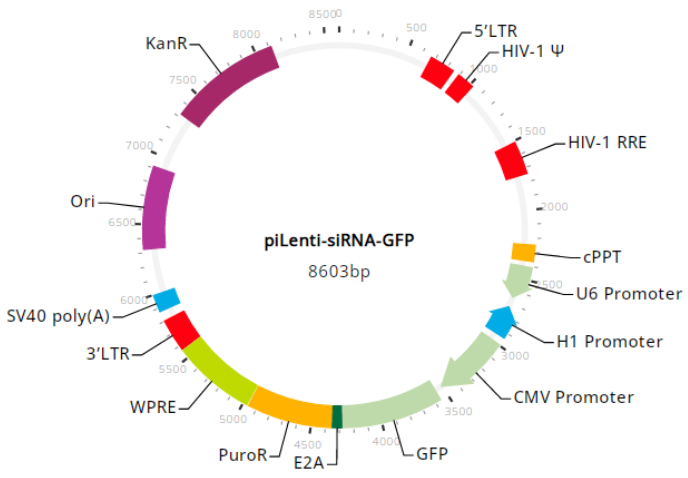
Top Publications

Cat. No.	Publication	Journal	Year
VS420990	Xiong, J., Kang, S. S., Wang, Z., Liu, X., Kuo, T.-C., Korkmaz, F., Padilla, A., Miyashita, S., Chan, P., Zhang, Z., Katsel, P., Burgess, J., Gumerova, A., levleva, K., Sant, D., Yu, S.-P., Muradova, V., Frolinger, T., Lizneva, D., & Iqbal, J. (2022). FSH blockade improves cognition in mice with Alzheimer's disease. *Nature*. https://doi.org/10.1038/s41586-022-04463-0	Nature	2022
LS436383 LS431568 LS431567 LS431573 LS431575 LS431579	Bruno, N. E., Nwachukwu, J. C., Srinivasan, S., Nettles, C. C., Izard, T., Jin, Z., ... & Nettles, K. W. (2021). Chemical systems biology reveals mechanisms of glucocorticoid receptor signaling. *Nature Chemical Biology*, 17(3), 307-316. https://doi.org/10.1038/s41589-020-00719-w	Nature Chemical Biology	2021
VS446522 VS146522 VS420750	Da Li, Cao, T., Sun, X. et al. (2020). Hepatic TET3 contributes to type-2 diabetes by inducing the HNF4a fetal isoform. *Nature Communications*, 11, 342. https://doi.org/10.1038/s41467-019-14185-z	Nature Communications	2020
VS442956 VS647188 VS624842 VS632138	Corbett, B. F., Luz, S., Arner, J., Pearson-Leary, J., Sengupta, A., Taylor, D., Gehrman, P., Ross, R., & Bhatnagar, S. (2019). Sphingosine-1-phosphate receptor 3 in the medial prefrontal cortex promotes stress resilience by reducing inflammatory processes. *Nature Communications*, 10(1). https://doi.org/10.1038/s41467-019-10904-8	Nature Communications	2019





Feature	How abm is a step above in siRNA technology	
DsiRNAs	Uses potent 27-29 bp oligos that enhance RISC loading and guide-strand selection vs traditional 19-21 bp oligos	✔
Convergent Promoter	Eliminates hairpin loop structures, simplifying sequencing and plasmid propagation	✔
GFP Reporter	Enables real time monitoring of transfection or viral infection	✔
Set of 4 siRNAs	Enhanced gene knockdown ability compared to a single siRNA	✔

Learn more about our siRNA Knockdown Libraries here