

Publications with Dharmacon™ Edit-R™ CRISPR-Cas9 reagents

Introduction

These publications demonstrate the application of CRISPR-Cas9 genome engineering techniques for target gene knockout or precise knockin using Dharmacon™ Edit-R™ CRISPR-Cas9 reagents or custom RNA synthesis.

2021

1. Bowling, E. A., Wang, J. H., Gong, F., *et al* (2021). [Spliceosome-targeted therapies trigger an antiviral immune response in triple-negative breast cancer](#). *Cell*, **184**(2), 384-403.e21. doi.org/10.1016/j.cell.2020.12.031
2. Chabanon, R. M., Morel, D., Eychenne, T., *et al* (2021). [Pbrm1 deficiency confers synthetic lethality to dna repair inhibitors in cancer](#). *Cancer Research*, **81**(11), 2888–2902. doi.org/10.1158/0008-5472.CAN-21-0628
3. Dutta, R. K., Chinnapaiyan, S., Santiago, M. J., *et al* (2021). [Gene-specific MicroRNA antagonism protects against HIV Tat and TGF-β-mediated suppression of CFTR mRNA and function](#). *Biomedicine & Pharmacotherapy*, **142**, 112090. doi.org/10.1016/j.biopha.2021.112090
4. Gozgit, J. M., Vasbinder, M. M., Abo, R. P., *et al* (2021a). [PARP7 negatively regulates the type I interferon response in cancer cells and its inhibition triggers antitumor immunity](#). *Cancer Cell*, **39**(9), 1214-1226.e10. doi.org/10.1016/j.ccell.2021.06.018
5. Jeusset, L. M., Guppy, B. J., Lichtensztejn, Z., *et al* (2021). [Reduced usp22 expression impairs mitotic removal of h2b monoubiquitination, alters chromatin compaction and induces chromosome instability that may promote oncogenesis](#). *Cancers*, **13**(5), 1043. doi.org/10.3390/cancers13051043
6. Jewett, C. E., Soh, A. W. J., Lin, C. H., *et al* (2021). [Rab19 directs cortical remodeling and membrane growth for primary ciliogenesis](#). *Developmental Cell*, **56**(3), 325-340.e8. doi.org/10.1016/j.devcel.2020.12.003
7. Martin-Sancho, L., Lewinski, M. K., Pache, L., *et al* (2021). [Functional landscape of SARS-CoV-2 cellular restriction](#). *Molecular Cell*, **81**(12), 2656-2668.e8. doi.org/10.1016/j.molcel.2021.04.008

8. Mills, C. A., Wang, X., Bhatt, D. P., *et al* (2021). [Sirtuin 5 is regulated by the scf cyclin f ubiquitin ligase and is involved in cell cycle control](#). *Molecular and Cellular Biology*, **41**(2). doi.org/10.1128/MCB.00269-20
9. Yin, X., Riva, L., Pu, Y., *et al* (2021). [Mda5 governs the innate immune response to sars-cov-2 in lung epithelial cells](#). *Cell Reports*, **34**(2), 108628. doi.org/10.1016/j.celrep.2020.108628

2020

1. Dermit, M., Dodel, M., Lee, F. C. Y., *et al* (2020). [Subcellular mrna localization regulates ribosome biogenesis in migrating cells](#). *Developmental Cell*, **55**(3), 298-313.e10. doi.org/10.1016/j.devcel.2020.10.006
2. E. Kostaras, T. Kaserer, G. Lazaro, *et al*. [A systematic molecular and pharmacologic evaluation of AKT inhibitors reveals new insight into their biological activity](#). *British Journal of Cancer*. (2020).
3. Ishibashi, M., Takahashi, R., Tsubota, A., *et al* (2020). [Slamf3-mediated signaling via erk pathway activation promotes aggressive phenotypic behaviors in multiple myeloma](#). *Molecular Cancer Research*, **18**(4), 632–643. doi.org/10.1158/1541-7786.MCR-19-0391
4. Russell, R., Carnese, P. P., Hennings, T. G., *et al* (2020). [Loss of the transcription factor MAFB limits β-cell derivation from human PSCs](#). *Nature Communications*, **11**(1), 2742. doi.org/10.1038/s41467-020-16550-9
5. Segura-Bayona, S., Villamor-Payà, M., Attolini, C. S.-O., *et al* (2020). [Tousled-like kinases suppress innate immune signaling triggered by alternative lengthening of telomeres](#). *Cell Reports*, **32**(5), 107983. doi.org/10.1016/j.celrep.2020.107983
6. Shimizu, T., Nagane, M., Suzuki, M., *et al* (2020). [Tumor hypoxia regulates ganglioside GM3 synthase, which contributes to oxidative stress resistance in malignant melanoma](#). *Biochimica et Biophysica Acta (BBA) - General Subjects*, **1864**(12), 129723. doi.org/10.1016/j.bbagen.2020.129723
7. Tomizawa, F., Jang, M.-K., Mashima, T., *et al* (2020). [C-kit regulates stability of cancer stemness in cd44-positive colorectal cancer cells](#). *Biochemical and Biophysical Research Communications*, **527**(4), 1014–1020. doi.org/10.1016/j.bbrc.2020.05.024

8. R.M. Garner, G. Skariah, A. Hadjitheodorou, *et al.* [Neutrophil-like HL-60 cells expressing only GFP-tagged b-actin exhibit nearly normal motility](#). *Cytoskeleton*. (2020). doi: 10.1002/cm.21603
9. T. Venit, K. Semesta, S. Farrukh, *et al.* [Nuclear myosin 1 activates p21 gene transcription in response to DNA damage through to DNA damage through a chromatin-based mechanism](#). *Communications Biology*. **3**(115). (2020). doi: 10.1038/s42003-020-0836-1
16. P. Palmbo, Y. Wang, *et al.* [ATDC Mediates a TP63-regulated Basal Cancer Invasive Program](#). *Oncogene*. **38**, 3340-3354 (2019). doi: 10.1038/s41388-018-0646-9
17. C. Buffone, J. Kutzner, *et al.* [The Ability of SAMHD1 to block HIV-1 but not SIV requires expression of MxB](#). *Virology*. **531**, 260-268 (2019). doi: 10.1016/j.virol.2019.03.018

2019

1. D.A. Erkes, C.O. Field, C. Capparelli, *et al.* [The next-generation BET inhibitor, PLX51107, delays melanoma growth in a CD8-mediated manner](#). *Pigment Cell Melanoma Research*. **32**:687-696. (2019). doi:10.1111/pcmr.12788
2. P. Janus, A. Toma-Jonik, N. Vydra, *et al.* [Pro-death signaling of cytoprotective heat shock factor 1: upregulation of NOXA leading to apoptosis in heat-sensitive cells](#). *Cell Death & Differentiation*. (2020). doi: 10.1038/s41418-020-0501-8
3. H. Khan, A. Anshu, A. Prasad, *et al.* [Metabolic rewiring in response to biguanides is mediated by mROS/HIF-1 \$\alpha\$ in malignant lymphocytes](#). *Cell Reports*. **29**, 3009-3018 (2019). doi: 10.1016/j.celrep.2019.11.007
4. S. Kim, A. Bolatkan, S. Kaneko, *et al.* [Deregulation of the histone lysine-specific demethylase 1 is involved in human hepatocellular carcinoma](#). *Biomolecules*. **9**:810 (2019). doi: 10.3390/biom9120810
5. A.R. Leenay, A. Aghazadeh, J. Hiatt, *et al.* [Large dataset enables prediction of repair after CRISPR-Cas9 editing in primary T cells](#). *Nature Biotechnology*. (2019). doi: 10.1038/s41587-019-0203-2
6. J. Li, R. An, S. Lai, *et al.* [Dysregulation of PP2A-Akt interaction contributes to sucrose non-fermenting related kinase \(SNRK\) deficiency induced insulin resistance in adipose tissue](#). *Molecular Metabolism*. (2019). doi: 10.1016/j.molmet.2019.07.009
7. J. Iwasaki, T. Komori, F. Nakagawa, *et al.* [Schlafen11 expression is associated with the antitumor activity of trabectedin in human sarcoma cell lines](#). *Anticancer Research*. **39**:3553-3563 (2019). doi: 10.21873/anticancer.13501
8. A. Shariati, A. Dominguez, *et al.* [Reversible Disruption of Specific Transcription Factor-DNA Interactions using CRISPR/Cas9](#). *Mol Cell*. **74**(3), 622-633.e4 (2019). doi: 10.1016/j.molcel.2019.04.011
9. S. Weigle, E. Martin, *et al.* [Primary cell-based phenotypic assays to pharmacologically and genetically study fibrotic diseases in vitro](#). *J Biol Methods*. **6**(2):e115 (2019). doi: 10.14440/jbm.2019.285
10. A. Perota, I. Lagutina, *et al.* [Generation of Cattle Knockout for galactose- \$\alpha\$ 1,3-galactose and N-glycolylneuraminic acid antigens](#). *Xenotransplantation*. **00**:e12524 (2019). doi: 10.1111/xen.12524
11. D.A. Erkes, C.O. Field, *et al.* [The next-generation BET inhibitor, PLX51107, delays melanoma growth in a CD8-mediated manner](#). *Pigment Cell Melanoma Res*. **00**, 1-10 (2019). doi: 10.1111/pcmr.12788
12. S. Kobayashi, T. Contractor, *et al.* [Alleles of Insm1 Determine Whether RIP1-Tag2 Mice Produce Insulinomas or Nonfunctioning Pancreatic Neuroendocrine Tumors](#). *Oncogenesis*. **8**:16, 1-13 (2019). doi: 10.1038/s41389-019-0127-1
13. I. Rezuchova, S. Hudecova, *et al.* [Type 3 Inositol 1,4,5-triphosphate Receptor has Antiapoptotic and Proliferative Role in Cancer Cells](#). *Cell Death & Disease*. 10:186, 1-10 (2019). doi: 10.1038/s41419-019-1433-4
14. W. Zhang, J. Wells, *et al.* [miR-147b-mediated TCA cycle dysfunction and Pseudohypoxia Initiate Drug Tolerance to EGFR Inhibitors in Lung Adenocarcinoma](#). *Nature Metabolism*. (2019). doi: 10.1038/s42255-019-0052-9
15. F. Fekri, J. Abousawan, *et al.* [Targeted enhancement of flotillin-dependent endocytosis augments cellular uptake and impact of cytotoxic drugs](#). *BioRxiv*. doi: 10.1038/s41598-019-54062-9

2018

1. K. Hinohara, H-J. Wu, *et al.* [KDM5 Histone Demethylase Activity Links Cellular Transcriptomic Heterogeneity to Therapeutic Resistance](#). *Cancer Cell*. **34**, 1-15 (2018). doi: 10.1016/j.ccell.2018.10.014
2. E.M. Anderson, S. McClelland, E. Maksimova, *et al.* [Lactobacillus gasseri CRISPR-Cas9 characterization In Vitro reveals a flexible mode of protospacer-adjacent motif recognition](#). *PLoS One*. **13**(2): e0192181 (2018). doi: 10.1371/journal.pone.0192181
3. T. Araujo, A. Khayat, L. Quintana, *et al.* [Piwi like RNA-mediated gene silencing 1 gene as a possible major player in gastric cancer](#). *World J Gastroenterol* **24**(47):5338-5350 (2018). doi: 10.3748/wjg.v24.i47.5338
4. A. Cluse, I. Nikolic, *et al.* [A Comprehensive Protocol Resource for Performing Pooled shRNA and CRISPR Screens](#). *Methods Mol Biol*. **1725**, 201-227 (2018). doi: 10.1007/978-1-4939-7568-6_17
5. K. S. Kim, N. Maio, *et al.* [Cytosolic HSC20 integrates de novo iron-sulfur cluster biogenesis with the CIAO1-mediated transfer to recipients](#). *Hum Mol Genet*. **27**, 827-852 (2018). doi: 10.1093/hmg/ddy004
6. S. Melnik, D. Dvornikov, *et al.* [Cancer cell specific inhibition of Wnt/ \$\beta\$ -catenin signaling by forced intracellular acidification](#). *Cell Discov*. **4**, 37 (2018). doi: 10.1038/s41421-018-0033-2
7. S. J. Pettitt, D. B. Krastev, *et al.* [Genome-wide and high-density CRISPR-Cas9 screens identify point mutations in PARP1 causing PARP inhibitor resistance](#). *Nat Commun*. **9**, 1849 (2018). doi: 10.1038/s41467-018-03917-2
8. P. G. Ziros, I. G. Habeos, *et al.* [NFE2-Related Transcription Factor 2 Coordinates Antioxidant Defense with Thyroglobulin Production and Iodination in the Thyroid Gland](#). *Thyroid*. **28**, 780-798 (2018). doi: 10.1089/thy.2018.0018

2017

1. M. Basila, M. L. Kelley, *et al.* [Minimal 2'-O-methyl phosphorothioate linkage modification pattern of synthetic guide RNAs for increased stability and efficient CRISPR-Cas9 gene editing avoiding cellular toxicity](#). *PLoS One*. **12**, e0188593 (2017). doi: 10.1371/journal.pone.0188593
2. C. E. Delaney, A. T. Chen, *et al.* [A histone H4 lysine 20 methyltransferase couples environmental cues to sensory neuron control of developmental plasticity](#). *Development*. **144**, 1273-1282 (2017). doi: 10.1242/dev.145722
3. S. S. Gang, M. L. Castelletto, *et al.* [Targeted mutagenesis in a human-parasitic nematode](#). *PLoS Pathog*. **13**, e1006675 (2017). doi:10.1371/journal.ppat.1006675
4. J. F. Hultquist, J. Hiatt, *et al.* [A CRISPR-Cas9 Genome Engineering Platform in Primary CD4+ T Cells for the Interrogation of HIV Host Factors](#). *bioRxiv* 205500 (2017) doi: 10.1101/205500
5. S. Kim, S. R. F. Twigg, *et al.* [Localized TWIST1 and TWIST2 basic domain substitutions cause four distinct human diseases that can be modeled in Caenorhabditis elegans](#). *Hum Mol Genet*. **26**, 2118-2132 (2017). doi: 10.1093/hmg/ddx107
6. N. Maio, K. S. Kim, *et al.* [A Single Adaptable Cochaperone-Scaffold Complex Delivers Nascent Iron-Sulfur Clusters to Mammalian Respiratory Chain Complexes I-III](#). *Cell Metab*. **25**, 945-953, e6 (2017). doi: 10.1016/j.cmet.2017.03.010

7. A. Paix, A. Folkmann, *et al.* [Precision genome editing using synthesis-dependent repair of Cas9-induced DNA breaks](#). *Proc Natl Acad Sci U S A.* **114**, E10745–E10754 (2017). doi: 10.1073/pnas.1711979114
8. A. Paix, A. Folkmann, *et al.* [Precision genome editing using CRISPR-Cas9 and linear repair templates in *C. elegans*](#). *Methods.* 121–122, 86–93 (2017). doi: 10.1016/j.ymeth.2017.03.023
9. L. J. Rupp, K. Schumann, *et al.* [CRISPR/Cas9-mediated PD-1 disruption enhances anti-tumor efficacy of human chimeric antigen receptor T cells](#). *Sci Rep.* **7**, 737 (2017). doi:10.1038/s41598-017-00462-8
10. Ž. Strezoska, M. Perkett, *et al.* [High-content analysis screening for cell cycle regulators using arrayed synthetic crRNA libraries](#). *J. Biotechnol.* **251**, 189–200 (2017). doi: 10.1016/j.jbiotec.2017.04.017
11. X. M. van Wijk, S. Döhrmann, *et al.* [Whole-Genome Sequencing of Invasion-Resistant Cells Identifies Laminin \$\alpha 2\$ as a Host Factor for Bacterial Invasion](#). *MBio.* **8**, e02128-16 (2017). doi: 10.1128/mBio.02128-16

2016

1. T. A. Aguilera, M. Rafat, *et al.* [Reprogramming the immunological microenvironment through radiation and targeting *Axl*](#). *Nat Commun.* **7**, 13898 (2016). doi: 10.1038/ncomms13898
2. R. Eggenschwiler, M. Moslem, *et al.* [Improved bi-allelic modification of a transcriptionally silent locus in patient-derived iPSC by Cas9 nickase](#). *Sci Rep.* **6**, 38198 (2016). doi: 10.1038/srep38198
3. K. He, E. Chou, *et al.* [Conjugation and evaluation of triazole-linked single guide RNA for CRISPR-Cas9 gene editing](#). *ChemBioChem.* **17**, 1809–1812 (2016). doi:10.1002/cbic.201600320
4. J. F. Hultquist, K. Schumann, *et al.* [A Cas9 Ribonucleoprotein Platform for Functional Genetic Studies of HIV-Host Interactions in Primary Human T Cells](#). *Cell Reports* **17**, 1438–1452 (2016). doi:10.1016/j.celrep.2016.09.080
5. M. L. Kelley, Ž. Strezoska, *et al.* [Versatility of chemically synthesized guide RNAs for CRISPR-Cas9 genome editing](#). *J. Biotechnol.* **233**, 74–83 (2016). doi:10.1016/j.jbiotec.2016.06.011
6. J. McCaffrey, J. Sibert, *et al.* [CRISPR-CAS9 D10A nickase target-specific fluorescent labeling of double strand DNA for whole genome mapping and structural variation analysis](#). *Nucleic Acids Res.* **44**, e11 (2016). doi:10.1093/nar/gkv878
7. V. Müller, F. Rajer, *et al.* [Direct identification of antibiotic resistance genes on single plasmid molecules using CRISPR/Cas9 in combination with optical DNA mapping](#). *Sci Rep.* **6**, 37938 (2016). doi:10.1038/srep37938
8. A. Paix, H. Schmidt, *et al.* [Cas9-assisted recombineering in *C. elegans*: genome editing using in vivo assembly of linear DNAs](#). *Nucleic Acids Res.* **44**, e128 (2016). doi:10.1093/nar/gkw502
9. J. Tan, S. E. Martin. [Validation of Synthetic CRISPR Reagents as a Tool for Arrayed Functional Genomic Screening](#). *PLoS One* **11**, e0168968 (2016). doi: 10.1371/journal.pone.0168968

2015

1. E. M. Anderson, A. Haupt, *et al.* [Systematic analysis of CRISPR-Cas9 mismatch tolerance reveals low levels of off-target activity](#). *J. Biotechnol.* **211**, 56–65 (2015). doi:10.1016/j.jbiotec.2015.06.427
2. R. Barrangou, A. Birmingham, *et al.* [Advances in CRISPR-Cas9 genome engineering: lessons learned from RNA interference](#). *Nucleic Acids Res.* **43**, 3407–3419 (2015). doi:10.1093/nar/gkv226
3. H. Ogiwara, M. Sasaki, *et al.* [Targeting p300 addiction in CBP-deficient cancers causes synthetic lethality by apoptotic cell death due to abrogation of MYC expression](#). *Cancer Discov.* **6**, 430–445 (2015). doi:10.1158/2159-8290.CD-15-0754
4. S. Opp, D. A. S. A. Vieira, *et al.* [MxB Is Not Responsible for the Blocking of HIV-1 Infection Observed in Alpha Interferon-Treated Cells](#). *J. Virol.* **90**, 3056–3064 (2015). doi:10.1128/JVI.03146-15
5. A. Paix, A. Folkmann, *et al.* [High efficiency, homology-directed genome editing in *Caenorhabditis elegans* using CRISPR-Cas9 Ribonucleoprotein complexes](#). *Genetics.* **201**, 47–54 (2015). doi:10.1534/genetics.115.179382
6. G. Sivan, P. Ormanoglu, *et al.* [Identification of Restriction Factors by Human Genome-Wide RNA Interference Screening of Viral Host Range Mutants Exemplified by Discovery of SAMD9 and WDR6 as Inhibitors of the Vaccinia Virus K1L-C7L- Mutant](#). *MBio.* **6**, e01122 (2015). doi:10.1128/mBio.01122-15
7. W. Deng, X. Shi, *et al.* [CASFISH: CRISPR/Cas9-mediated in situ labeling of genomic loci in fixed cells](#). *Proc Natl Acad Sci U S A.* **112**, 11870–11875 (2015). doi:10.1073/pnas.1515692112

For more information

To find the contact information in your country for your technology of interest, please visit us at horizondiscovery.com/contact-us

Horizon Discovery, 8100 Cambridge Research Park, Waterbeach, Cambridge, CB25 9TL, United Kingdom

©2021 The Horizon logo and other trademarks are the property of Horizon Discovery Limited, unless otherwise stated. DHARMACON and EDIT-R are trademarks of Dharmacon Inc.

horizon
a PerkinElmer company