

Resource Summary Report

Generated by [kravitz2](#) on Aug 10, 2026

Cas9-NAT

RRID:Addgene_64329

Type: Plasmid

Proper Citation

RRID:Addgene_64329

Plasmid Information

URL: <http://www.addgene.org/64329>

Proper Citation: RRID:Addgene_64329

Insert Name: Human-optimized S. pyogenes Cas9 with Clonnat marker gene expression cassette

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:25281382](#)

Vector Backbone Description: Backbone Marker:George Church lab (Addgene Plasmid #43802); Backbone Size:9232; Vector Backbone:pRS414-TEF1p-Cas9-CYC1t; Vector Types:Yeast Expression, CRISPR; Bacterial Resistance:Ampicillin

Plasmid Name: Cas9-NAT

Record Creation Time: 20220422T222408+0000

Record Last Update: 20260808T081955+0000

Ratings and Alerts

No rating or validation information has been found for Cas9-NAT.

No alerts have been found for Cas9-NAT.

Data and Source Information

Source: [Addgene](#)

Usage and Citation Metrics

We found 17 mentions in open access literature.

Listed below are recent publications. The full list is available at [kravitz2](#) .

Heneghan PG, et al. (2025) Ancient origin and high diversity of zymocin-like killer toxins in the budding yeast subphylum. *Proceedings of the National Academy of Sciences of the United States of America*, 122(7), e2419860122.

Shin J, et al. (2024) Compositional and temporal division of labor modulates mixed sugar fermentation by an engineered yeast consortium. *Nature communications*, 15(1), 781.

Salzberg LI, et al. (2022) A widespread inversion polymorphism conserved among *Saccharomyces* species is caused by recurrent homogenization of a sporulation gene family. *PLoS genetics*, 18(11), e1010525.

Kwak S, et al. (2022) Dissection and enhancement of prebiotic properties of yeast cell wall oligosaccharides through metabolic engineering. *Biomaterials*, 282, 121379.

Lee YG, et al. (2022) Selective production of retinol by engineered *Saccharomyces cerevisiae* through the expression of retinol dehydrogenase. *Biotechnology and bioengineering*, 119(2), 399.

Hassell DS, et al. (2021) Chemical rescue of mutant proteins in living *Saccharomyces cerevisiae* cells by naturally occurring small molecules. *G3 (Bethesda, Md.)*, 11(9).

Sun L, et al. (2021) Complete and efficient conversion of plant cell wall hemicellulose into high-value bioproducts by engineered yeast. *Nature communications*, 12(1), 4975.

Lim SH, et al. (2021) CRISPRi-Guided Metabolic Flux Engineering for Enhanced Protopanaxadiol Production in *Saccharomyces cerevisiae*. *International journal of molecular sciences*, 22(21).

Sun L, et al. (2020) High-level β -carotene production from xylose by engineered *Saccharomyces cerevisiae* without overexpression of a truncated HMG1 (tHMG1). *Biotechnology and bioengineering*, 117(11), 3522.

Wasserman MR, et al. (2019) Replication Fork Activation Is Enabled by a Single-Stranded DNA Gate in CMG Helicase. *Cell*, 178(3), 600.

Tang R, et al. (2019) Identification and characterization of novel xylose isomerases from a *Bos taurus* fecal metagenome. *Applied microbiology and biotechnology*, 103(23-24), 9465.

Sun L, et al. (2019) Vitamin A Production by Engineered *Saccharomyces cerevisiae* from Xylose via Two-Phase in Situ Extraction. *ACS synthetic biology*, 8(9), 2131.

Zhang MM, et al. (2019) Enhanced acetic acid stress tolerance and ethanol production in *Saccharomyces cerevisiae* by modulating expression of the de novo purine biosynthesis genes. *Biotechnology for biofuels*, 12, 116.

Wei LJ, et al. (2018) Improved squalene production through increasing lipid contents in *Saccharomyces cerevisiae*. *Biotechnology and bioengineering*, 115(7), 1793.

Kwak S, et al. (2017) Enhanced isoprenoid production from xylose by engineered *Saccharomyces cerevisiae*. *Biotechnology and bioengineering*, 114(11), 2581.

Barbieri EM, et al. (2017) Precise Editing at DNA Replication Forks Enables Multiplex Genome Engineering in Eukaryotes. *Cell*, 171(6), 1453.

Liu JJ, et al. (2016) Metabolic Engineering of Probiotic *Saccharomyces boulardii*. *Applied and environmental microbiology*, 82(8), 2280.