Resource Summary Report

Generated by dkNET on Aug 18, 2026

hGFAP-Cre

RRID:Addgene_40591
Type: Plasmid

Proper Citation

RRID:Addgene_40591

Plasmid Information

URL: http://www.addgene.org/40591

Proper Citation: RRID:Addgene_40591

Insert Name: Cre recombinase

Organism: Homo sapiens

Bacterial Resistance: Ampicillin

Defining Citation: PMID:11668683

Vector Backbone Description: Backbone Marker:Michael Brenner (PMID: 7952266); Backbone Size:5500; Vector Backbone:pgfa2-lac2; Vector Types:Mammalian Expression, Mouse Targeting, Cre/Lox; Bacterial Resistance:Ampicillin

Comments: This plasmid encodes a transgene to express the Cre recombinase in astrocytes of transgenic mice. A DNA fragment encoding the Cre recombinase was inserted into an expression cassette containing the gfa2 promoter (Besnard et al., 1991), a 2.2-kb 5' flanking region from the human GFAP (hGFAP) gene. The nuclear targeting signal from the SV40 large T antigen was inserted at the amino terminal end of the coding region, because it reportedly increases the efficiency of DNA excision by the recombinase (Gu et al., 1993). A heterologous intron and polyadenylation signal were provided by sequences from the mouse protamine 1 gene at the 3' end. The hGFAP-cre transgene was constructed by excising the lacZ coding region from pgfa2-lac2 (Brenner et al., 1994) by BamHI digestion, and replacing it by blunt end ligation with a nuclear-targeted Cre coding sequence. The latter was obtained as a 1.1-kb SalI-MluI fragment from plasmid pTZ19RCreNLS, which was kindly provided by Drs. Raul Torres and Klaus Rajewsky. Both junctions were verified by DNA sequencing.

Plasmid Name: hGFAP-Cre

Relevant Mutation: Construct contains a nuclear-targeted Cre recombinase followed by a heterologous mouse intron and polyadenylation signal, all under the control of the gfa2 promoter

Record Creation Time: 20220422T222211+0000

Record Last Update: 20260815T081437+0000

Ratings and Alerts

No rating or validation information has been found for hGFAP-Cre.

No alerts have been found for hGFAP-Cre.

Data and Source Information

Source: Addgene

Usage and Citation Metrics

We found 8 mentions in open access literature.

Listed below are recent publications. The full list is available at dkNET .

Takemura S, et al. (2025) Transformation of radial glia into postnatal neural stem cells depends on birth. Cell reports, 44(8), 116029.

Kim M, et al. (2024) In vivo neural regeneration via AAV-NeuroD1 gene delivery to astrocytes in neonatal hypoxic-ischemic brain injury. Inflammation and regeneration, 44(1), 33.

Tabata H, et al. (2022) Erratic and blood vessel-guided migration of astrocyte progenitors in the cerebral cortex. Nature communications, 13(1), 6571.

Zhang L, et al. (2020) Development of Neuroregenerative Gene Therapy to Reverse Glial Scar Tissue Back to Neuron-Enriched Tissue. Frontiers in cellular neuroscience, 14, 594170.

Chen YC, et al. (2020) A NeuroD1 AAV-Based Gene Therapy for Functional Brain Repair after Ischemic Injury through In??Vivo Astrocyte-to-Neuron Conversion. Molecular therapy : the journal of the American Society of Gene Therapy, 28(1), 217.

Puls B, et al. (2020) Regeneration of Functional Neurons After Spinal Cord Injury via in situ NeuroD1-Mediated Astrocyte-to-Neuron Conversion. Frontiers in cell and developmental biology, 8, 591883.

Li M, et al. (2017) Astrocyte-derived interleukin-15 exacerbates ischemic brain injury via propagation of cellular immunity. Proceedings of the National Academy of Sciences of the United States of America, 114(3), E396.

Hamilton LK, et al. (2015) Aberrant Lipid Metabolism in the Forebrain Niche Suppresses Adult Neural Stem Cell Proliferation in an Animal Model of Alzheimer's Disease. Cell stem cell, 17(4), 397.