

Supplemental Information

Rabies virus CVS-N2c^{AG} strain enhances retrograde synaptic transfer and neuronal viability

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Inventory of supplemental information

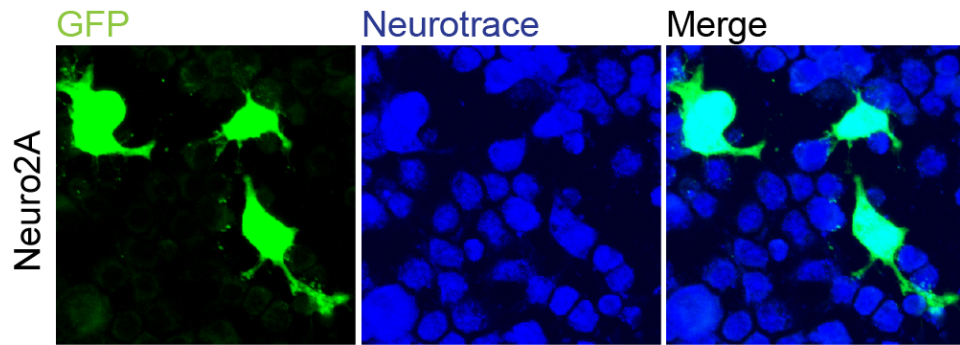
A brief overview of how the Supplemental Figures relate to the main text is provided below.

Supplementary Figure 1, related to Figure 1: Neuro2a cells infected with CVS-N2c^{AG}.

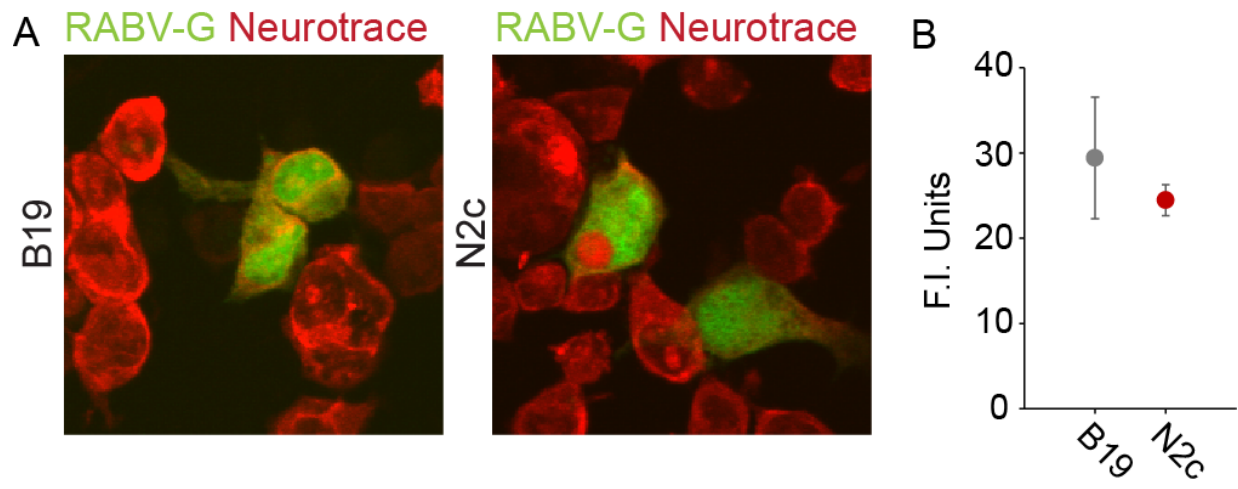
Supplementary Figure 2, related to Figure 1: RABV glycoprotein immunofluorescence after transfection with AAV constructs.

Supplementary Figure 3, related to Figures 1-3: Control experiments for the EnvA-pseudotyped CVS-N2c^{AG} and the AAV constructs.

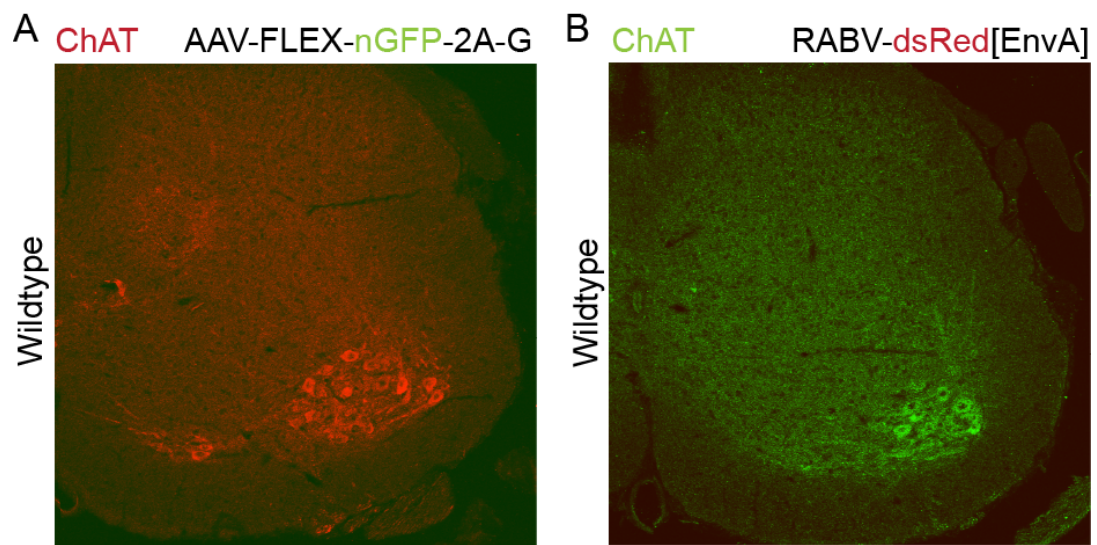
Supplementary Table 1, related to Table 1: Titer of viruses used in this study.



Supplementary Figure 1



Supplementary Figure 2



Supplementary Figure 3

Virus Type	Name	Gene(s)	Titer (units/ml)	First described	Estimated production time from rescue
RABV-B19	SAD-B19ΔG-GFP	GFP	1x10 ⁹ (WTG) 1x10 ⁸ (EnvA)	Wickersham et al. (2007)	3-4 weeks*
RABV-N2c	CVS-N2cΔG-GFP	GFP	3x10 ⁸ (WTG) 2x10 ⁷ (EnvA)	Here	6-8 weeks WTG + 2 weeks
RABV-B19	SAD-B19ΔG-dsRed	dsRed	1x10 ⁹ (WTG) 1x10 ⁸ (EnvA)	Osakada et al., 2011	3-4 weeks*
RABV-N2c	CVS-N2cΔG-dsRed	dsRed	2x10 ⁸ (WTG) 1x10 ⁷ (EnvA)	Here	6-8 weeks WTG + 2 weeks
RABV-B19	SAD-B19ΔG-ChR2-eYFP	ChR2 & eYFP	1x10 ⁹ (WTG)	Osakada et al., 2011	3-4 weeks*
RABV-N2c	CVS-N2cΔG-ChR2-eYFP	ChR2 & eYFP	1x10 ⁷ (WTG)	Here	6-8 weeks WTG + 2 weeks
RABV-B19	SAD-B19ΔG-GCaMP6f	GCaMP6f	2x10 ⁹ (WTG)	Here, but see Osakada et al., 2011 for B19-GCaMP3	3-4 weeks*
RABV-N2c	CVS-N2cΔG-GCaMP6f	GCaMP6f	6x10 ⁷ (WTG)	Here	6-8 weeks WTG + 2 weeks
AAV2/1	AAV2/1-FLEX-nGFP-2A-B19G	HistoneGFP and B19G	2x10 ⁹	Kaifosh et al., 2013 (and Addgene 37452, 2012)	1 week
AAV2/1	AAV2/1-FLEX-nGFP-2A-N2cG	HistoneGFP and N2cG	2x10 ⁹	Here	1 week
AAV2/1	AAV2/1-FLEX-TVA-mCherry	TVA and mCherry	2x10 ⁹	Watabe-Uchida et al., 2012	1 week

Supplementary Table 1.

Supplementary Figure Legends

Supplementary Figure 1, related to Figure 1: Infection of Neuro2A cells with CVS-N2c Δ G.

Neuro2A cells infected with CVS-N2c ^{Δ G}, expression after 4 days.

Supplementary Figure 2, related to Figure 1: Glycoprotein expression from AAV helpers.

(A) Example images of Neuro2A cells infected with AAVs driving B19-G (left) or N2c-G (right). (B) Plot of rabies glycoprotein fluorescence intensity.

Supplementary Figure 3, related to Figures 1-3: Selectivity of FLEX AAVs and EnvA-pseudotyped rabies virus. (A) Injection of AAV-FLEX-nGFP-2A-G into spinal cord of wild-type mice. (B) Injection of RABV ^{Δ G}-N2c-dsRed[EnvA] into spinal cord of wild-type mice.

Supplementary Table 1, related to Table 1: Viral vectors and titers used in this study. Titers are expressed as infectious units/ml. * see Wickersham et al., 2010.