HHS Public Access

Author manuscript

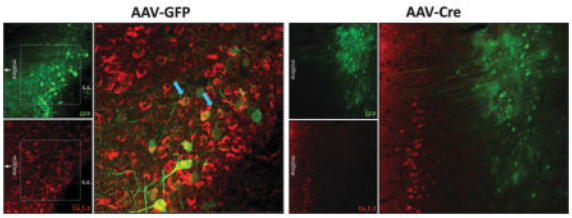
Mol Psychiatry. Author manuscript; available in PMC 2018 March 05.

Published in final edited form as:

Mol Psychiatry. 2012 November ; 17(11): 1051. doi:10.1038/mp.2012.149.

Selective genetic deletion of cacna1c in the mouse prefrontal cortex

AS Lee, **KL Gonzales**, **A Lee**, **S Moosmang**, **F Hofmann**, **AA Pieper**, and **AM Rajadhyaksha**



The image illustrates the elimination of $Ca_v1.2$ protein, encoded by the *cacna1c* gene, in the mouse prefrontal cortex (PFC) using adenoassociated viral (AAV) vector-expressing Cre recombinase (AAV-Cre). Cacna1c was focally eliminated in the PFC via bilateral stereotactic delivery of AAV-Cre (right panel) into the PFC of floxed cacna1c mice.[1] AAV-expressing green fluorescent protein (AAV-GFP) was used as a control, as shown in the left panel. Double immunohistochemical analysis was used to visualize GFP (green; top left image) and $Ca_v1.2$ (red; bottom left image) protein using anti-GFP and anti-$Ca_v1.2$ (ref. 2) antibodies, respectively. The larger left image displays co-localization of GFP and $Ca_v1.2$ (blue arrows), indicating that AAV-GFP did not alter levels of $Ca_v1.2$.

The right panel shows loss of $Ca_v1.2$ protein selectively in the PFC after delivery of AAV-Cre. As AAV-Cre also expresses GFP, viral spread can be readily visualized through immunohistochemical detection of GFP (green; top right image). Co-labeling with anti-$Ca_v1.2$ antibody identifies $Ca_v1.2$ protein (red; bottom right image). The larger image in the right panel shows the absence of $Ca_v1.2$ labeling in regions expressing GFP (green), indicating focal deletion of cacna1c by AAV-Cre. c.c., corpus callosum.

For more information on this topic, please refer to the article by Lee *et al.*, on pages 1054–1055.

References

1. Moosmang S, Haider N, Klugbauer N, Adelsberger H, Langwieser N, Müller J, et al. J Neurosci. 2005; 25:9883–9892. [PubMed: 16251435]
2. Tippens AL, Pare JF, Langwieser N, Moosmang S, Milner TA, Smith Y, et al. J Comp Neurol. 2008; 506:569–583. [PubMed: 18067152]