

Fig. 1

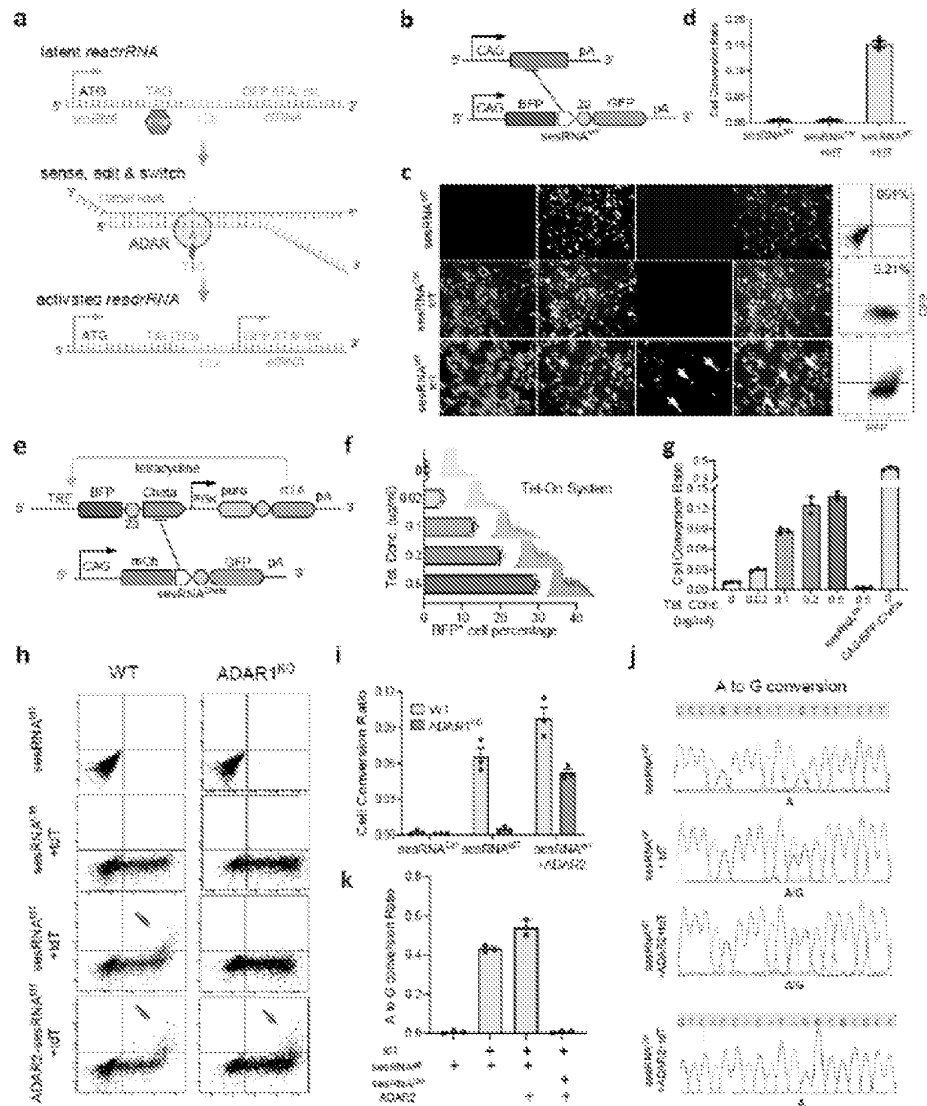


Fig 2: sesRNA properties.

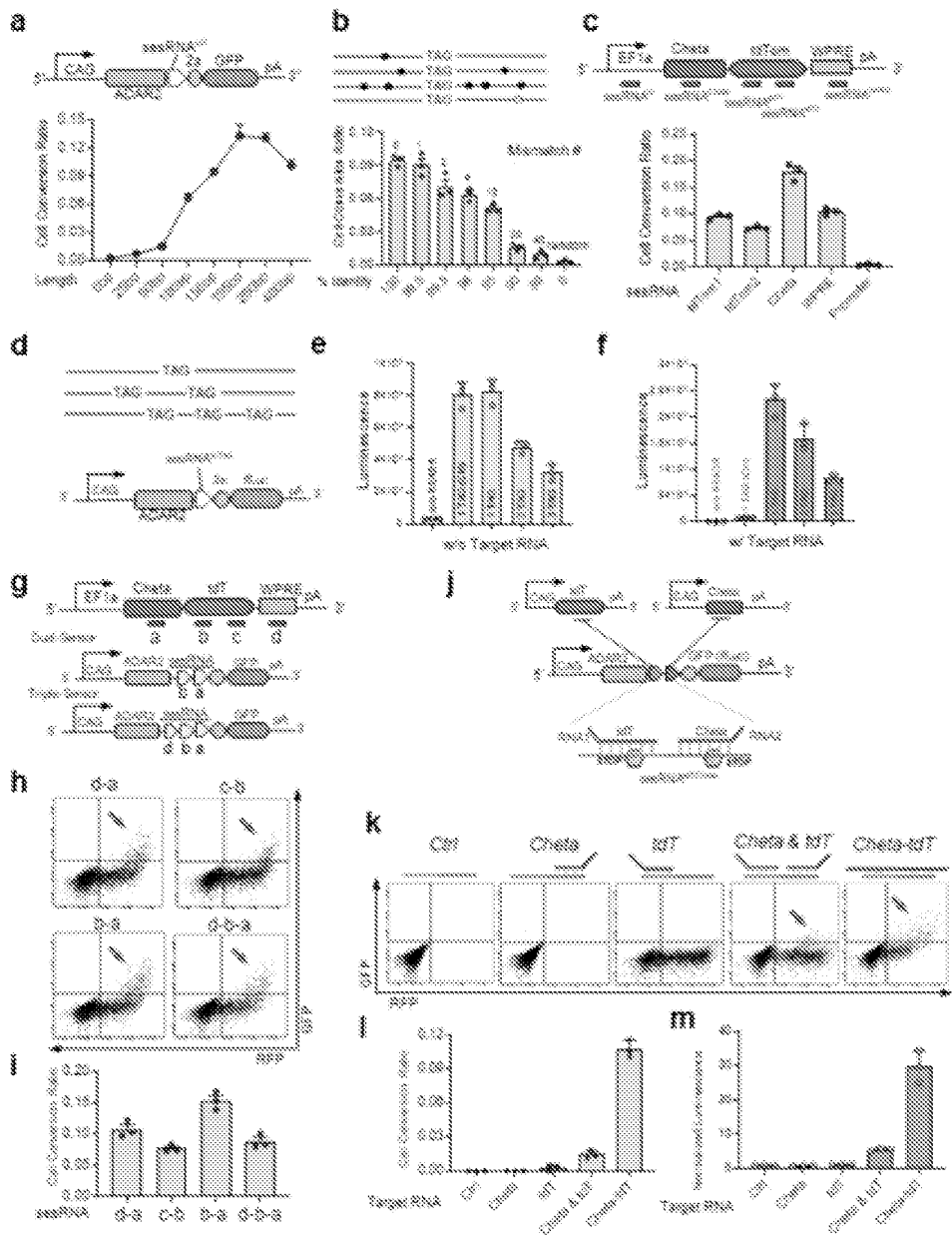


Fig 3. Endogenous RNA sensing with CellREADR

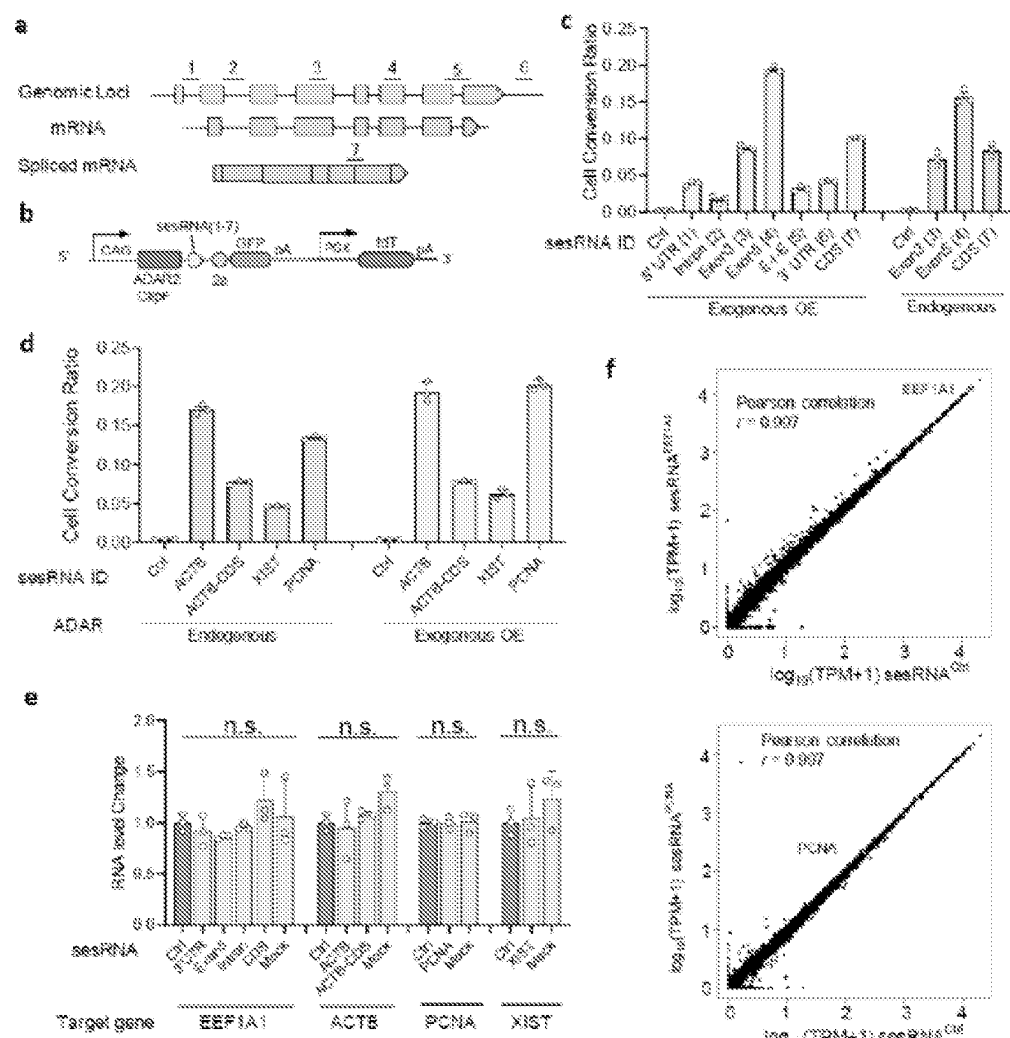


Fig. 3 continued

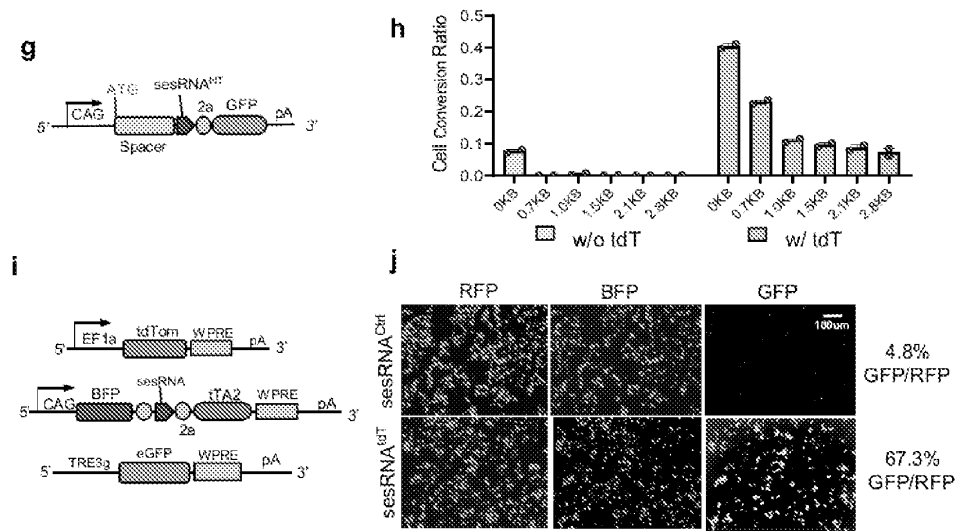


Fig 4. CellREADR targeting, monitoring, and manipulation of a neuronal cell type in mice

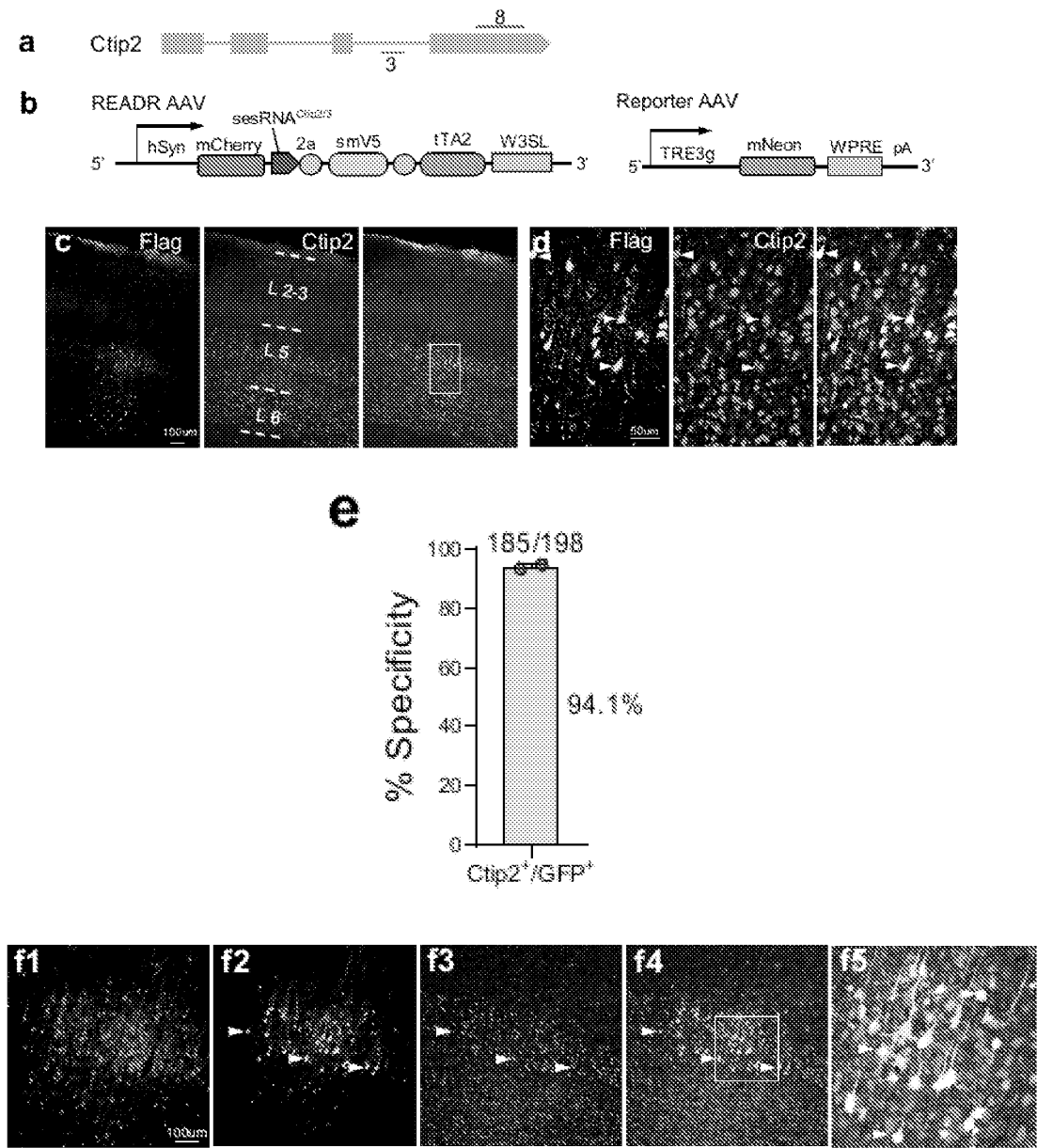


Fig 4. Continued

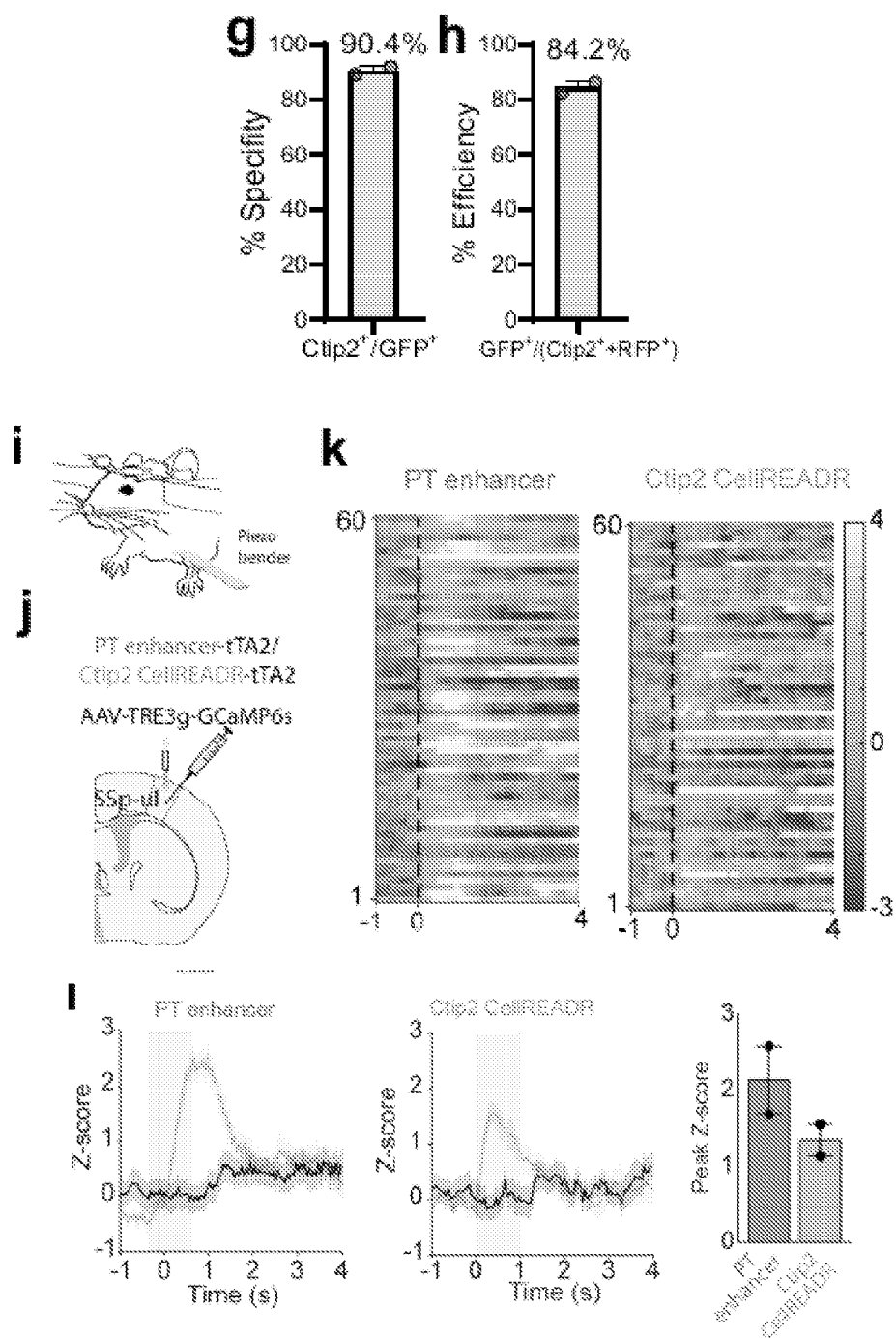


Fig 4. Continued

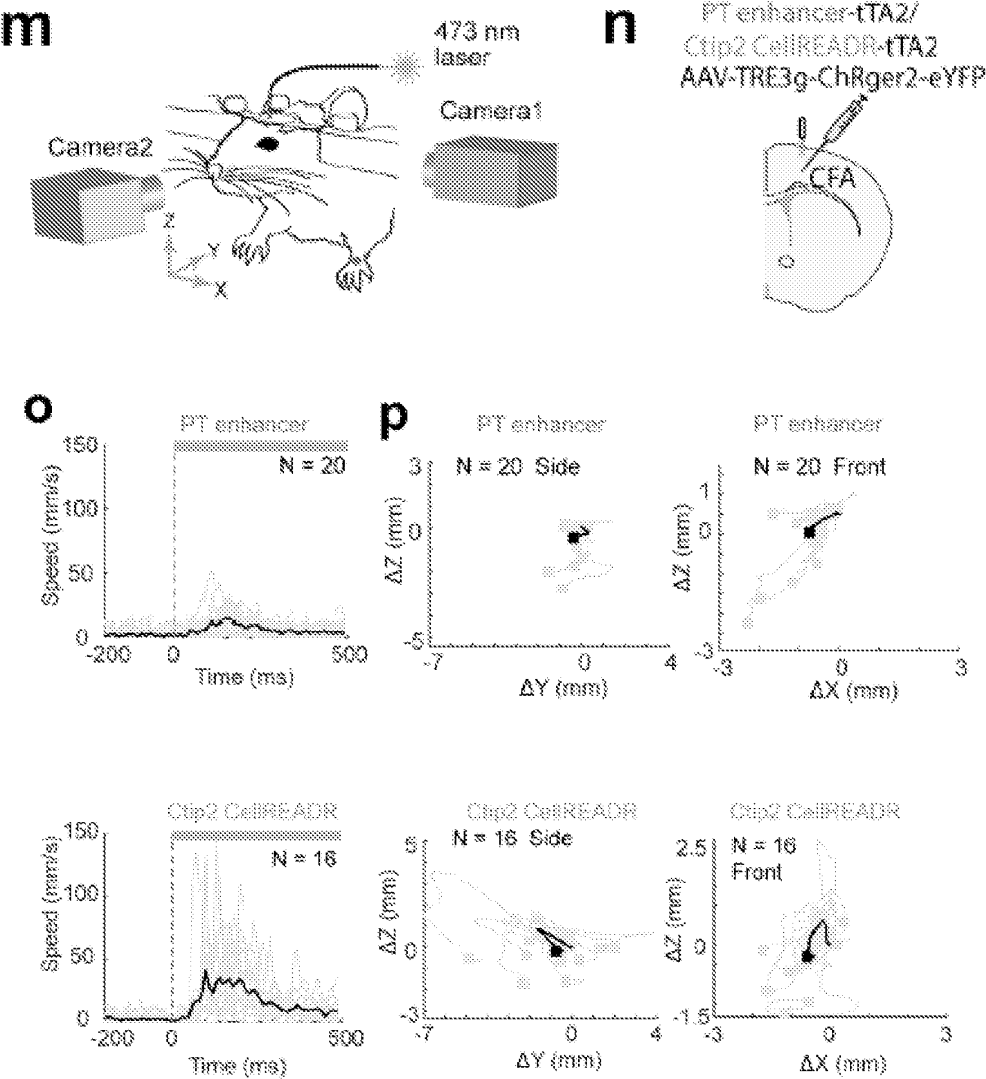


Fig 5. CellREADR-enabled targeting and recording of human cortical neuron types

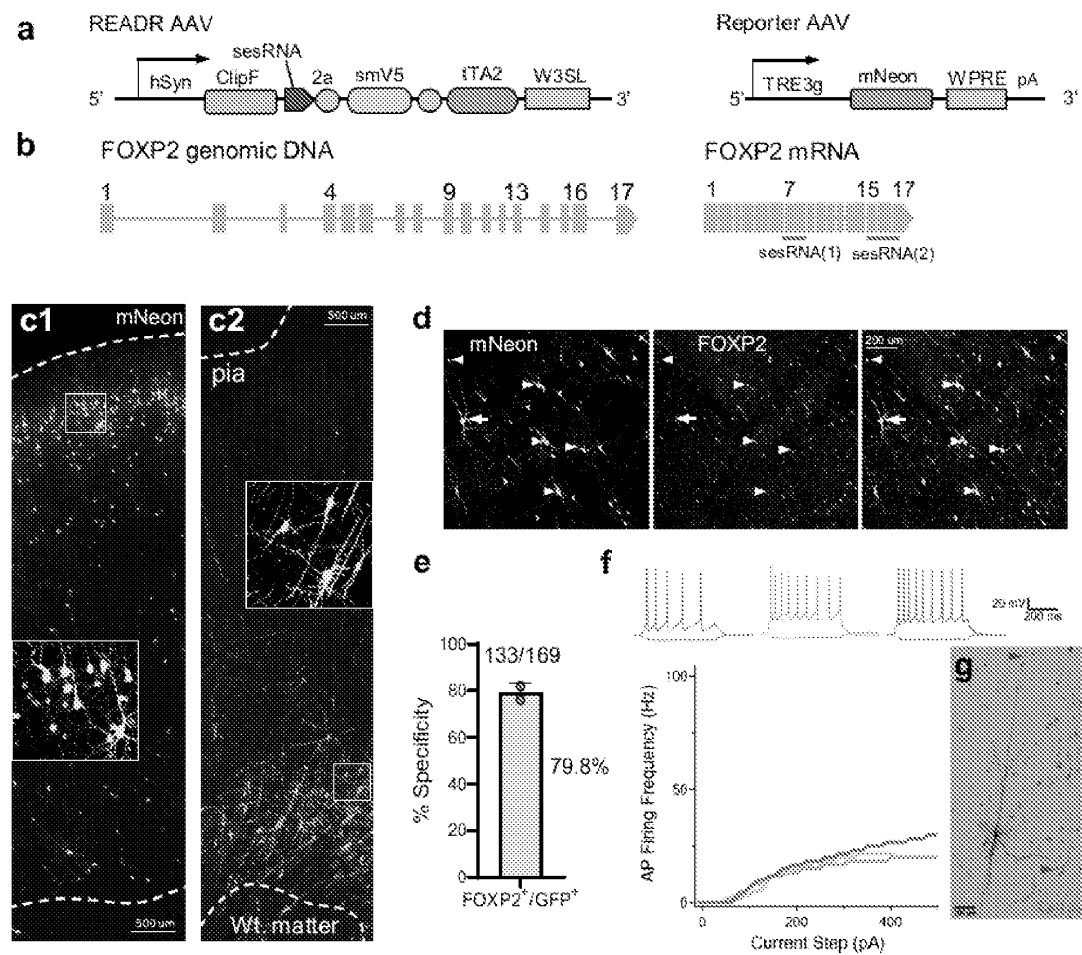


Fig. 5 Continued

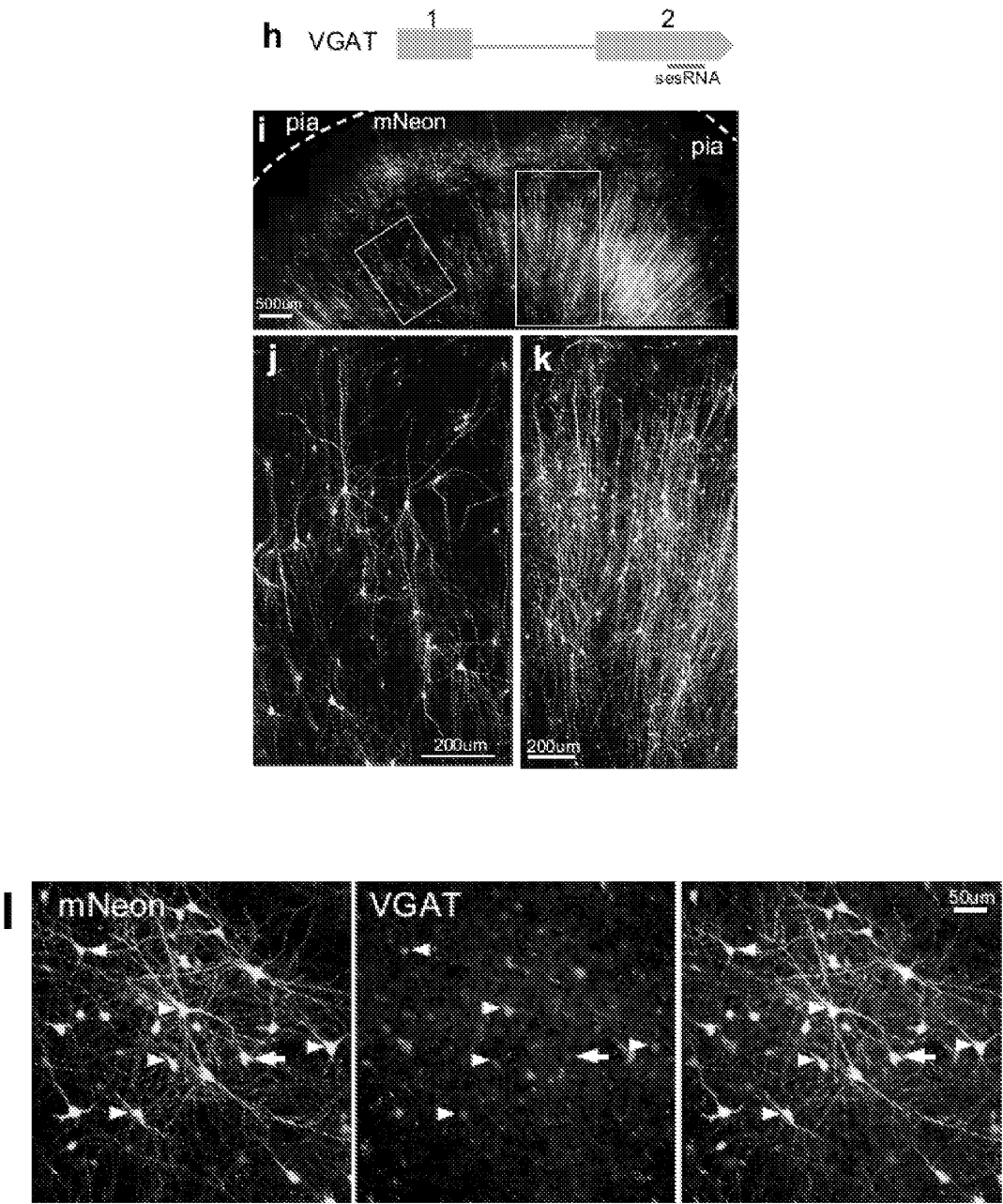


Fig. 5 Continued

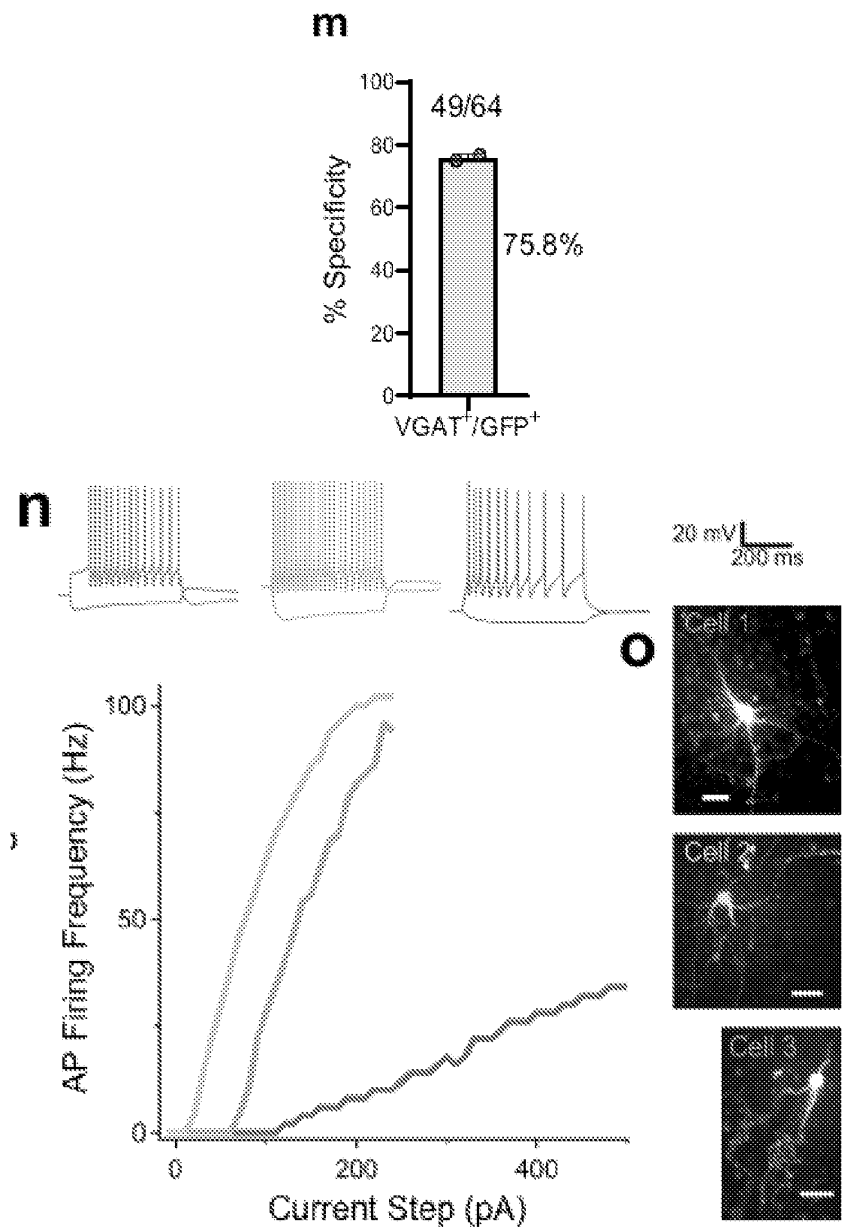


Fig. 6 Design and test of singular and binary CellREADR vectors

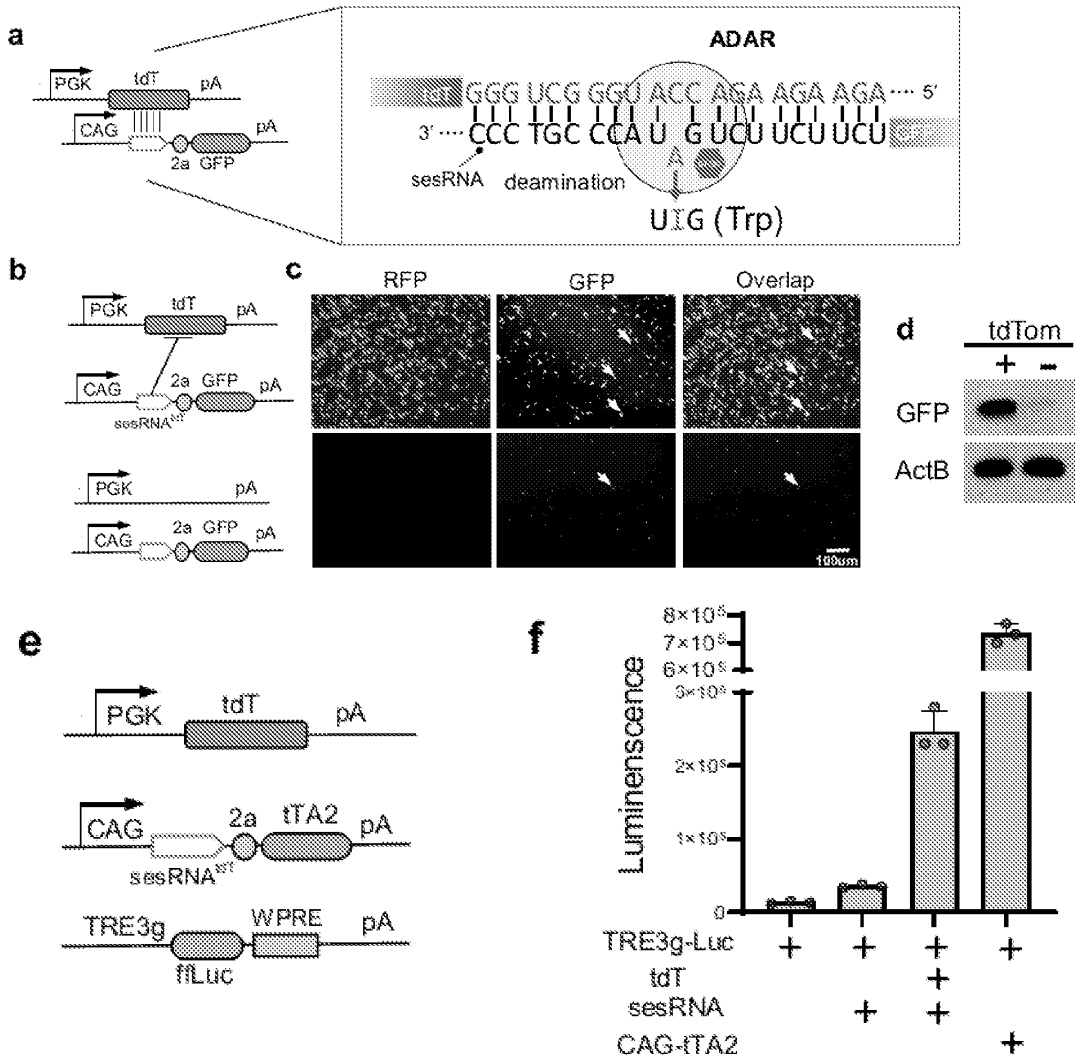


Fig. 6 Continued

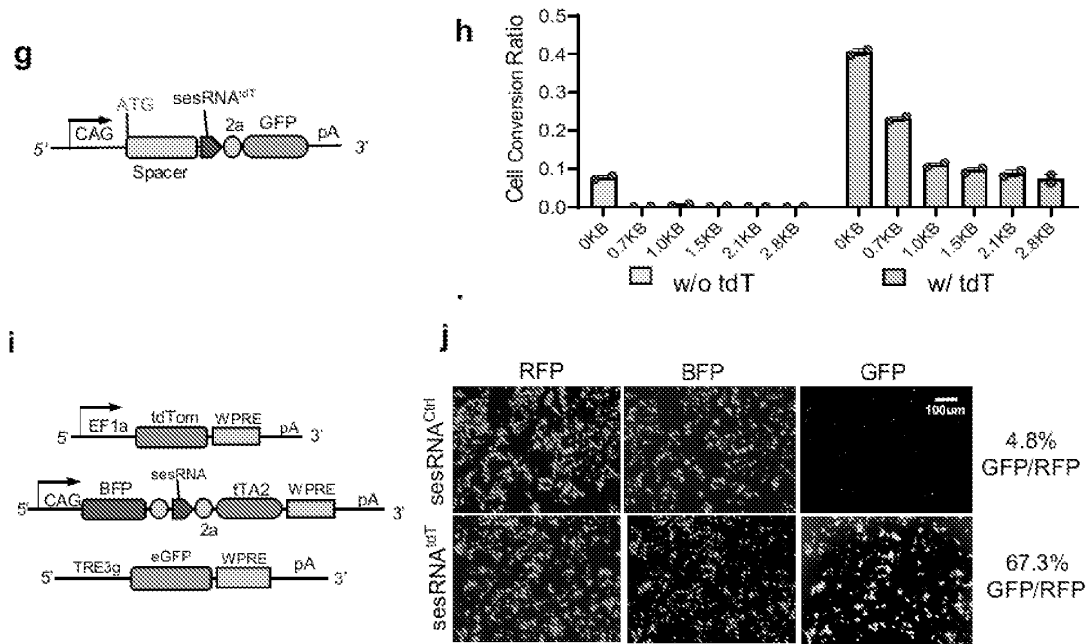


Fig. 7. CellREADR enables RNA sensing dependent gene editing and cell ablation

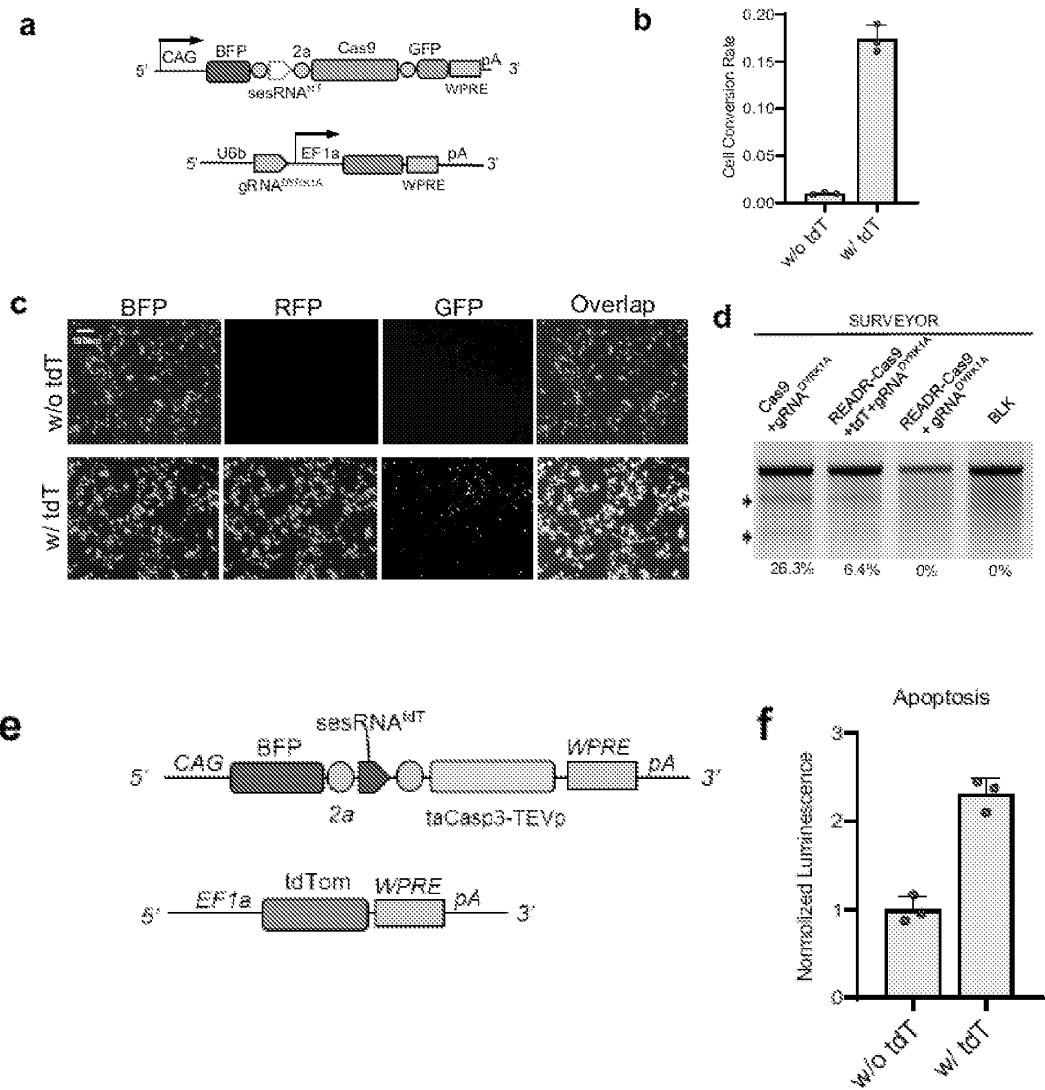


Fig. 8. Effects of CellIREADR on targeted mRNA

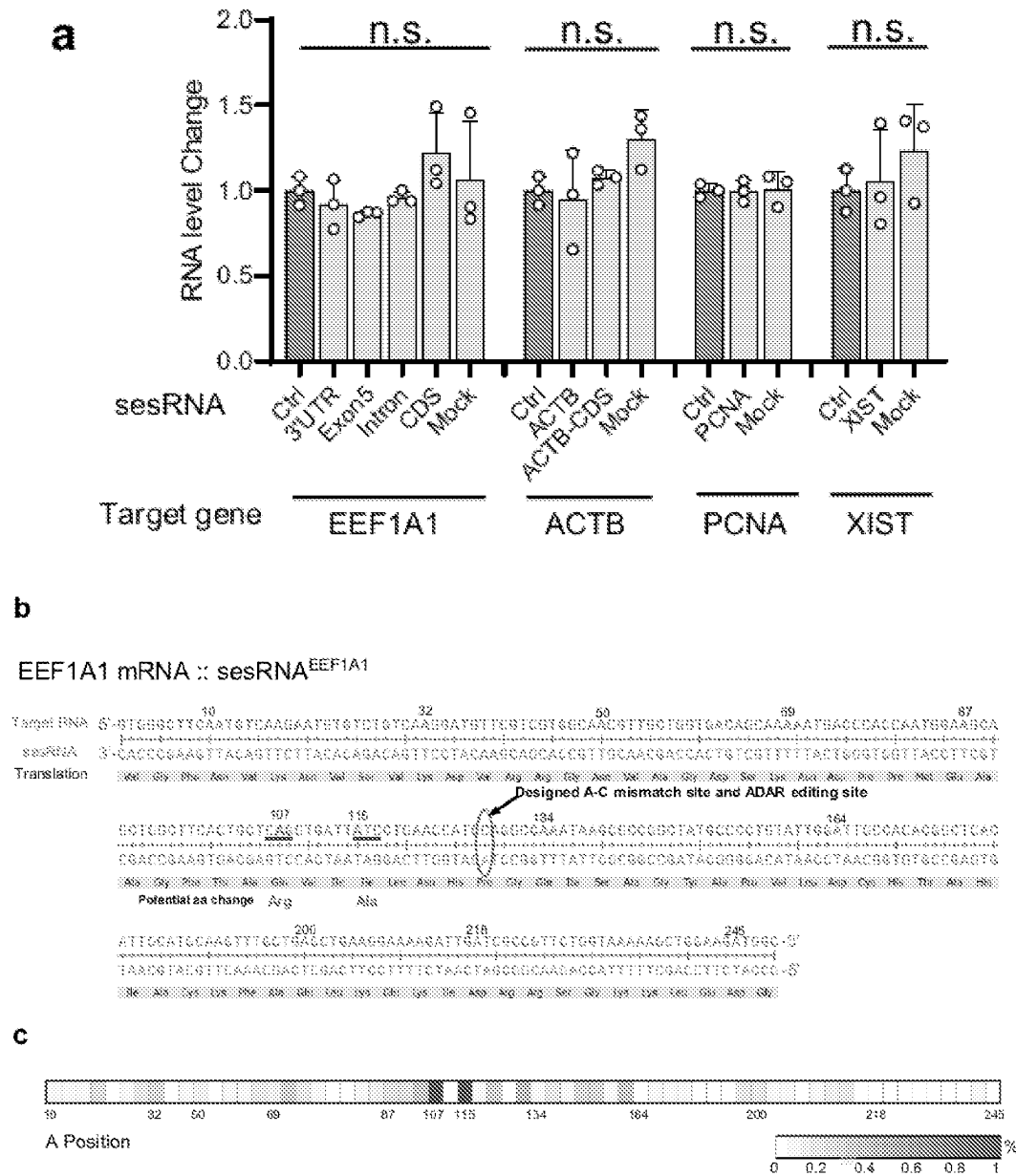


Fig. 9 Design and screen of sesRNAs targeting Fezf2 and Ctlf2 RNAs *in vitro* and *in vivo*

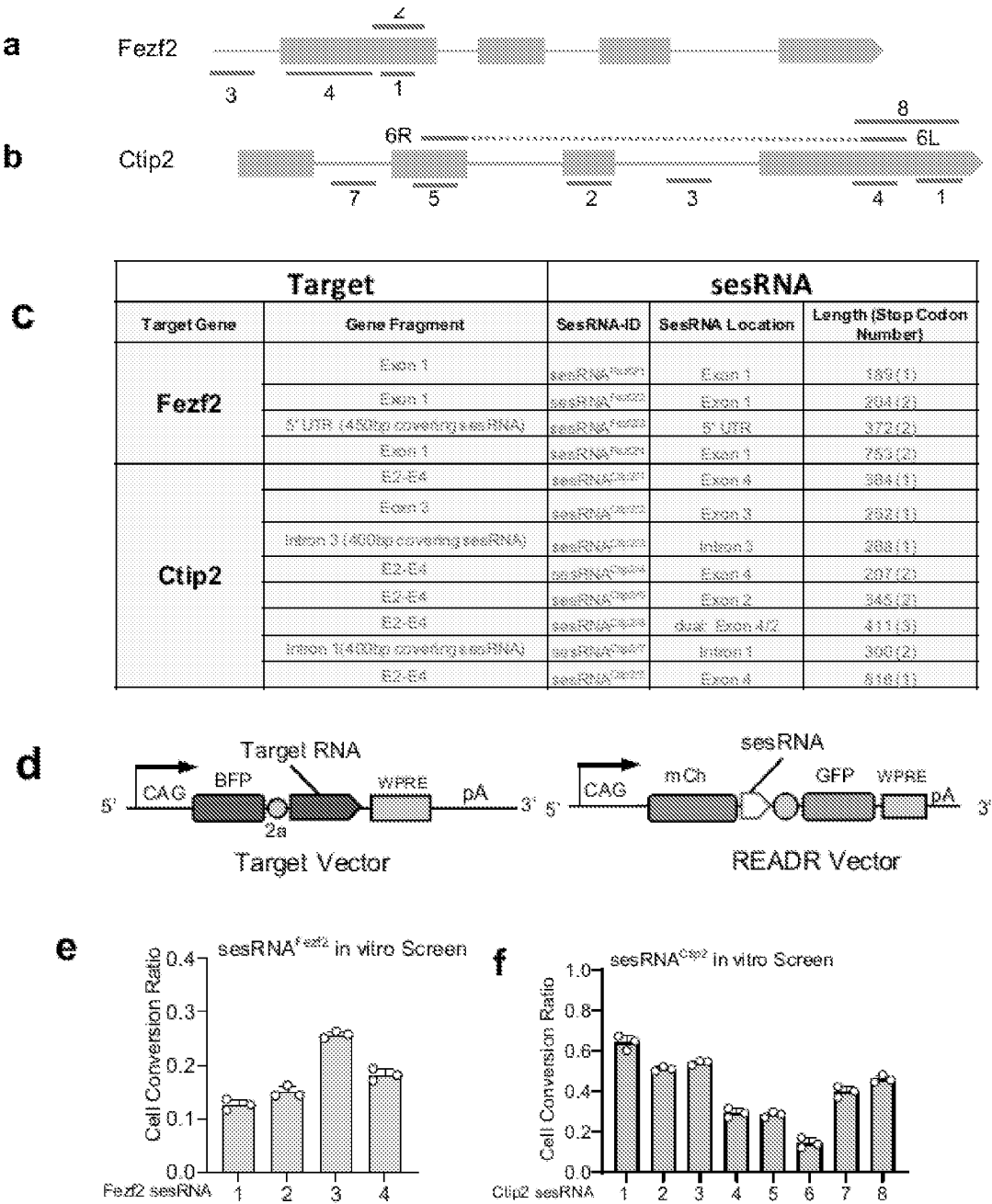


Fig. 9 Continued

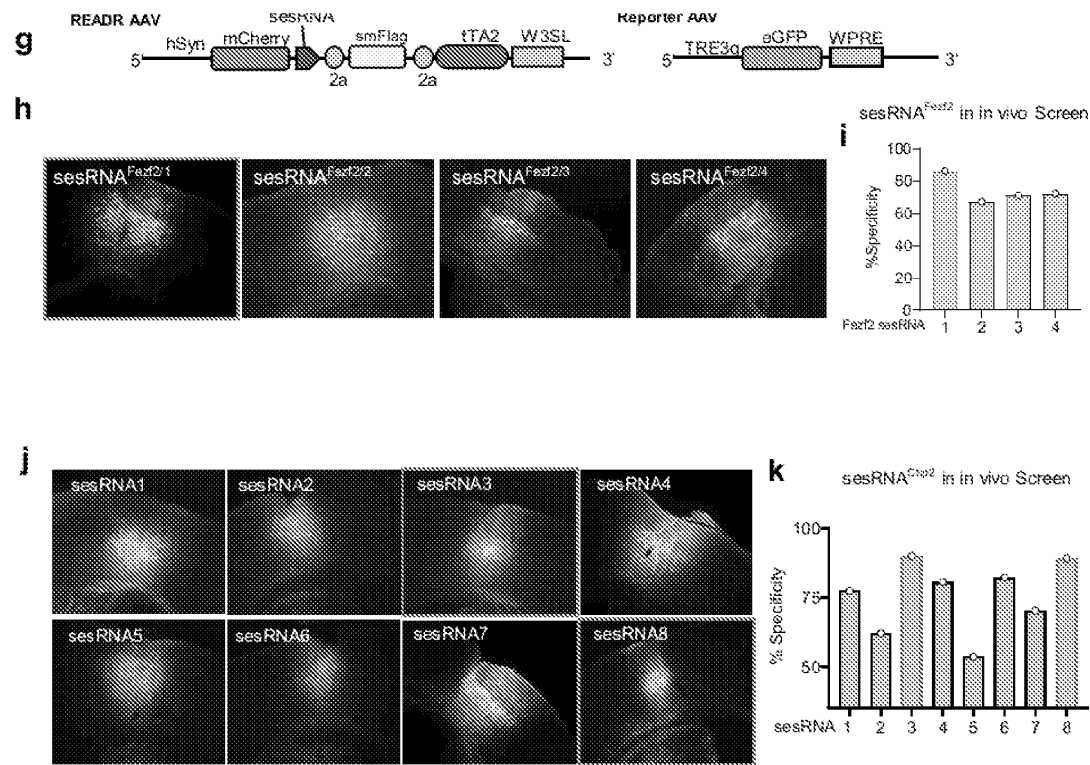


Fig. 10 CellREADR targeting of PNFezf2 and PNCtip2 types in mouse cortex with ADAR2 overexpression

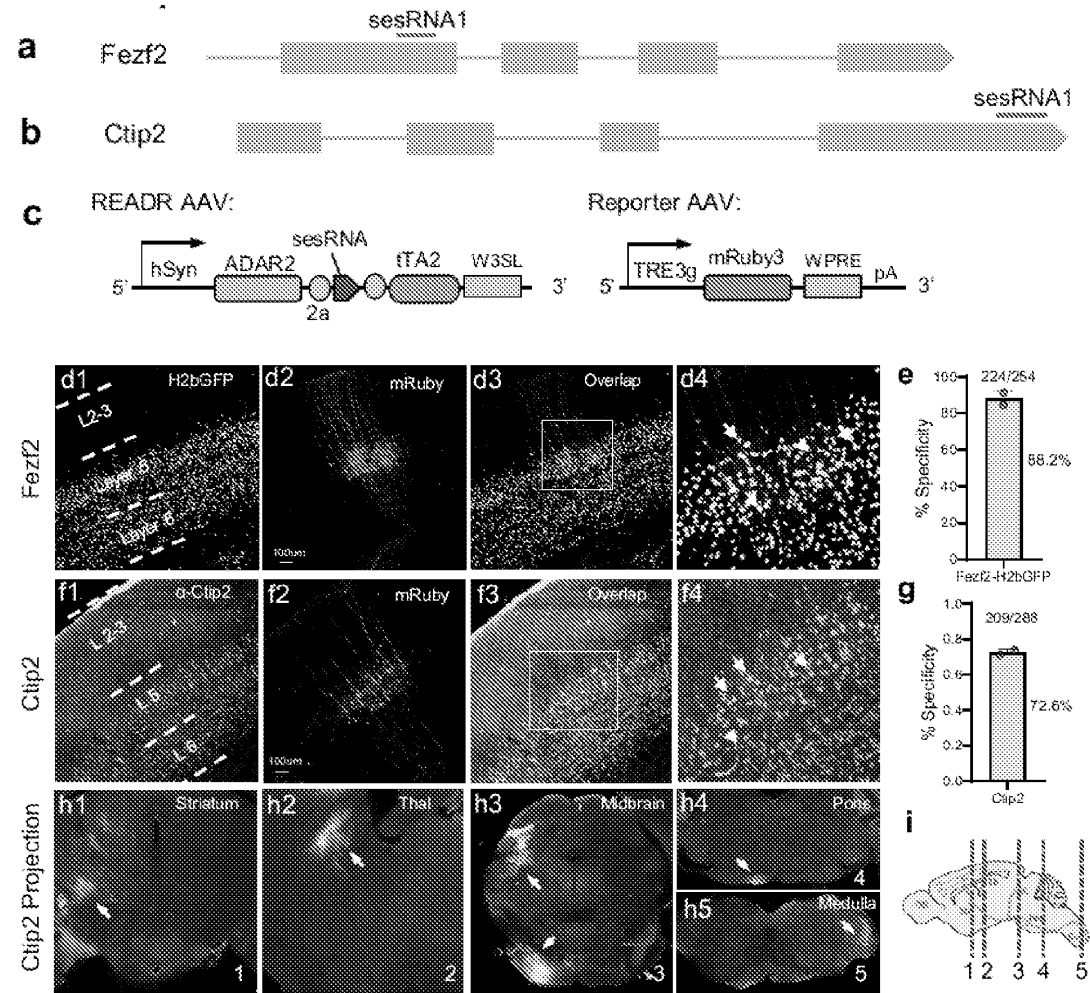


Fig. 11 Expression level and laminar distribution of cortical cell type markers in mice

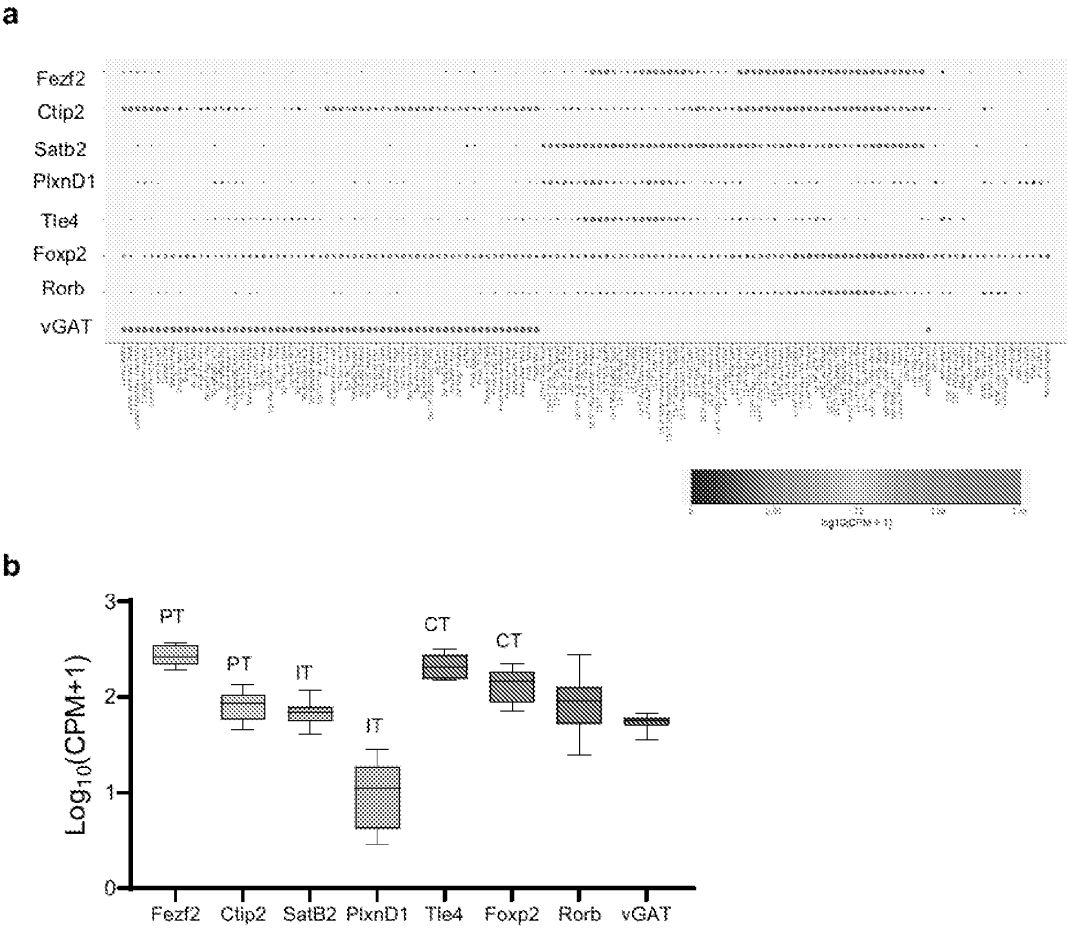


Fig. 12 CellREADR targeting of additional cortical neuron types in the mouse

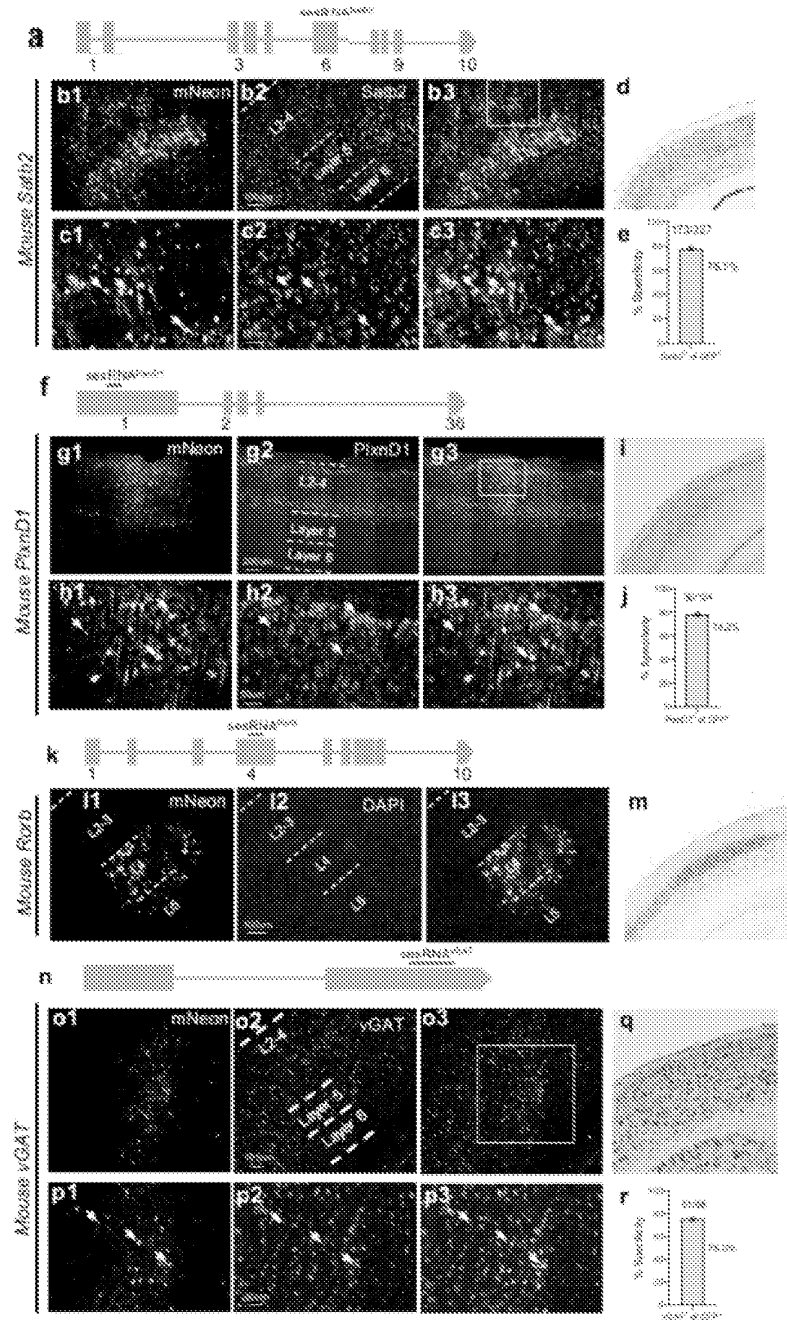


Fig. 13 Assessment of cortical cellular immune responses following long-term expression of CellREADR vectors

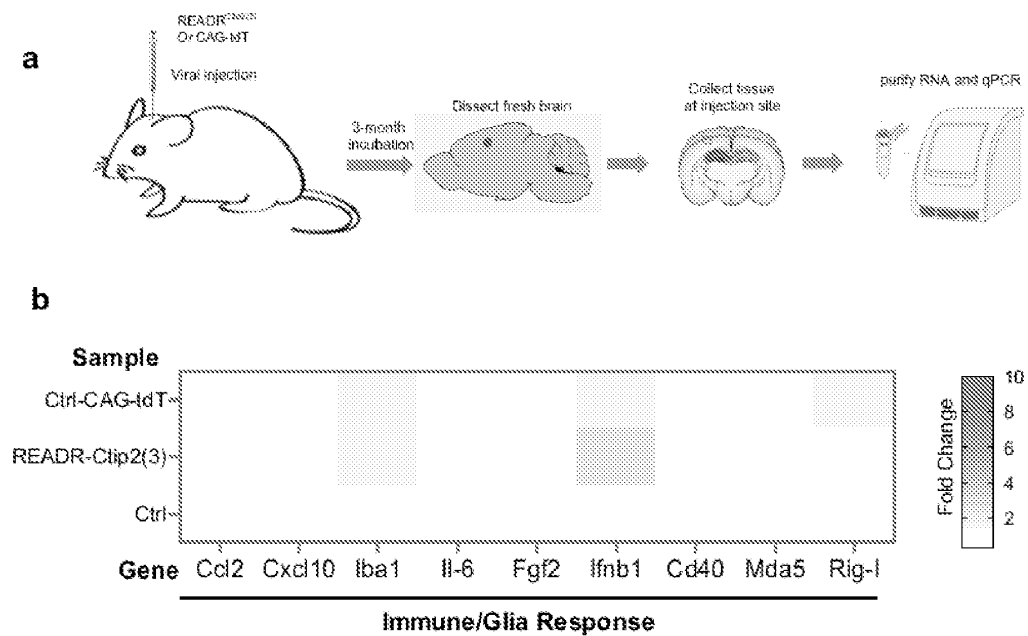


Fig. 14 Axonal projection pattern of L5/6 CFPNs in caudal forelimb motor area

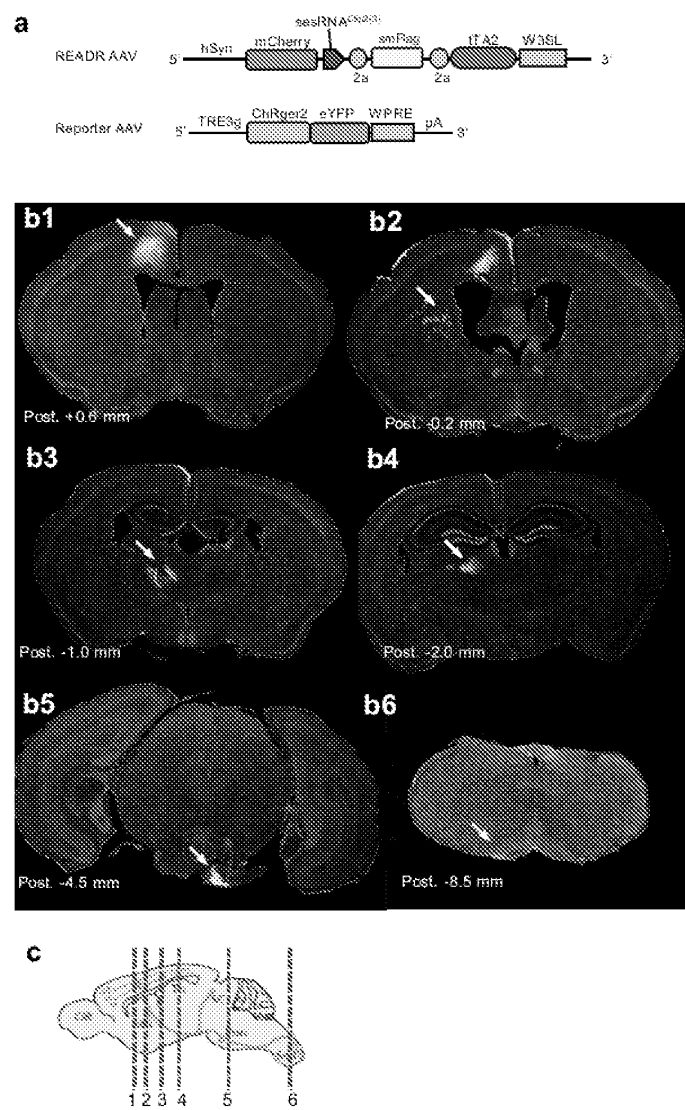


Fig. 15 CellREADR targeting of neuron types in rat

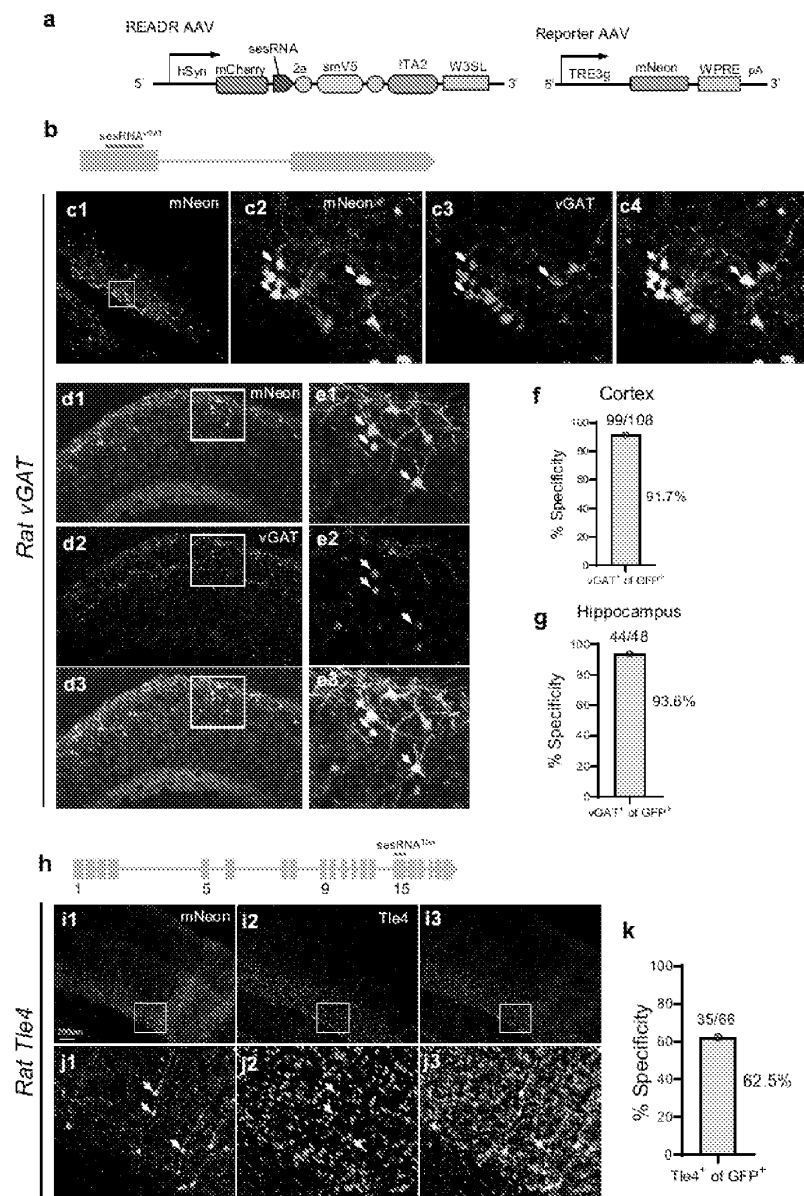


Fig. 16 CellREADR vector targeting of neuron types in human cortical *ex vivo* tissues

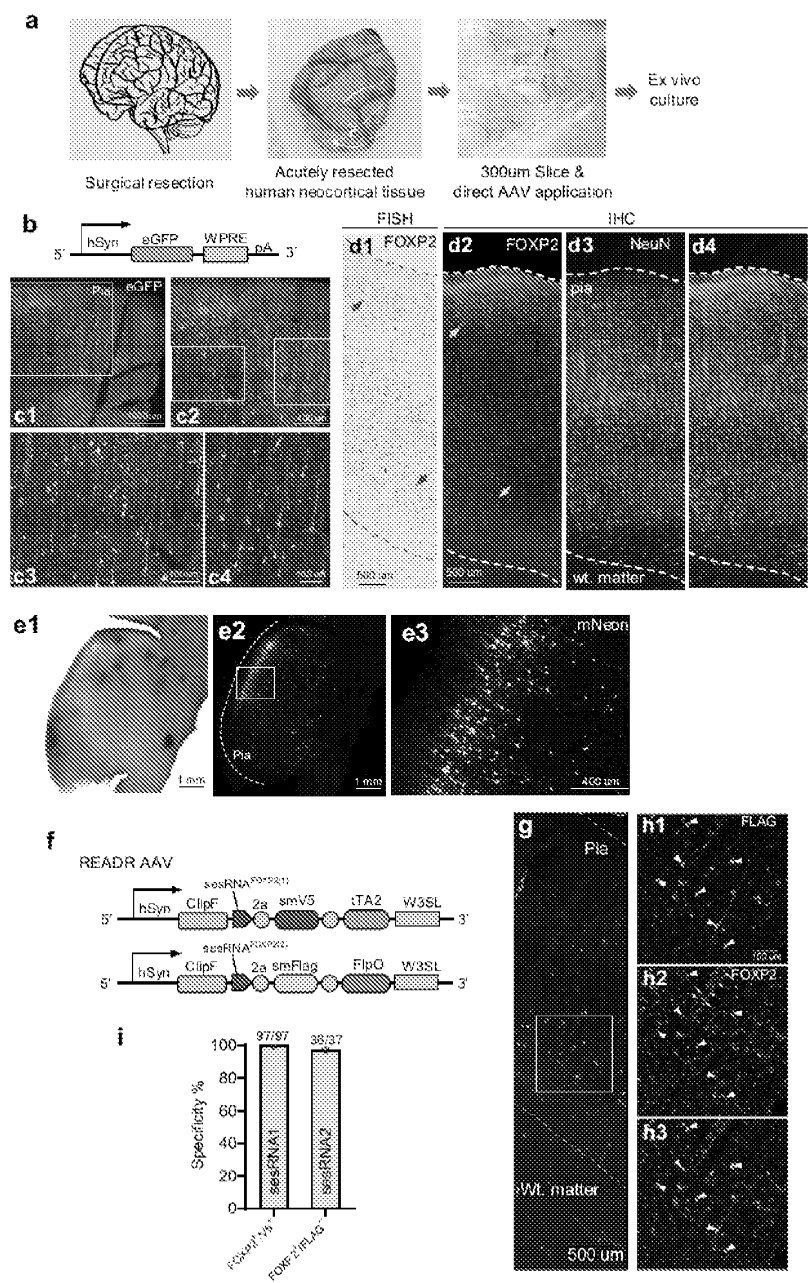


Fig. 17 Epilepsy CellREADR targeting of GABA neurons in macaque cortex *in vivo*.

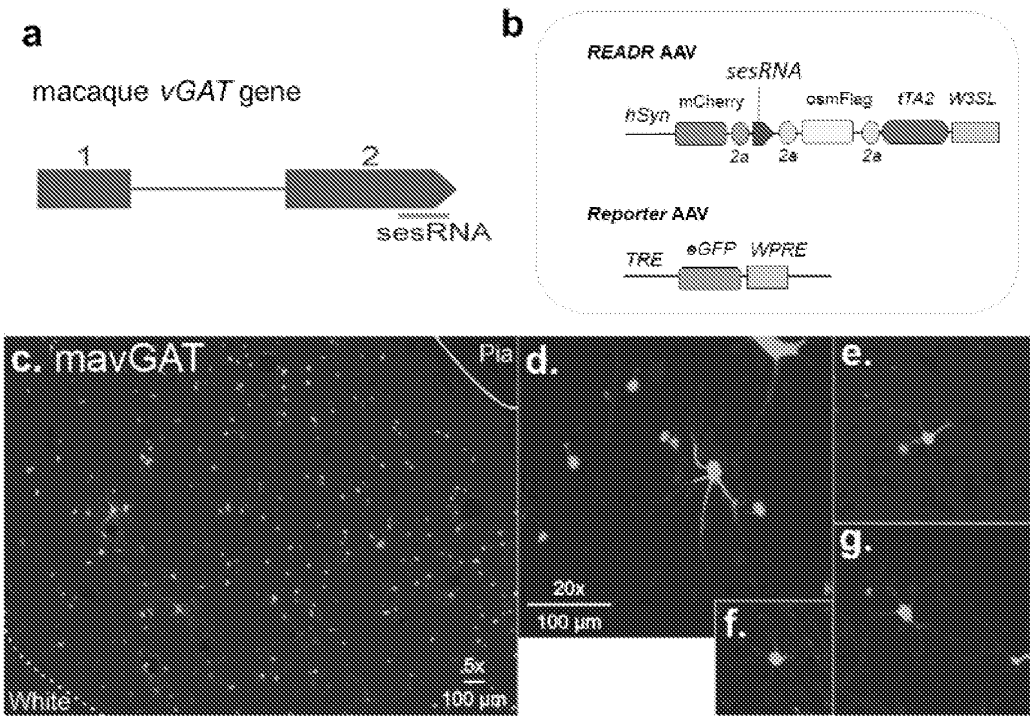


Fig. 18 Epilepsy CellREADR targeting of human PV and SST neurons in human neocortex ex vivo tissue from resected epilepsy patients.

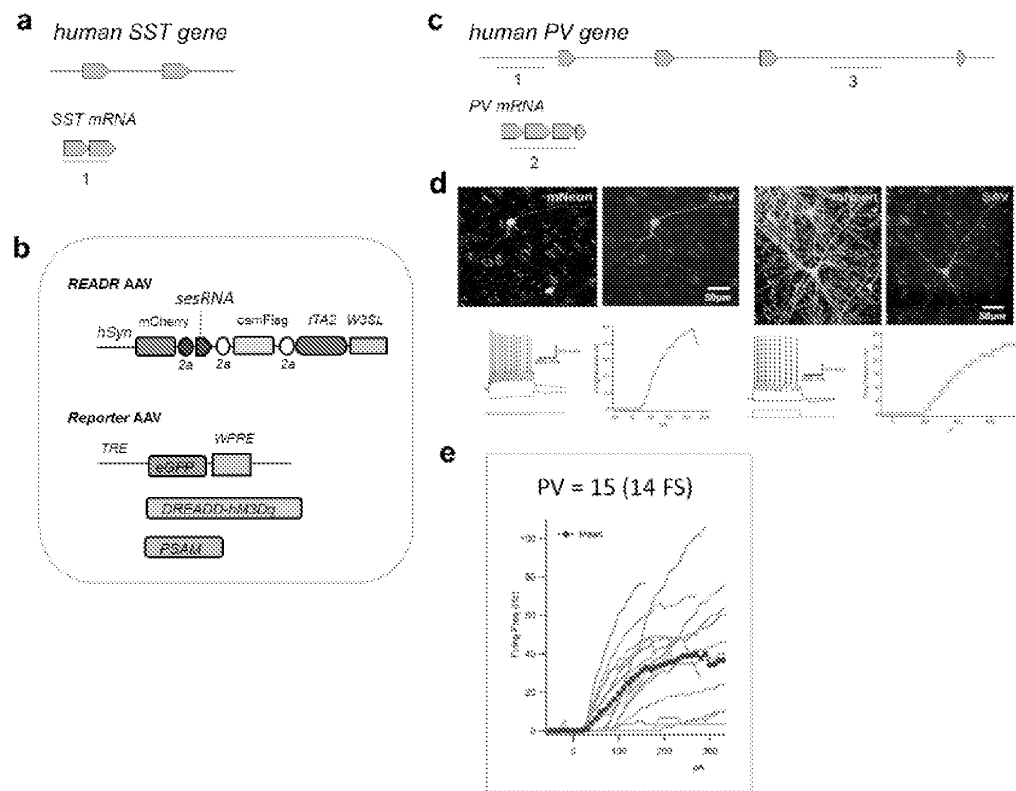


Fig. 19 CellREADR targeting of GLU and GABA neuron types in macaque.

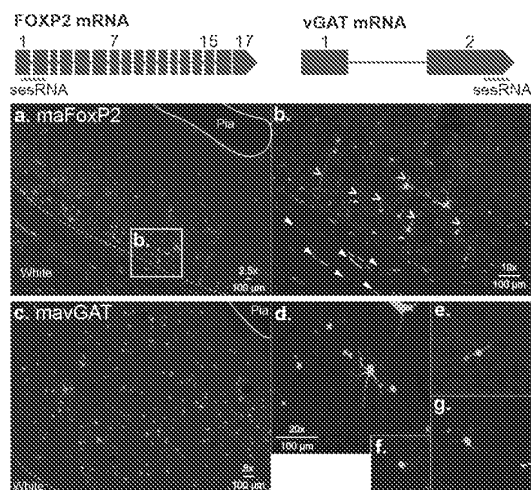


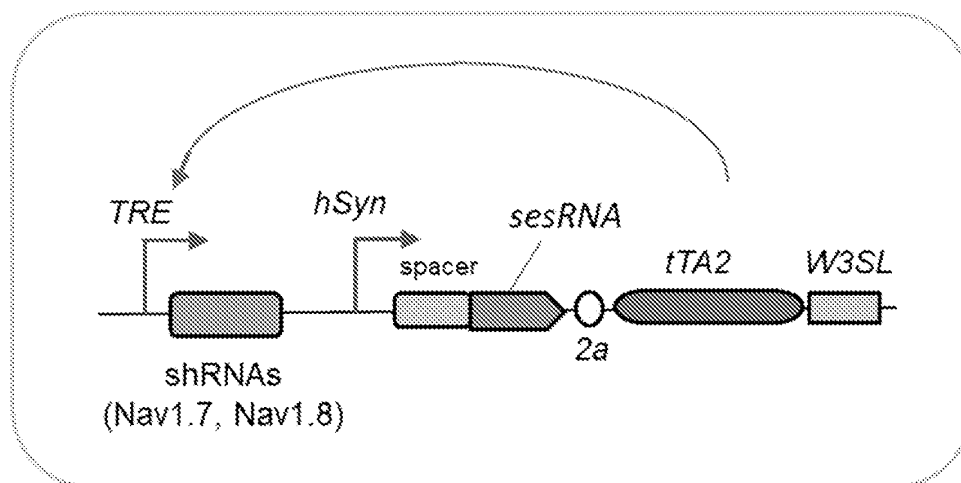
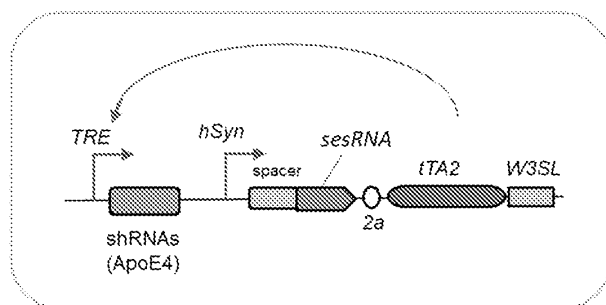
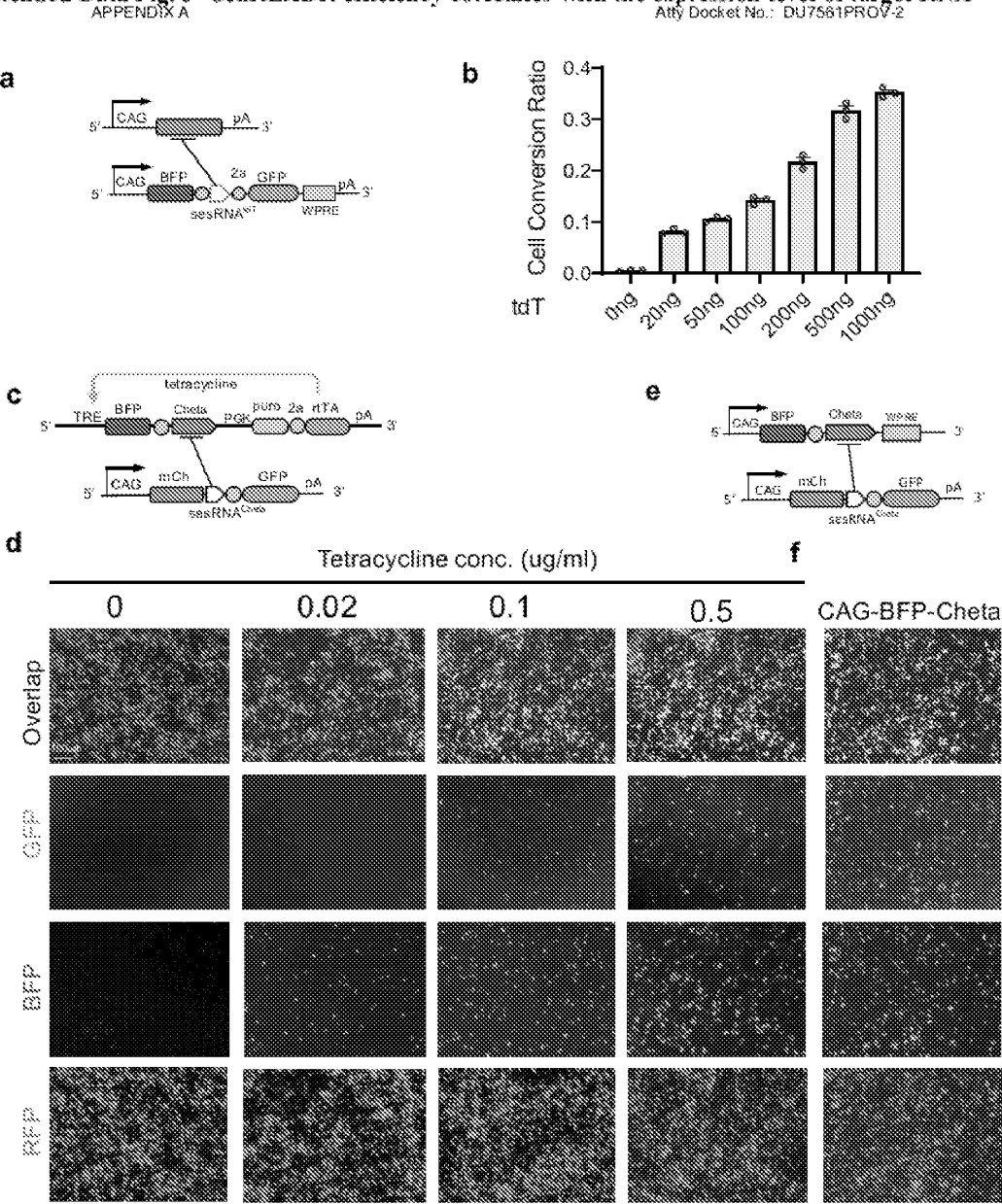
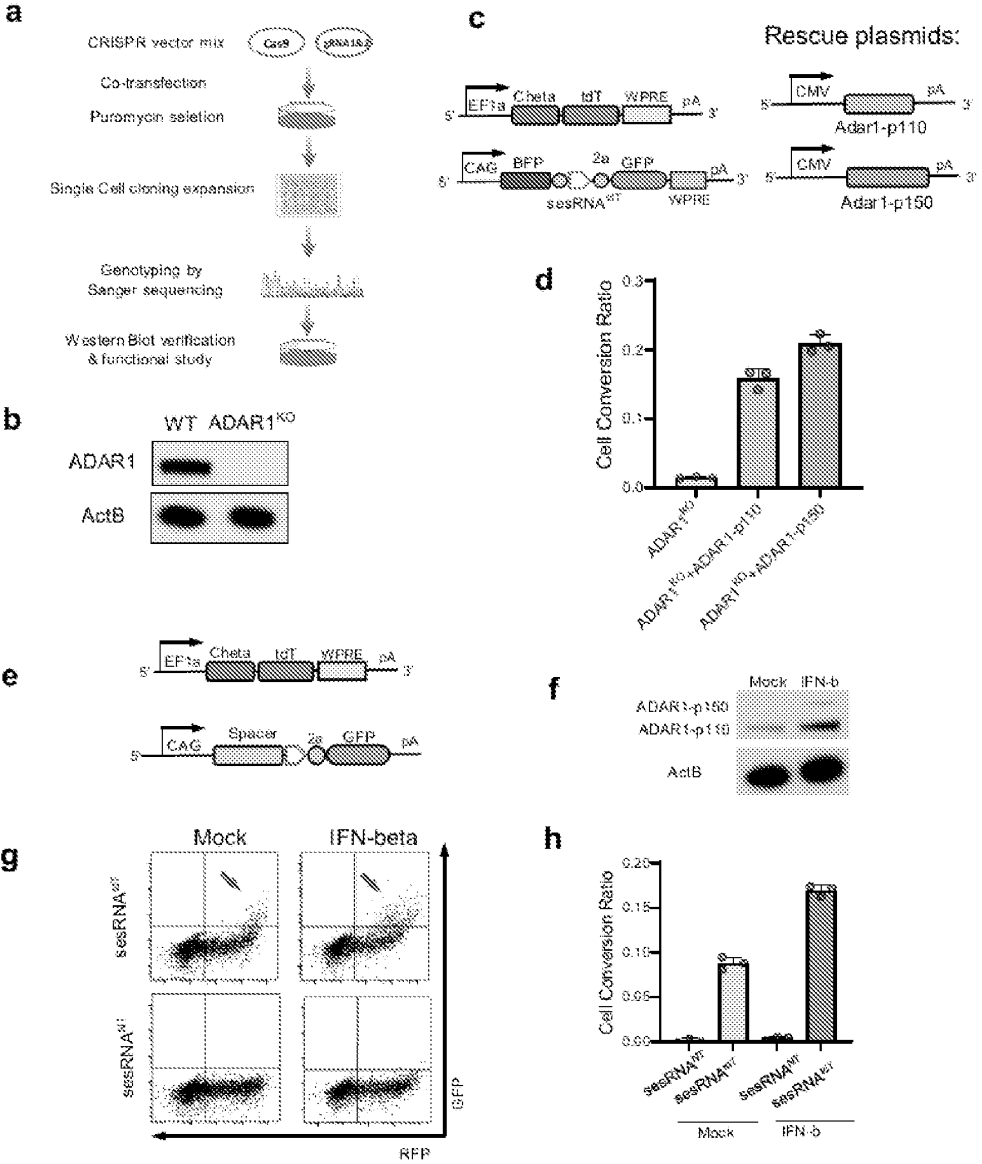
Fig. 20 Cell specific treatment of chronic pain

Fig. 21 Cell specific intervention of Alzheimer's disease

Extended Data Fig. 3 CellREADR efficiency correlates with the expression level of target RNA

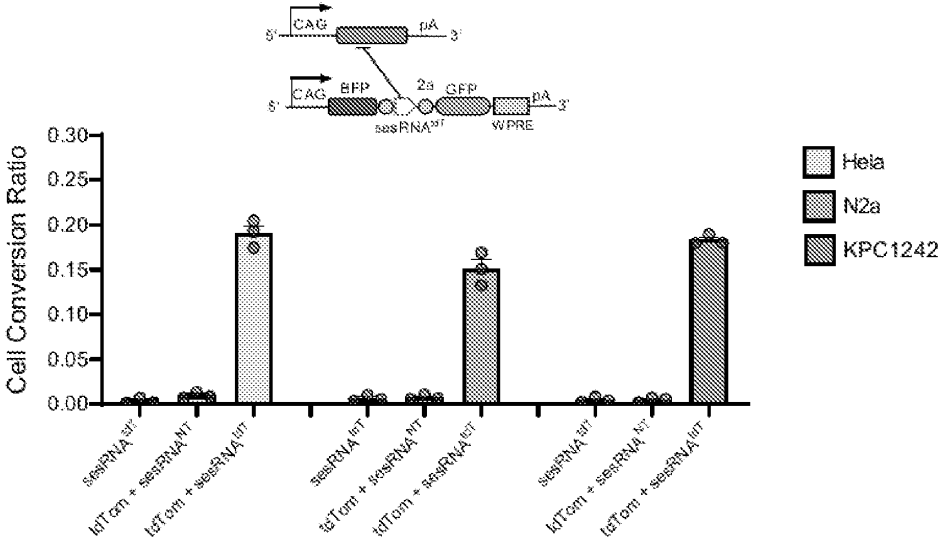


Extended Data Fig. 4 ADAR1 is necessary for CellREADR in 293T cells.

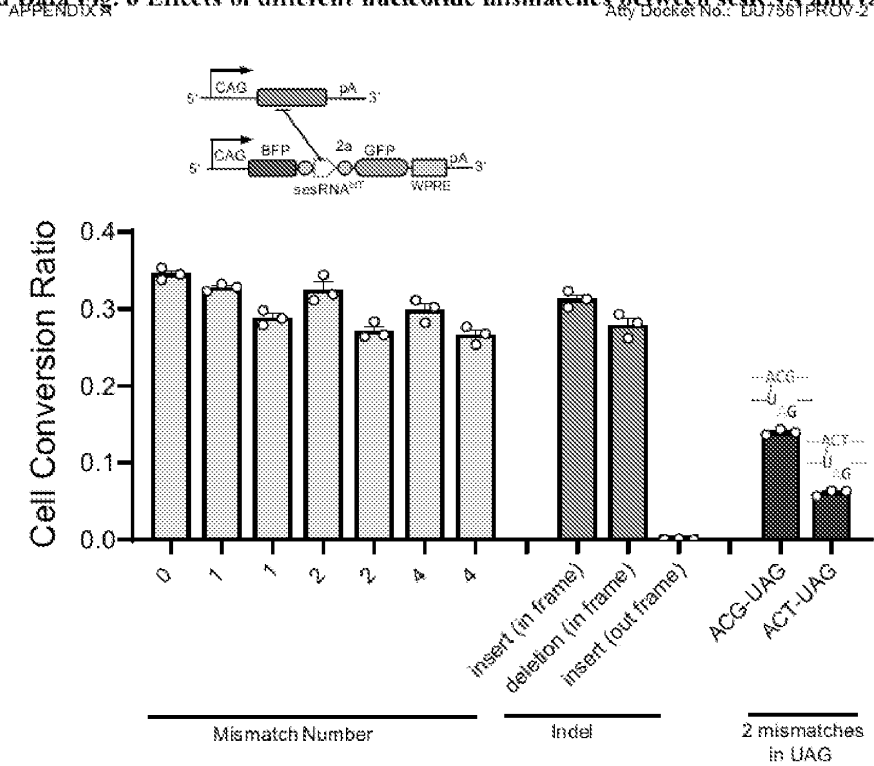


Extended Data Fig. 5 CellREADR functions in multiple human and mouse cell lines
APPENDIX A

Atty Docket No.: DU7561PROV-2



Extended Data Fig. 6 Effects of different nucleotide mismatches between sesRNA and target RNA



Extended Data Fig. 7 CellREADR mediated RNA sensing and effector translation
accumulate with time

APPENDIX A

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