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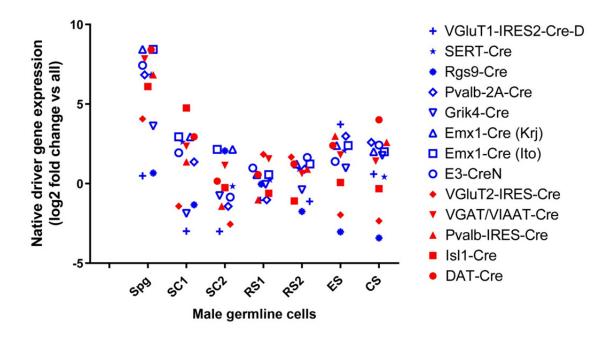
## **Supplemental Information**

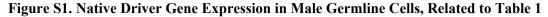
## **Optimizing Nervous System-Specific Gene**

## **Targeting with Cre Driver Lines: Prevalence**

## of Germline Recombination and Influencing Factors

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Relative expression levels based on scRNA-seq are shown during male germline maturation for each native gene at the knock-in locus for the corresponding Cre driver line (e.g. VGluT1 transcripts for VGluT1-IRES2-Cre-D). Cre driver lines with blue symbols showed paternal germline recombination at all target loci tested; Cre driver lines with red symbols showed no paternal germline recombination at any loci tested. The germline maturation stages are: Spg, spermatogonia; SC, spermatocytes; RS, rounds spermatids; ES, elongating speramtids; CS, condensing spermatids. All knock-in Cre driver lines were included for which data was available on both paternal germline recombination and transcript level. For full names of these Cre driver lines, see Table 1. scRNA-seq data are from Lukassen et al. (2018a, 2018b).