**Glutamate Receptors and Regulatory Proteins**

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| **Gene Knockout/ Overexpression** | **Background** | **Operant** | **2BC** | **4BC** | **DID** | **SHAC** | **References** |
| Glutamate receptor 3(*Gria3*) | B6N | —  | —↓ ADE, day 1 |  |  |  | Sanchis-Segura et al., 2006 [110] |
| Glutamate receptor 1(*Gria1*) | B6N |  | —— ADE— post-stress |  |  |  | Cowen et al., 2003 [121] |
| Metabotropic glutamate receptor 2, mGluR2 (*Grm2*) | CD1 |  | ↑ intake |  |  |  | Zhou et al., 2013 [271] |
| mGluR4 (*Grm4*) | CD1 × 129/SvJ |  | — males/females |  |  |  | Blednov et al., 2004 [89] |
| mGluR5 (*Grm5*) | B6 × 129/SvJ |  | — males/females | ↓ females | — (2 h, 1B; females) ↓ (3 h, 2BC; females) | — (30 min; females) | Blednov and Harris, 2008 [175] |
|  | B6 |  | ↓ |  |  |  | Bird et al., 2008 [176] |
| Glutamate receptor ionotropic, NMDA 2A (*Grin2a*) | B6 |  | — |  |  |  | Boyce-Rustay and Holmes, 2006 [130] |
| Homer protein homolog 2 (*Homer2*) | Not specified |  | ↓ |  |  |  | Szumlinski et al., 2003 [62] |
|  *Homer2*  | B6 × 129Xi/SvJ |  | ↓ 12%,males/females |  |  |  | Szumlinski et al., 2005 [135] |
|  | B6 × 129Xi/SvJ |  |  |  | — (2 h) |  | Lum et al., 2014 [311] |
| *Homer2b*\* | B6 | ↑ (21 min) |  |  |  |  | Szumlinski et al., 2008 [164] |
| Period circadian protein homolog 1, mPER1(*Per1Brdm1*) | 129SvEvBrd/ B6-Tyrc-Brd | —  | —— ADE |  |  |  | Zghoul et al., 2007 [144] |
| mPER2 (*Per2Brdm1*) | 129SvEvBrd/ B6-Tyrc-Brd | ↑  | ↑ 8-16%↓ after acamprosate |  |  |  | Spanagel et al., 2005 [78] |
| Epidermal growth factor receptor kinase substrate 8 (*Eps8)*  | B6 |  | ↑ males/females |  |  |  | Offenhauser et al., 2006 [136] |
| Excitatory amino acid transporter 1, GLAST, EAAT1 (*Slc1a3*) | B6 |  | ↓ males/females |  |  |  | Karlsson et al., 2012 [261] |
| Neuronal pentraxin-2, NARP (*Nptx2*)  | 129Sv × B6 |  |  | ↓ intake, no escalation |  |  | Ary et al., 2012 [265] |
| NMDA receptor GluN2A subunit (*Grin2a*) | B6 |  | — pre-CIE↓ post-CIE |  |  |  | Jury et al., 2018 [365] |

–, ↓, ↑: no significant difference, decreased ethanol intake and/or preference, or increased ethanol intake and/or preference, respectively, in knockout/mutant mice (or mice overexpressing *Homer2*\*) *vs*. wildtype mice. Males were tested unless otherwise indicated. Ethanol intake in the two- and four-bottle choice (2BC, 4BC) tests was measured in continuous 24-h sessions. Drinking session times for the other tests are indicated in parenthesis. DID, drinking in the dark; SHAC, scheduled high alcohol consumption; 1B, one bottle; ADE, alcohol deprivation effect; CIE, chronic intermittent exposure to alcohol vapor. Recommended mouse protein and gene (in italics) names are from Uniprot. B6 refers to C57BL/6J mice.