**Hormones and Hormone Receptors**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gene Knockout, Mutation****or Overexpression\*** | **Background** | **Operant** | **2BC** | **DID** | **References** |
| Corticotropin-releasing factor/hormone, corticoliberin (*Crh*) | B6 × 129S |  | ↑ (23 h)↑ (2 h, limited access) |  | Olive et al., 2003 [120] |
|  | B6 |  |  | ↓ (2, 4 h;males/females) | Kaur et al., 2012 [247] |
| Corticotropin-releasing factor (CRF) receptor 1 (*Crhr1*) | B6 |  |  | ↓ (2, 4 h;males/females) | Kaur et al., 2012 [247] |
|  | B6 × 129SvJ | — (1 h)↓ (1h, ADE) |  |  | Chu et al., 2007 [155] |
|  | 129/Ola × CD1 |  | — ↑ post-stress |  | Sillaber et al., 2002 [38] |
|  | 129S2/Sv × B6 × (B6 × SJL), Crhr1NestinCre  |  | — ↓ post-stress↓ escalation post-dependence— ADE |  | Molander et al., 2012 [250] |
|  | 129 × 1/SvJ × CD1,Crhr1-/-  |  | — ↑ post-stress↑ escalation post-dependence— ADE |  | Molander et al., 2012 [250] |
|  | B6males/females |  | — 3-10%, ↓ 20%— (10%, 21 h non-stress/acute stress)↓ (10%, 21 h chronic stress) |  | Pastor et al., 2011 [253] |
|  | B6 |  |  | ↓ intake (2, 4 h;males/females)  | Giardino and Ryabinin, 2013 [287] |
|  CRF receptor 2 (*Crhr2*) | B6 |  |  | ↓ (2 h, day 1; males/females) | Kaur et al., 2012 [247] |
|  | B6 |  | — females | ↑ transient (30 min); — (2 h) males/females | Sharpe et al., 2005 [100] |
| CRF binding protein (*Crfbp*) | C57BL/6 × SV129 |  |  | ↑ males (4 h, 20%, on day 4 of access) | Haass-Koffler et al., 2016 [330] |
|  *Crhr1/Crhr2* double knockout | B6males/females |  | — (10%, 21 h non-stress/acute stress) |  | Pastor et al., 2011 [253] |
| Urocortin (*Ucn*) | B6males/females |  | ↓ (10%, 21 h chronic stress) | — (2, 4 h) | Kaur et al., 2012 [247] |
|  | B6 |  | ↓ preference |  | Giardino et al., 2011 [248] |
| Urocortin 3 ( | B6 |  | ↑ (6-20%) |  | Smith et al., 2015 [345] |
|  Angiotensinogen (*Agt*)  | not specified |  | ↓ |  | Maul et al., 2001 [60] |
|  Angiotensinogen\* | not specified |  | ↑ |  | Maul et al., 2001 [60] |
|  Type-1A angiotensin II receptor,AT1A (*Agtr1a*) | not specified  |  | ↓ sex not specified |  | Maul et al., 2005 [98] |
|  A1A\* | not specified |  | — |  | Moore et al., 2007 [152] |
|  Type-2 angiotensin II receptor,AT2 (*Agtr2*) | not specified  |  | — sex not specified |  | Maul et al., 2005 [98] |
|  |  |  |  |  |  |
| Cholecystokinin receptor type A, CCK-A (*Cckar*) | B6 |  | — preference |  | Miyasaka et al., 2005 [97] |
| Gastrin/cholecystokinin type B receptor, CCK-B (*Cckbr*) | B6 |  | — |  | Miyasaka et al., 2005 [97] |
|   | B6 |  | — males,↑ females |  | Abramov et al., 2006 [141] |
| Vasopressin V1a receptor (*Avpr1a*) | B6Cr Slc × 129/Sv,B6Cr Slc |  | ↑ males > females |  | Sanbe et al., 2008 [166] |
|  | B6 × 129/Sv-CP, females |  | — homozygous mutant— post-stress |  | Caldwell et al., 2006 [143] |
| Vasopressin V1b receptor (*Avpr1b*) | B6 × 129/SvJ, females |  | — — post-stress |  | Caldwell et al., 2006 [143] |
|  |  |  |  |  |  |
|  Adiponectin receptor protein 2(*Adipor2*)  | B6 |  |  | — (2 h)↓ (2 h) after CIE | Repunte-Canonigo et al., 2010a [210] |
|  Leptin (*Lep*), B6-LepobLeptin receptor (*Lepr*), B6-m Leprdb/J  | B6 |  | ↓ males/females↓ males/females |  | Blednov et al., 2004 [102] |
| Melanin-concentrating hormone receptor 1 (*Mchr1*) | B6 |  | ↑ males— females | — (1 h; males/females) | Duncan et al., 2007 [157] |
| Atrial natriuretic peptide receptor 1 (*Npr1*) | B6 × 129/SvJ |  | —↑ post-stress |  | Mutschler et al., 2010 [201] |

–, ↓, ↑: no significant difference, decreased ethanol intake and/or preference, or increased intake and/or preference, respectively, in mutant mice *vs*. wildtype/control mice. Male mice were tested unless indicated otherwise. Ethanol intake in the two-bottle choice (2BC) tests was measured in 24-h sessions unless indicated otherwise. Drinking session times for operant and drinking in the dark (DID) tests are indicated in parenthesis. Stress and alcohol dependence tend to increase ethanol intake in both control and knockout mice, and the arrows indicate if the drinking in knockout mice was lower or higher compared to control under these conditions (Molander et al., 2012); however, the knockout mice in Pastor et al. (2011) showed reduced intake following chronic stress, whereas wildtype mice showed increased intake. ADE, alcohol deprivation effect; CIE, chronic intermittent ethanol vapor. Recommended mouse protein and gene (in italics) names are from Uniprot. B6 refers to C57BL/6J mice.