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| **Key Resources Table** | | | | |
| **Reagent type (species) or resource** | **Designation** | **Source or reference** | **Identifiers** | **Additional information** |
| gene (*Drosophila melanogaster*) | Xrp1 |  | FLYBASE:FBgn0261113 |  |
| gene (*Drosophila melanogaster*) | Irbp18 |  | FLYBASE:FBgn0036126 |  |
| gene (*Drosophila melanogaster*) | dATF4/Crc |  | FLYBASE:FBgn0000370 |  |
| genetic reagent (*D. melanogaster*) | Xrp1m2-73 | (Lee et al., 2016) | FLYBASE:FBal0346068 | Bloomington Drosophila Stock Center #81270 |
| genetic reagent (*D. melanogaster*) | Xrp102515 | (Spradling et al., 1999) | FLYBASE: FBal0009448 | Bloomington Drosophila Stock Center #11569 |
| genetic reagent (*D. melanogaster*) | Xrp1attP flox | this study |  | See Figure 4A; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | Xrp1attP loxP | this study |  | See Figure 4A; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | Xrp1HA | this study |  | See Figure 4A; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | Xrp1DAT-HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | Xrp1DBR-HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-Xrp1 | (Tsurui-Nishimura et al., 2013) | FLYBASE:FBal0284387 |  |
| genetic reagent (*D. melanogaster*) | UAS-Xrp1HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-Xrp1DAT-HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-Xrp1DBR-HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-Xrp1DLZ-HA | this study |  | See Figure 8C; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-  Xrp11-546 | this study |  | See Materials and Methods; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-Irbp18 | this study |  | See Materials and Methods; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | UAS-hDDIT3 | this study |  | See Materials and Methods; Strain maintained in Dr. Nicholas Baker’s lab. |
| genetic reagent (*D. melanogaster*) | Irbp1805006 | (Francis et al., 2016) | FLYBASE: FBal0185260 | Exelisis Drosophila Collection  #f05006 |
| genetic reagent (*D. melanogaster*) | UAS-p35 | (Neufeld et al., 1998) | FLYBASE:FBti0012595 | Bloomington Drosophila Stock Center #5073 |
| genetic reagent (*D. melanogaster*) | UAS-diap1 | FLYBASE:[FBrf0173262](http://flybase.org/reports/FBrf0173262) | FLYBASE:FBti0038641 | Bloomington Drosophila Stock Center  #6657 |
| genetic reagent (*D. melanogaster*) | UAS-yki | (Huang et al., 2005) | FLYBASE:FBal0191232 |  |
| genetic reagent (*D. melanogaster*) | RhebAV4  (UAS-Rheb) | (Patel et al., 2003) | FLYBASE:FBal0141561 | Bloomington Drosophila Stock Center  #9690 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAXrp1 | (Ni et al., 2011) | FLYBASE: FBti0144696 | Bloomington Drosophila Stock Center  #34521 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAirbp18 | (Ni et al., 2011) | FLYBASE: FBti0140125 | Bloomington Drosophila Stock Center  #33652 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAw | (Ni et al., 2011) | FLYBASE:FBtp0064645 | Bloomington Drosophila Stock Center  #33623 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAcrc | (Dietzl et al., 2007) | FLYBASE:FBst0457929 | Vienna Drosophila Resource Center #v2934 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAcrc | (Dietzl et al., 2007) | FLYBASE:FBst0457935 | Vienna Drosophila Resource Center #v2935 |
| genetic reagent (*D. melanogaster*) | Df(3L)H99 | (Abbott and Lengyel, 1991) | FLYBASE:FBab0022359 | Bloomington Drosophila Stock Center  #1576 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAdronc | (Dietzl et al., 2007) | FLYBASE:FBti0118486 | Vienna Drosophila Resource Center #v100424 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAStrica | (Dietzl et al., 2007) | FLYBASE:FBst0454607 | Vienna Drosophila Resource Center #v22594 |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAdark | (Ni et al., 2011) | FLYBASE:FBal0257547 |  |
| genetic reagent (*D. melanogaster*) | UAS-dsRNAdredd | (Ni et al., 2011) | FLYBASE:FBst0457259 | Vienna Drosophila Resource Center #v28041 |
| genetic reagent (*D. melanogaster*) | arm-LacZ | (Vincent et al., 1994) | FLYBASE:FBal0040819 |  |
| genetic reagent (*D. melanogaster*) | Ubi-GFP | (Davis et al., 1995) | FLYBASE:FBal0047085 |  |
| genetic reagent (*D. melanogaster*) | Df(1)su(s)R194 | (Duffy et al., 1996) | FLYBASE:FBab0024817 | Deletes *RpL36* |
| genetic reagent (*D. melanogaster*) | P[RpL36+ w+] | (Tyler et al., 2007) | FLYBASE: FBal0193398 |  |
| genetic reagent (*D. melanogaster*) | M(2)56F  (mutating RpS18) | Laboratory of Y. Hiromi | FLYBASE:FBal0011916 |  |
| genetic reagent (*D. melanogaster*) | hs-FLP | (Struhl and Basler, 1993) | FLYBASE:FBtp0001101 |  |
| genetic reagent (*D. melanogaster*) | hs-Cre | (Siegal and Hartl, 1996) | FLYBASE:FBti0012692 | Bloomington Drosophila Stock Center  #851 |
| genetic reagent (*D. melanogaster*) | hs-I-SceI | FLYBASE:[FBrf0157298](http://flybase.org/reports/FBrf0157298) | FLYBASE:FBti0026981 | Bloomington Drosophila Stock Center  #25679 |
| genetic reagent (*D. melanogaster*) | ey-FLP | (Newsome et al., 2000) | FLYBASE:FBal0098303 |  |
| genetic reagent (*D. melanogaster*) | M{vas-int.Dm}  ZH-2A | (Bischof et al., 2007) | FLYBASE:FBti0099694 | Bloomington Drosophila Stock Center  #40161 |
| genetic reagent (*D. melanogaster*) | Ubi-gal4 | (Baena-Lopez et al., 2013) | FLYBASE:FBtp0094799 |  |
| genetic reagent (*D. melanogaster*) | tubP-GAL4 | (Lee and Luo, 1999) | FLYBASE:FBal0097158 |  |
| genetic reagent (*D. melanogaster*) | GMR-gal4 | (Freeman, 1996) | FLYBASE:FBtp0001315 |  |
| genetic reagent (*D. melanogaster*) | UAS-mCD8::  GFP | (Lee and Luo, 1999) | FLYBASE:FBal0097215 | Bloomington Drosophila Stock Center  #5137 |
| genetic reagent (*D. melanogaster*) | tubP-GAL80 | (Lee and Luo, 1999) | FLYBASE:FBal0097120 | Bloomington Drosophila Stock Center  #5135, 5191 |
| genetic reagent (*D. melanogaster*) | P{GAL4-Act5C(FRT.CD2).P}S | (Pignoni and Zipursky, 1997) | FLYBASE:FBti0012408 | Bloomington Drosophila Stock Center  #51308 |
| genetic reagent (*D. melanogaster*) | P{neoFRT}42D | (Xu and Rubin, 1993) | FLYBASE:FBti0141188 | Bloomington Drosophila Stock Center  #1802 |
| genetic reagent (*D. melanogaster*) | P{neoFRT}80B | (Xu and Rubin, 1993) | FLYBASE:FBti0002073 | Bloomington Drosophila Stock Center  #1988 |
| genetic reagent (*D. melanogaster*) | P{neoFRT}82B | (Xu and Rubin, 1993) | FLYBASE:FBti0002074 | Bloomington Drosophila Stock Center #2050, 2051 |
| genetic reagent (*D. melanogaster*) | P{neoFRT}82B | (Xu and Rubin, 1993) | FLYBASE:FBti0002074 | Bloomington Drosophila Stock Center #2050, 2051 |
| genetic reagent (*D. melanogaster*) | w[\*]; P{ry[+t7.2]=Act5C(FRT.polyA)lacZ.nls1}2, P{w[+mC]=Ubi-p63E(FRT.STOP)Stinger}9F6/CyO; P{w[+mC]=GAL4-Act5C(FRT.CD2).P}S, P{w[+mC]=UAS-His-RFP}3/TM3, Sb[1] | (Worley et al., 2013) | FLYBASE: FBst0051308 | Bloomington Drosophila Stock Center #51308 |
| Antibody | polyclonalRabbit anti-XRP1(short) | (Francis et al., 2016) |  | 1:200 dilution |
| Antibody | polyclonalRabbit anti-IRBP18 | (Francis et al., 2016) |  | 1:100 dilution |
| Antibody | Mouse anti-HA  Tag monoclonal | Cell Signalling Technology | Cat #2367 | 1:100 dilution |
| Antibody | Mouse anti-beta galactosidase (mAb40-1a) monoclonal | DSHB | RRID: [AB\_2314509](http://antibodyregistry.org/AB_2314509" \t "_blank) | 1:100 dilution |
| Antibody | Rabbit anti-active-Dcp1 polyclonal | Cell Signalling Technology | Cat #9578 | 1:50 dilution |
| Antibody | [Goat anti-Mouse IgG, Alexa Fluor 488](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat #  A-11001 | 1:200 dilution |
| Antibody | [Goat anti-Rabbit IgG, Alexa Fluor 488](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat # A-11008 | 1:200 dilution |
| Antibody | [Goat anti-Mouse IgG, Alexa Fluor 568](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat #  A-11004 | 1:200 dilution |
| Antibody | [Goat anti-Rabbit IgG, Alexa Fluor 568](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat #  A-11011 | 1:200 dilution |
| Antibody | [Goat anti-Mouse IgG, Alexa Fluor 647](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat #  A-21235 | 1:200 dilution |
| Antibody | [Goat anti-Rabbit IgG, Alexa Fluor 647](https://www.thermofisher.com/antibody/product/A32723)  polyclonal | Thermo Fischer Scientific | Cat #  A-21244 | 1:200 dilution |
| recombinant DNA reagent reagent | pUAST vector | (Brand and Perrimon, 1993) | FLYBASE:FBmc0000383 | Drosophila Genomics Resource Center  #1000 |
| recombinant DNA reagent | pUAST-irbp18 | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST-hDDIT3 | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST-Xrp1HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST-Xrp1DAT-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST-Xrp1DBS-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST- Xrp1DLZ-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pUAST- Xrp11-546 | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pTVCherry  vector | (Baena-Lopez et al., 2013) |  |  |
| recombinant DNA reagent | pTV-Xrp1 | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | RIVFRT MCS FRT MCS3  vector | (Baena-Lopez et al., 2013) |  |  |
| recombinant DNA reagent | pRIVW | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pRIVW- Xrp1HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pRIVW- Xrp1DAT-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pRIVW- Xrp1DBS-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |
| recombinant DNA reagent | pRIVW- Xrp1DLZ-HA | this study |  | See Materials and Methods; Dr. Nicholas Baker’s lab. |

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