BRC Strain Name	Strain Name (Nomenclature)	Allele Synonyms	Allele type	Description	Developer	Reference
Xist ^{1loxGFP} mice	B6.Cg-*Xist* ^{tm2Sado}	*Xist* ^{1loxGFP}, *Xist* ^{GFP}, *Xist* ^{1lox}	Targeted (Reporter)	*Xist* (X-inactive specific transcript) gene was disrupted by replacing part of exon 1 with an IRES-EGFP cassette. Heterozygous mutant females with the mutated allele of paternal origin were embryonically lethal by non-random and abnormal X-inactivation. The *Xist* targeting was conducted by using normal R1 ES cells. This strain were generated by backcrossing of heterozygous females with maternal mutant allele to C57BL/6J male.	Developed by Dr. Sado, National Institute of Genetics (2004).	Sado, T., Hoki, Y., and Sasaki, H. 2005. *Tsix* silences *Xist* through modification of chromatin structure. *Dev Cell* 9: 159-165.
Tsix splicing-deficient mice	B6.Cg-*Tsix* ^{tm1Sado}	*Tsix* ^{deltaSA}	Targeted (knock-out)	The function of the *Tsix* gene, an antisense of the *Xist* gene which is essential for X-inactivation, was disrupted by targeting the splicing acceptor site for exon 4 of *Tsix*. Female embryos carrying mutated TsixdeltaSA allele derived from the father are embryonically lethal. The mutated *Tsix* ^{deltaSA} allele can be transmitted through heterozygous females of *Tsix* $^{+}$ / *Tsix* ^{deltaSA} genotype.	Developed by Dr. Sado, National Institute of Genetics (2006).	Sado, T., Hoki, Y., and Sasaki, H. 2006. *Tsix* defective in splicing is competent to establish *Xist* silencing. *Development* 133: 4925-4931.
Xist/Tsix double KO mouse	B6.Cg-*Xist* ^{tm1Sado} *Tsix* ^{tm1Enl}	*Xist* ^{1lox} *Tsix* $^{AA2delta1.7}$	Targeted (Reporter)	The double knockout mice carrying *Xist* ^{tm1Sado} and *Tsix* ^{tm1Enl} alleles. The *Xist* gene was disrupted by replacing exon 1 with an IRES-EGFP cassette so that the EGFP reporter is expressed under the control of endogenous promoter. The targeting was conducted by using mutated J1 ES cells with deficient *Tsix* ^{tm1Enl} allele. Female embryos carrying mutated *Xist* ^{tm1Sado} allele derived from the father are embryonically lethal. The mutated *Xist* ^{tm1Sado} allele can be transmitted through heterozygous females of *Xist* $^{+}$ /*Xist* ^{tm1Sado} genotype.	Developed by Dr. Sado, National Institute of Genetics (2005).	Sado, T., Hoki, Y., and Sasaki, H. 2005. *Tsix* silences *Xist* through modification of chromatin structure. *Dev Cell* 9: 159-165.
B6.Cg-*Tsix/Xist* ^{tm3Sado}	B6.Cg-*Tsix/Xist* ^{tm3Sado}	*Tsix* ^{pA}	Targeted (knock-out)	A multiple polyadenylation sequence flanked by splice donor and acceptor sites was inserted into exon 4 of *Tsix* in its orientation. The insertion site is also within exon 1 of *Xist* on the other strand. This genetic modification disrupts the *Tsix* transcript affecting the promoter region of the *Xist* gene. The absence of transcript expression from Xist and *Tsix* was confirmed by RT-PCR. The mutated *Tsix/Xist* ^{tm3Sado} allele can be transmitted through heterozygous females of *Tsix/Xist* ^{tm3Sado} genotype. Germ line, cre-mediated recombination was used to remove the neo cassette.	Developed by Drs. Ohhata and Sado, National Institute of Genetics (2006).	Ohhata, T., Hoki, Y., Sasaki, H., and Sado, T. 2008. Crucial role of antisense transcription across the *Xist* promoter in *Tsix*-mediated *Xist* chromatin modification. *Development* 135: 227-235.
B6.Cg-*Xist* ^{tm4Sado}	B6.Cg-*Xist* ^{tm4Sado}	*Xist* ^{IVS19}, *Xist* ^{IVS}	Targeted (knock-out)	The second intron of human gamma globin gene (IVS) with puromycine resistance gene was inserted into exon 4 of *Tsix* in its orientation. The insertion site corresponds to exon 1 of *Xist* on the other strand. This additional intron disrupts the function of the *Xist* gene, but dose not interfere with elongation of the *Tsix* transcript across the promoter region of the *Xist* gene. This strain is used as control for the *Tsix* ^{pA}. Germ line, cre-mediated recombination was used to remove the neo cassette.	Developed by Drs. Ohhata and Sado, National Institute of Genetics (2006).	Ohhata, T., Hoki, Y., Sasaki, H., and Sado, T. 2008. Crucial role of antisense transcription across the *Xist* promoter in *Tsix*-mediated *Xist* chromatin modification. *Development* 135: 227-235.
B6.Cg-*Xist* ^{tm5Sado}	B6.Cg-*Xist* ^{tm5Sado}	*Xist* ^{deltaA}	Targeted (knock-out)	A proximal conserved A-repeat in the *Xist* gene was deleted by targeting to elucidate its function for X-inactivation in mice. The portion of exon 1 encoding the A-repeat was replaced with *HSV-tk* and *PGK-neo* cassette. Females heterozygous for *Xist* ^{delatA2lox} were crossed with CAG-cre transgenic males to derive mice carrying *Xist* ^{delataA}.	Developed by Dr. Sado, National Institute of Genetics (2007).	Hoki, Y., Kimura, N., Kanbayashi, M., Amakawa, Y., Ohhata, T., Sasaki, H., and Sado, T. 2009. A proximal conserved repeat in the *Xist* gene is essential as a genomic element for X-inactivation in mouse. *Development* 136: 139-146.