Overview

Also Known As: ERα KO

This *Esr1* mutant strain is a functional knock out of ERα. Female mice homozygous for this mutation are infertile, exhibit cystic ovaries that lack corpora lutea and hypoplastic uteri that are unresponsive to estrogen. Homozygous males show reduced testis weight associated with diminished sperm count. These mice may be suitable for use in studies related to estrogen signaling, estrous cycle, obesity, metabolic syndrome and hormonal regulation of a variety of organ systems.

Please note: Mice carrying this *Esr1<sup>tm1Ksk</sup>* allele (Stock No. 004744), express a low level of a truncated form of ERα, the result of alternate splicing of the transcript. In contrast, mice carrying the *Esr1<sup>tm4.2Ksk</sup>* allele (Stock No. 026176) have no tissue responses to
Donating Investigator
Kenneth Korach, LRDT, NIEHS, NIH

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tr>
<td>Esr1tm1Ksk</td>
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Esr1 Allele Type: Targeted (Null/Knockout)
Gene Symbol: Esr1
Gene Name: estrogen receptor 1 (alpha)

RESEARCH APPLICATIONS
Reproductive Biology Research
Internal/Organ Research
Developmental Biology Research
Neurobiology Research

BASE PRICE
Starting at: $2,854.50 Domestic price Cryo Recovery

The targeted Esr1 gene encodes a ligand-activated transcription factor and nuclear estradiol hormone receptor. In the ERKO line (Stock #004744) multiple transcript variants may form due to alternative cryptic splicing of the endogenous mouse Esr1 gene. These mice carry an insertional disruption mutation of the Esr1 gene in which exon 2 has been deleted and a series of stop codons have been inserted. Two truncated mutant transcripts and a truncated protein (approximately 61kDa in size) having a deleted N-terminus are detected in uterine tissue from homozygous female mice by RT-PCR and Western blot analysis.

At birth, mice homozygous for the targeted allele are viable and normal in size and appearance. Female homozygous mice are
infertile, exhibit cystic ovaries that lack corpora lutea and have hypoplastic uteri that are unresponsive to estrogen. Homozygous males are infertile, low normal testis weight as adults and diminished sperm count (10% of normal. Homozygous females have more than 4-fold higher level of serum estradiol and elevated androgen levels compared to wildtype controls, indicative of estrogen insensitivity. There is approximately 3% of the Estradiol binding in uterine tissue from homozygotes compared to levels observed in wildtype controls; no estradiol binding is detected in other tissues (brain, kidney, and liver) from homozygotes. Female neuroendocrine estrogen negative feedback is disrupted with highly elevated LH, normal FSH levels but no prolactin.

Please note: Mice carrying this $Esr1^{tm1Ksk}$ allele (Stock No. 004744), express a low level of a truncated form of ERα, the result of alternate splicing of the transcript. In contrast, mice carrying the $Esr1^{tm4.2Ksk}$ allele (Stock No. 026176) have no tissue responses to estrogen and no estrogen receptor alpha activity.

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**Development**

**Control Suggestions**

**Selected References**

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**Genetics**

$Esr1^{tm1Ksk}$

**Disease/Phenotype**

**Disease Terms**

**Research Areas By Genotype**

**Mammalian Phenotype Terms by Genotype**

**References**

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**Technical Support**

Chat offline

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**Genotyping Protocols**

Standard PCR: $Esr1^{tm1Ksk}$

Genotyping resources and troubleshooting

**Breeding Considerations**

When maintaining a live colony, heterozygous mice may be bred to wildtype siblings, or to C57BL/6J inbred mice (Stock No. 000664). Homozygous females are infertile. The fertility of homozygous males is greatly reduced, but not abolished. The expected coat color is black.

Additional Breeding and Husbandry Support
Citation

When using the ERα KO mouse strain in a publication, please cite the originating article(s) and include JAX stock #004744 in your Materials and Methods section.

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

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<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or Wild-type for Esr1&lt;tm1Ksk&gt;</td>
<td>$2,854.50</td>
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</tbody>
</table>

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryorecovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

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<tr>
<th>PRODUCT</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tr>
<td>Frozen Mouse Embryo</td>
<td>B6.129P2-Esr1&lt;tm1Ksk&gt;/J Frozen Embryos</td>
<td>$2595.00</td>
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Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

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