Overview

Both exons (exons 1 and 2) of Hotair long noncoding RNA (IncRNA) have been excised in this knock-out strain. Approximately 78% of homozygous mice exhibit homeotic transformation of the spine and skeletal malformation of metacarpal-carpal bones.

Donating Investigator

Howard Chang, Stanford University
GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotair^Im1.1Hyc</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Hotair</td>
<td>HOX transcript antisense RNA (non-protein coding)</td>
</tr>
</tbody>
</table>

RESEARCH APPLICATIONS

- Internal/Organ Research
- Cancer Research
- Developmental Biology Research

BASE PRICE

Starting at:

$2,595.00 Domestic price Cryo Recovery

Details

Detailed Description

Hotair (HOX transcript antisense RNA (non-protein coding)), transcribed from the mouse Hoxc gene, is a long noncoding RNA (lncRNA) that acts as a regulator of gene expression. In humans, HOATIR silences HOXD genes, a function that is believed to contribute to cell positional identity. Overexpression of the human gene in several types of human cancers has been linked to metastasis and cancer progression.

Both exons 1 and 2 of mouse Hotair have been excised to create a knock-out allele resulting in derepression of hundreds of genes (including Hoxd genes and several imprinted genes). Increased expression and anterior expansion of Hoxd10 and Hoxd11 domains is associated with the homeotic transformation of the spine and skeletal malformation of metacarpal-carpal bones.

Approximately 58% of homozygous knock-out mice are reported to have five lumbar vertebrae. Microscale computed tomography reveals that the sacral 1 (S1) vertebrae in knock-out mice still have the lateral processes typical of L6 vertebrae, indicative of an L6 to S1 transformation.
A majority of homozygotes (56% versus 9% wildtype) have abnormalities in the metacarpal and carpal bones (including fusions and missing bony elements). The spine and wrist abnormalities do not necessarily co-occur in individual animals; hence, up to 78% of knock-out mice are said to exhibit one or more of these abnormalities.

Homozygous knock-out mice are reported to also exhibit a subtle but fully penetrant transformation of the caudal 4 vertebrae.

Genotyping Protocols
MELT: Hotair<sup>tm1.1HyC</sup> Alternate1
Genotyping resources and troubleshooting

Breeding Considerations
Homozygotes are viable and fertile, but show skeletal phenotypes.
Additional Breeding and Husbandry Support

Mating System
Heterozygote x Heterozygote
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.

<table>
<thead>
<tr>
<th>Cryorecovery - Domestic Pricing</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous for Hotair&lt;tm1.1Hyc&gt;</td>
<td>$2,595.00</td>
</tr>
</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

| Frozen Mouse Embryo | $2,595.00 per straw or vial |

Payment Terms and Conditions

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.

The Jackson Laboratory’s Genotype Promise

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. Therefore, we cannot guarantee a strain’s phenotype will meet all expectations. To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project.
Terms Of Use

General Terms and Conditions

QUESTIONS ABOUT TERMS OF USE

Additional Use Restrictions Apply
Use of MICE by companies or for-profit entities requires a license prior to shipping.

Licensing Information
Phone: 207-288-6470
Email: TechTran@jax.org

JAX® Mice, Products & Services Conditions of Use

“MICE” means mouse strains, their progeny derived by inbreeding or crossbreeding, unmodified derivatives from mouse strains or their progeny supplied by The Jackson Laboratory (‘JACKSON’). “PRODUCT(S)” means biological materials supplied by JACKSON, and their derivatives. “SERVICES” means projects conducted by JACKSON for other parties that may include but are not limited to the use of MICE or PRODUCTS. “RECIPIENT” means each recipient of MICE, PRODUCTS, or SERVICES provided by JACKSON including each institution, its employees and other researchers under its control. MICE or PRODUCTS shall not be: (i) used for any purpose other than internal research, (ii) sold or otherwise provided to any third party for any use, or (iii) provided to any agent or other third party to provide breeding or other services. Acceptance of MICE, PRODUCTS or SERVICES from JACKSON shall be deemed as agreement by RECIPIENT to these conditions, and departure from these conditions requires JACKSON’s prior written authorization.

No Warranty
MICE, PRODUCTS AND SERVICES ARE PROVIDED “AS IS”. JACKSON EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS, IMPLIED, OR STATUTORY, WITH RESPECT TO MICE, PRODUCTS OR SERVICES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF NON-INFRINGEMENT OF ANY PATENT, TRADEMARK, OR OTHER INTELLECTUAL PROPERTY RIGHTS.

Credit for PRODUCTS or SERVICES
In case of dissatisfaction for a valid reason and claimed in writing by a purchaser within ninety (90) days of receipt of, PRODUCTS or SERVICES, JACKSON will, at its option, provide credit or replacement for the PRODUCT received or the SERVICES provided; JACKSON makes no other representations and this shall be the exclusive remedy of the purchaser. Please note specific policy for live mice.

Animal Care and Use for SERVICES
Consistent with the requirement for a written understanding regarding animal care and use, the JACKSON Animal Care and Use Committee will review the animal care and use protocol(s) associated with any SERVICES to be performed at JACKSON, and JACKSON shall have ultimate responsibility and authority for the care of animals while on site or in JACKSON custody.

No Liability
In no event shall JACKSON, its trustees, directors, officers, employees, and affiliates be liable for any causes of action or damages, including any direct, indirect, special, or consequential damages, arising out of the provision of MICE, PRODUCTS, or SERVICES, including economic damage or injury to property and lost profits, and including any damage arising from acts or negligence on the part of JACKSON, its agents or employees. Unless prohibited by law, in purchasing or receiving MICE, PRODUCTS, or SERVICES from JACKSON, purchaser or recipient, or any party claiming by or through them, expressly releases and discharges JACKSON from all such causes of action or damages, and further agrees to defend and indemnify JACKSON from any costs or damages arising out of any third party claims.

MICE, PRODUCTS or SERVICES are to be used in a safe manner and in accordance with all applicable governmental rules and regulations.

The foregoing represents the General Terms and Conditions applicable to JACKSON’s MICE, PRODUCTS or SERVICES. In addition, special terms and conditions of sale of certain MICE, PRODUCTS, or SERVICES may be set forth separately in JACKSON web pages, catalogs, price lists, contracts, and/or other documents, and these special terms and conditions shall also govern the sale of these MICE, PRODUCTS and SERVICES by JACKSON, and by its licensees and distributors.

Acceptance of delivery of MICE, PRODUCTS or SERVICES shall be deemed agreement to these terms and conditions. No purchase
order or other document transmitted by purchaser or recipient that may modify the terms and conditions hereof, shall be in any way 
binding on JACKSON, and instead the terms and conditions set forth herein, including any special terms and conditions set forth 
separately, shall govern the sale of MICE, PRODUCTS or SERVICES by JACKSON.

### Related Strains

<table>
<thead>
<tr>
<th>All</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>By Allele</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>By Gene</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>By Collection</th>
</tr>
</thead>
</table>

All Related Strains