

Dear all,

Full ORF Gateway-compatible clones and KH transcript models are now accessible from the Aniseed website, in addition to their representation in the Aniseed Genome browser.

The following instructions will help you to find information concerning Gateway-compatible clones and KH transcript models. Don't hesitate to send us feedback or comments, especially if you find some bugs or inconsistencies.

### Information available in Aniseed:

*Full ORF gateway-compatible clones (Rothbacher et al., in preparation)*

- Library clone name (e.g. cima810896 ; cien56376)
- JGI/Gilchrist clone name (e.g. CBWU10896 ; XABT56376)
- Plate position (e.g. VES58\_F02)
- Genbank entry (e.g. FF864681)
- Sequence
- Library/Origin
- Vector

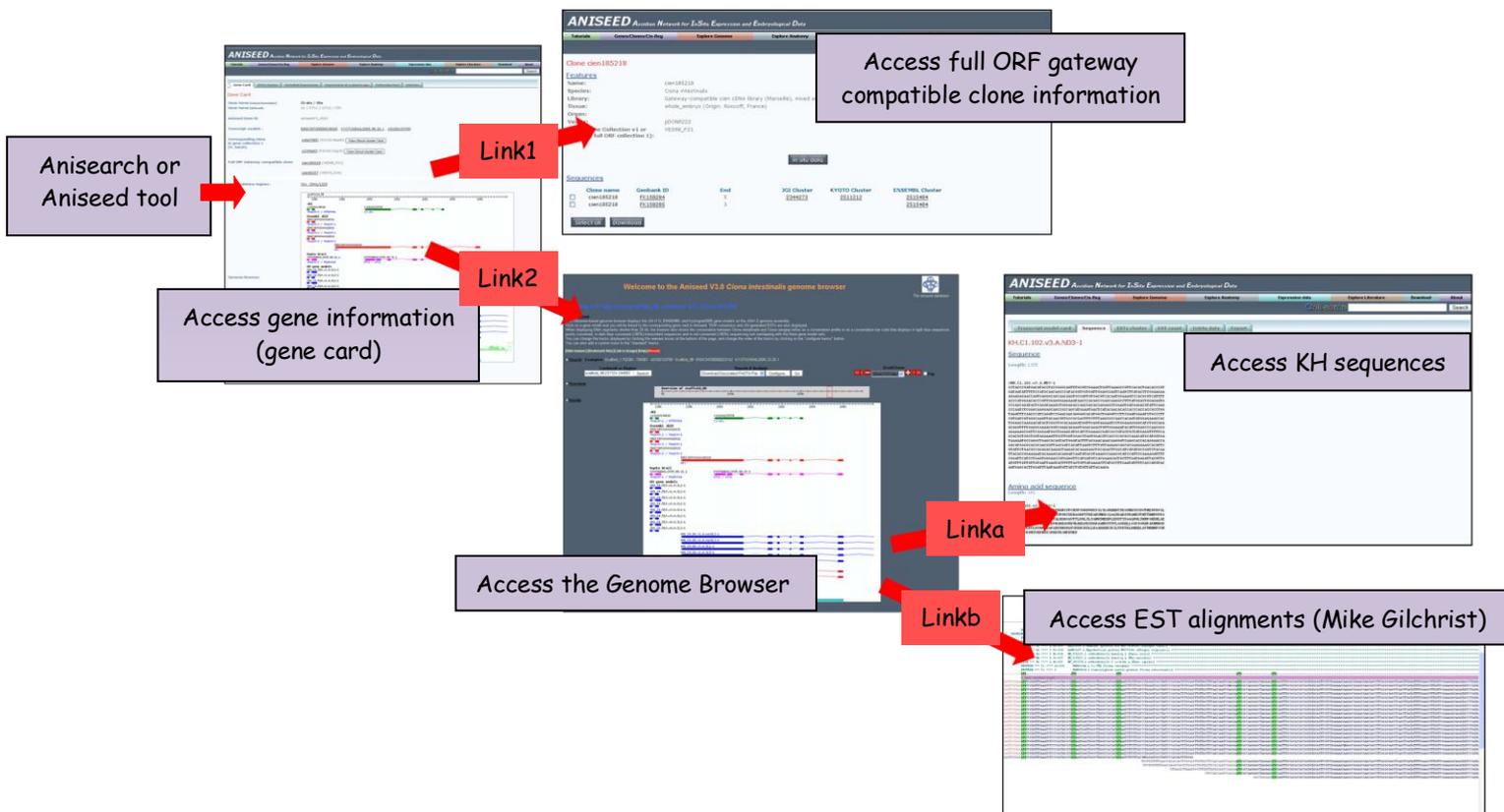
*KH transcript models (Satou et al., 2008)*

- DNA sequence
- Amino acid sequence

### How to access this information?

Access this information in Aniseed (<http://crfb.univ-mrs.fr/aniseed/>)

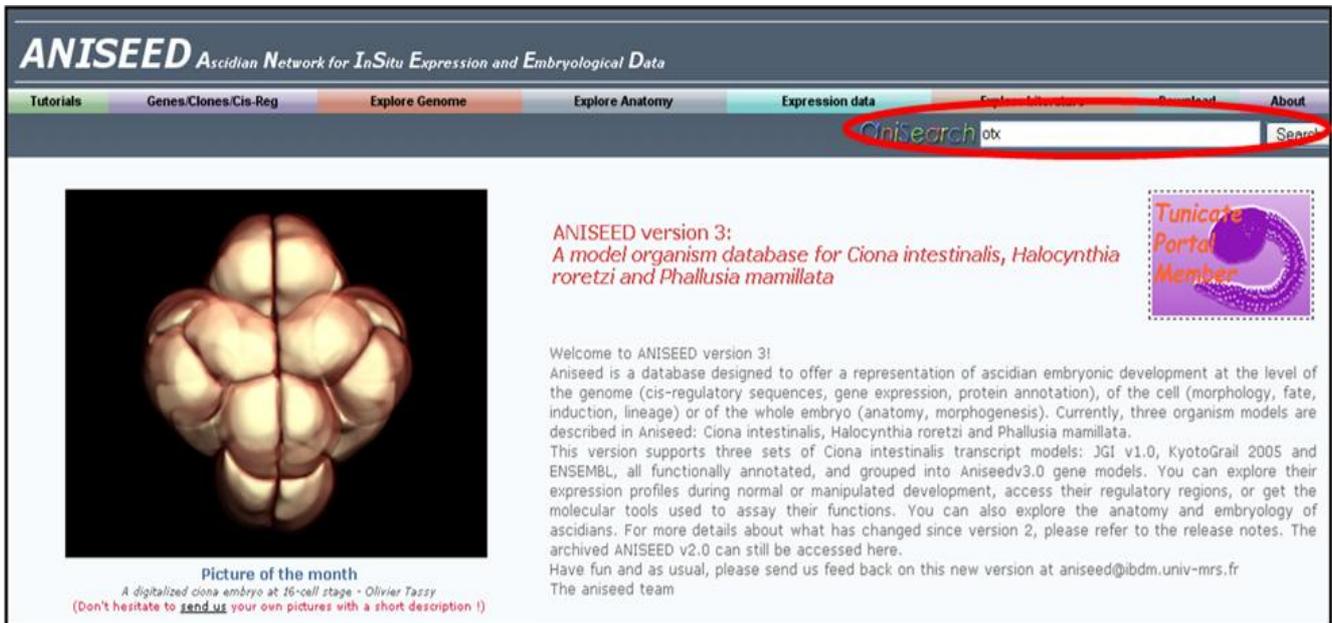
Schematic overview:



## Access gene information (gene card)

You can access gene features (gene card) using AniSearch or using the menu "Genes/Clones/Cis-reg menu".

- Using AniSearch:



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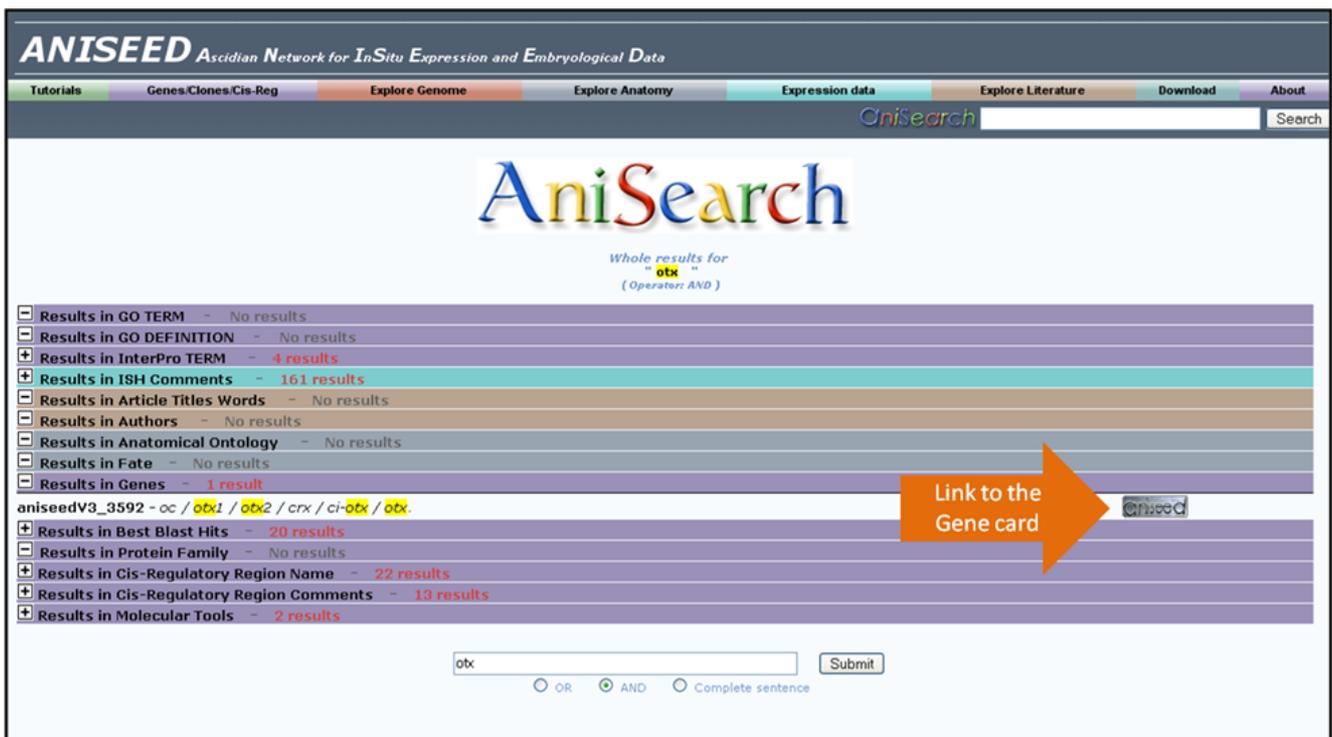
AniSearch otx Search

**Picture of the month**  
A digitalized ciona embryo at 16-cell stage - Olivier Tassy  
(Don't hesitate to send us your own pictures with a short description !)

**ANISEED version 3:**  
*A model organism database for Ciona intestinalis, Halocynthia roretzi and Phallusia mamillata*

>Welcome to ANISEED version 3!  
Aniseed is a database designed to offer a representation of ascidian embryonic development at the level of the genome (cis-regulatory sequences, gene expression, protein annotation), of the cell (morphology, fate, induction, lineage) or of the whole embryo (anatomy, morphogenesis). Currently, three organism models are described in Aniseed: Ciona intestinalis, Halocynthia roretzi and Phallusia mamillata.  
This version supports three sets of Ciona intestinalis transcript models: JGI v1.0, KyotoGrail 2005 and ENSEMBL, all functionally annotated, and grouped into Aniseedv3.0 gene models. You can explore their expression profiles during normal or manipulated development, access their regulatory regions, or get the molecular tools used to assay their functions. You can also explore the anatomy and embryology of ascidians. For more details about what has changed since version 2, please refer to the release notes. The archived ANISEED v2.0 can still be accessed here.  
Have fun and as usual, please send us feedback on this new version at aniseed@ibdm.univ-mrs.fr  
The aniseed team

Tunicate Portal Member



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AniSearch Search

**AniSearch**

Whole results for "otx"  
(Operator: AND)

- Results in GO TERM - No results
- Results in GO DEFINITION - No results
- Results in InterPro TERM - 4 results
- Results in ISH Comments - 161 results
- Results in Article Titles Words - No results
- Results in Authors - No results
- Results in Anatomical Ontology - No results
- Results in Fate - No results
- Results in Genes - 1 result
- aniseedV3\_3592 - oc / otx1 / otx2 / crx / ci-otx / otx.
- Results in Best Blast Hits - 20 results
- Results in Protein Family - No results
- Results in Cis-Regulatory Region Name - 22 results
- Results in Cis-Regulatory Region Comments - 13 results
- Results in Molecular Tools - 2 results

otx Submit

OR AND Complete sentence

Link to the Gene card

- Using the Genes/Clones/Cis-reg menu, select the "Find a gene" link:

The screenshot shows the ANISEED website interface. The top navigation bar includes 'Tutorials', 'Genes/Clones/Cis-Reg', 'Explore Genome', 'Explore Anatomy', 'Expression data', 'Explore Literature', 'Download', and 'About'. The 'Genes/Clones/Cis-Reg' menu is open, and the 'Find a Gene' option is circled in red. Other options in the menu include 'Find Gene models by their gene ontology annotations', 'Find Gene models by their interpro annotations', 'Find Molecular Tools', 'Clones', 'Find a cDNA clone by its identifier', 'Find a clone sequence by its identifier', and 'Cis-Regulatory Regions', 'Find Cis-regulatory regions'. The main content area features a 'Picture of the month' section with a digitalized ciona embryo and a 'Tunicate Portal Member' badge. A search bar labeled 'CniSearch' is visible in the top right.

- o Choose an "Ascidian species" from the menu by clicking on the arrows and scrolling down.
- o Enter the biological name (otx) or the identifier of the gene model (ENSEMBL, JGI v1.0, KYOTOGRAIL2005, KH) you are looking for and click on the "Submit" button to access the gene card.

The screenshot shows the 'Find a Gene' search form on the ANISEED website. The 'Species' dropdown menu is set to 'Ciona intestinalis'. The 'Name' input field contains 'otx'. Below the input field, a list of identifiers is displayed: '(aniseedV3\_3592, Otx, nodal, ci0100133709, KYOTOGRAIL2005.98.32.1)'. An orange arrow points to the 'Submit' button, with the text 'Link to the Gene card' written next to it. The search bar at the top right is labeled 'CniSearch'.

The gene card gives access to functional annotation of the gene (name, ortholog in mouse, human and Drosophila, interpro domains and Gene Ontology classification), corresponding transcript models, clones and regulatory regions and to an overview of the Genome browser. Thus, you can access from the gene card to corresponding full ORF gateway-compatible clone information and to the Genome browser:

# Otx Gene card

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ChnSearch  Search

Gene Card   ESTs cluster   Detailed Expression   Expression at a glance *New*   Molecular tool   Articles

### Gene Card

Gene Name (Manual Annotation): **Ci-otx / Otx**  
Gene Name (Inferred): oc / OTX1 / OTX2 / CRX

Aniseed Gene id: aniseedV3\_3592

Transcript models : ENSICNT00000018028 , KYOTOGRAIL2005.98.32.1 , ci0100133709

Corresponding clone in gene collection 1 (N. Satoh)  
citb07007 (R1CIGC46a06) [View Ghost cluster Card](#)  
cicl45e03 (R1CIGC13g19) [View Ghost cluster Card](#)

Full ORF Gateway-compatible clone  
cien185218 (VES98\_F21) **Link 1: Access to clone features**  
cien60357 (VES79\_D19)

Cis-regulatory regions: Otx -3541/1333

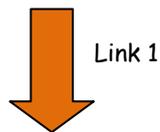
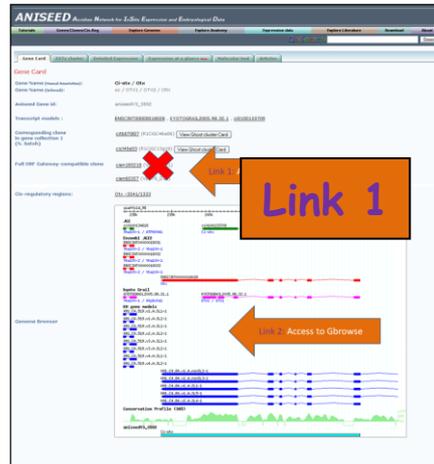
Genome Browser

The genome browser displays scaffold\_98 with coordinates from 238k to 244k. It features several tracks: JGI (c10100134618, Vha100-1 / ATP6v0a1), Ensembl JGI2 (ENSCINT00000018031, Vha100-2 / Vha100-1; ENSICNT00000018032, Vha100-2 / Vha100-1; ENSICNT00000018033, Vha100-2 / Vha100-1), Kyoto Grail (KYOTOGRAIL2005.98.31.1, Vha100-1 / ATP6v0a1; KYOTOGRAIL2005.98.32.1, OTX2 / OTX1), KH gene models (multiple variants like KHI\_C4.519.v1.A.SL1-1, KHI\_C4.519.v1.A.SL2-1, etc.), and a Conservation Profile (36%) track. The Otx gene model is highlighted in red, and the ci-otx transcript model is shown in green at the bottom.

## Access full ORF gateway compatible clone information from the gene card (link 1)

"Link 1" will give you access to clone features: the corresponding page displays some features like the library where the clone came from, the vector used, the plate position in the Unigene collection. You will also find the different clone sequences corresponding to the clone and the cluster that the clone belongs to from the three assemblies.

Otx Gene card



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ChnSearch  Search

**Clone cien185218**

**Features**

Name: cien185218 **← Library clone name**

Species: Ciona intestinalis

Library: Gateway-compatible cien cDNA library (Marseille), mixed embryonic whole embryo (cien, Doreff, France) **← Library / Origin** (157985 clones)

Tissue: whole\_embryo

Organ: whole\_embryo

Vector: pDONR222 **← Vector and plate position**

Plate (Gene Collection v1 or Gateway full ORF collection 1): VES98\_F21

**In situ data** **← Link to in situ data**

**Sequences**

Clone name	Genbank ID	JGI Cluster	KYOTO Cluster	ENSEMBL Cluster
<input type="checkbox"/> cien185218	<a href="#">FK158284</a>	<a href="#">2344273</a>	<a href="#">2511212</a>	<a href="#">2515484</a>
<input type="checkbox"/> cien185218	<a href="#">FK158285</a>			<a href="#">2515484</a>

**← Genbank ID linked to clone features** **← Link to JGI, KYOTO, ENSEMBL cluster**

Select all Download

If you click on the Genbank ID:

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Chisearch  Search

**FK158284 cien185218** ← Library clone name

**Features**

Name:  
Species:  
Description: Clona intestinalis  
gij192949931|gb|FK158284.1|FK158284.X|ABT185218.b1 Gateway intestinalis mixed embryonic stages (Egg to Neurula) Clona intestinalis sequence

Sequence type: cDNA  
Orientation: 5

Genbank ID: **FK158284** ← Link to JGI, KYOTO, ENSEMBL clustering  
Cluster JGI: **2344273**  
Cluster Kyoto: **2511212**  
Cluster ENSEMBL: **2515484**

Clone name: **cien185218**

Library: Gateway-compatible cien cDNA library (Marseille), pDONR222  
Tissue: whole\_embryo (Origin: Roscoff, France) ← Library / Origin  
Organ: Egg to Neurula

Vector: pDONR222  
Corresponding gene: **aniseedV3\_3592** ( oc / OTX1 / OTX2 / CRX / Ci-otx / Otx ) ← Link to the gene card

Corresponding JGI transcript: **ci0100133709**  
Corresponding KYOTOGRAIL transcript: **KYOTOGRAIL2005.98.32.1**  
Corresponding ENSEMBL transcript: **ENSCINT00000018028**

**In situ data** ← Link to in situ data

**Sequence**

Length: 673

```

ACCTGAT AATTTT GAAAAAT AGAGGTTT ATTAAATTT OTAAAAAT AAGTT GATTGATTACAA
TCTACAAGC AAGAAATTT GAAAAAT GAAAAAT CAAGTT GAAAAAC AAGACATTTT GAACG
AAAAACAAATTC AATTC AAGTACACG GGTCAATTCCT AACATGTCGATTTT GAATCT
CCCCTAAGGATG SAANTGGACTGGCTT AGGCCAGAT ATSAANTCTTCTCACCTACAG
TCACCTATCCCGGCACCTGCGAGCTTGTACTCCAAAGSANTCCAAGGAATGCACCAAGG
AGCTAAGAATGCAATTTGGGGCACCCAGTATACAGTTGTCCTAGAAAAACAAAGGCGA
GAGCGAACGACCTTCAACAGGCTCAACTCGATATTTTGGAGCTTTATTCCGAAAGACAA
GATATCCGAGATCTTATGAGAGAAAGGTTGCTTAAAGATCAACTCCGAGATCCCG
AGTACAGGTGTGGTTCAAAATCGACGACAAAGTGTGCGCAACAGTGCACAAACACAG
CAAAACAAAAATCCGGCTAGGTGGCAGTCTATCTAATTC AAGCAGT AGTACTGGTAGCA
GCAGCAGCGAAGCGCCAGCAGCACCAACAGCAACAAAT AATAGCTCATCAAGTTCAANTAA
GA

```

← Sequence

[Display entry in raw text format](#)

This page gives you an access point to clone features including a brief description (including the JGI/Gilchrist clone name), the type of sequence (EST or cDNA) and corresponding orientation (5' or 3' end). You can also directly link to Genbank information by clicking on the Genbank ID. You retrieve the library used, the vector used, the tissue or the organ that it comes from. There are also the gene model corresponding to the clone sequence and when available, a link to the in situ data. Finally, you can find the sequence. All the information of this page can be exported in raw text format by clicking on "Display entry in raw text format" at the bottom.

PS: you can also access clone features using the Genes/Clones/Cis-reg link in the Aniseed menu. Note that if you use the "find a cDNA clone by its identifier" link, you have to enter the exact clone name in the corresponding field (e.g. cien177890) and if you use the "find a clone sequence" link, you have to enter the Genbank ID (e.g. FK050052) :

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Find a Gene  
Find Gene models by their gene ontology annotations  
Find Gene models by their interpro annotations  
Find Molecular Tools  
**Find a cDNA clone by its identifier**  
Find a cDNA clone by its Genbank ID

ANISEED version 3:  
Ascidian organism database for *Ciona intestinalis*, *Halocynthia roretzi* and *Phallusia mamillata*

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Clone search

Species: *Ciona intestinalis*

Name: cien185218 (002E11, cic0106 ...)

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You can either click on the transcript name of interest to get the associated transcript card, or tick right of the transcript ID name to constitute a list of transcripts of interest that can be further restricted using the "Refine" button that enables sequential requests.

Clone name: cien185218

Matching records

Species: *Ciona intestinalis*

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Clone cien185218

**Features**

Name: cien185218  
Species: *Ciona intestinalis*  
Library: Gateway-compatible cien cDNA library (Marseille), mixed embryonic stages (Egg to Neurula) (157985 clones)  
Tissue: whole\_embryo (Origin: Roscoff, France)  
Organ:  
Vector: pDONR222  
Plate (Gene Collection v1 or Gateway full ORF collection 1): VES98\_F21

**In situ data**

**Sequences**

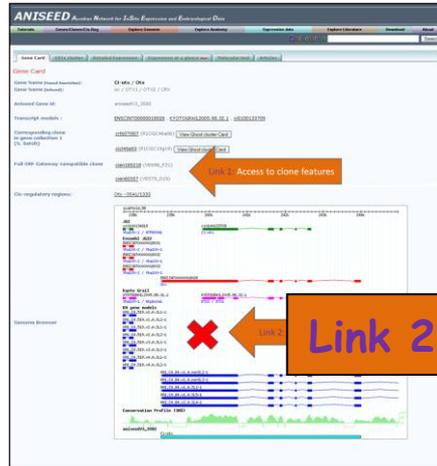
Clone name	Genbank ID	End	JGI Cluster	KYOTO Cluster	ENSEMBL Cluster
<input type="checkbox"/> cien185218	<a href="#">FK158284</a>	5	<a href="#">2344273</a>	<a href="#">2511212</a>	<a href="#">2515484</a>
<input type="checkbox"/> cien185218	<a href="#">FK158285</a>	3			<a href="#">2515484</a>

Select all Download

## Access the Genome Browser from the gene card (link 2)

"Link 2" will give you access to the Genome Browser: the corresponding page displays the JGI v1.0, ENSEMBL Kyotograil2005 and KH gene models on the JGIv1.0 genome assembly. Click on a gene model and you will be linked to the corresponding gene card in Aniseed (see "link a" in the following figures). Move down to the « tracks » section and tick the 'Full ORF Gateway clones (Mike Gilchrist)' in the « ESTs and cDNAs (and other Gene models) » section. Update the image to show the track on the browser and then you can visualize Full ORF gateway clones. Click on a clone and you will be linked to the EST alignments of Mike Gilchrist (see "link b" in the following figures).

Otx Gene card



Link 2

Overview of scaffold\_98

238k 239k 240k 241k 242k 243k 244k

JGI  
c10100134618  
Vha100-1 / ATP6V041

Ensembl JGI2  
ENSCINT00000018031  
Vha100-2 / Vha100-1  
ENSCINT00000018032  
Vha100-2 / Vha100-1  
ENSCINT00000018033  
Vha100-2 / Vha100-1  
ENSCINT00000018028  
Otx

Kyoto Grail  
KYOTOGRAIL2005\_98\_31.1  
Vha100-1 / ATP6V041  
KYOTOGRAIL2005\_98\_32.1  
OTX2 / OTX1

KH gene models  
KH\_C4\_519.v1.A.SL1-1  
KH\_C4\_519.v1.A.SL2-1  
KH\_C4\_519.v2.A.SL1-1  
KH\_C4\_519.v2.A.SL2-1  
KH\_C4\_519.v3.A.SL1-1  
KH\_C4\_519.v3.A.SL2-1  
KH\_C4\_519.v4.A.SL1-1  
KH\_C4\_519.v4.A.SL2-1  
KH\_C4\_84.v1.A.nonSL2-1  
KH\_C4\_84.v1.A.nonSL3-1  
KH\_C4\_84.v1.A.SL1-1  
KH\_C4\_84.v1.A.SL5-1  
KH\_C4\_84.v2.A.SL4-1

Full ORF Gateway clones (Mike Gilchrist)  
X98T110936.5 X98T185218.3 X98T185218.5  
X98T113011.5 X98T600357.3 X98T600357.5  
C8874500.5  
X98T137707.5

Link a: access to KH information

Link b: access to EST alignments (Mike Gilchrist)

Clear highlighting

Tracks Tracks

Comparative genomics All on All off  
C1 vfa C vs alignment

ESTs and cDNAs All on All off  
Full ORF Gateway clones (Mike Gilchrist)

Gene models All on All off  
Ensembl JGI2  
JGI

General All on All off  
Curated Regulatory regions  
DNA/GC Content

External Annotation Tracks All on All off  
file search\_results

Conservation Bar Code (50%)  
Conservation Profile (30%)  
Gateway-compatible Mature adult library (Satou lib, JGI sequenced)  
Gateway-compatible Mixed Cleavage to neurula stages library (Marseille lib, JGI sequenced)  
Tigr reads  
Gateway-compatible adult digestive gland library (Satou lib, NIG sequenced)  
Gateway-compatible Mature adult library (Satou lib, NIG sequenced)  
Gateway-compatible mixed embryonic to larval stages library (Satou lib, NIG sequenced)

KH gene models  
kyoto Grail

nucleosomes occupation plot (segal et al. 2006)  
nucleosomes start plot (segal et al. 2006)  
nucleosomes positioning signal(peckham et al. 2007)

Update Image

Configure tracks... Update Image

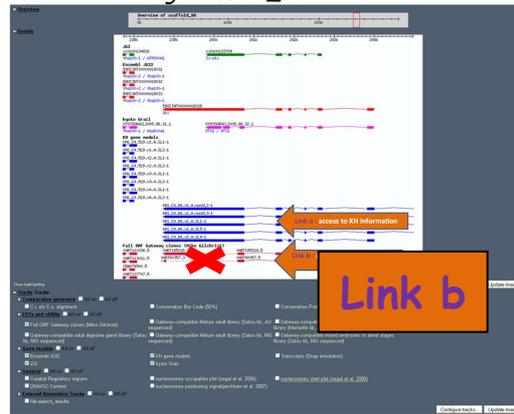
Gbrowse showing scaffold\_98, positions 237.724 to 244.993



# Access EST alignments from Gbrowse (link b)

"Link b" will give you access to the EST alignments of Mike Gilchrist.

Gbrowse showing scaffold\_98



Link b



Don't hesitate to ask us if you cannot place a request you would like on ANISEED.

Delphine Dauga, 20th january 2009  
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