

Chironomid DNA Barcode Database Search System

User Manual

National Institute for Environmental Studies

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1. Overview

Within the Chironomid DNA Barcode Database search system, you can view your search results of Chironomid Specimen records. Click on “Search” button after you type or select any condition including a scientific name, a subfamily, a genus, a subgenus, a species, an accession number (DDBJ), a sequence ID (BOLD), a locality, a country, a prefecture, and a municipality as necessary. You can download haplotype data in a FASTA format text file.

Database

Search Chironomid Specimens and DNA

See user manual [Click here](#)

Scientific name	Enter subfamily or genus or subgenus or species (e.g. Chironomus plumosus, Chironominae).
Subfamily	<input type="checkbox"/> Chironominae <input type="checkbox"/> Orthocladiinae <input type="checkbox"/> Tanyptodinae
Genus	<input type="text"/> Exact match ▾ e.g. Chironomus
Subgenus	<input type="text"/> e.g. Chironomus
Species	<input type="radio"/> Scientific name (e.g. Chironomus plumosus) <input type="radio"/> Japanese name (e.g. Ooyusurika) <input type="checkbox"/> Include synonyms and old scientific names
Accession number (DDBJ)	<input type="text"/>
Sequence ID (BOLD)	<input type="text"/>
Locality	<input type="text"/>
Country	<input type="checkbox"/> Japan <input type="checkbox"/> Tuvalu
Prefecture	<input type="button" value="Choose from a list"/>
Municipality	Prefecture: <input type="text"/> Municipality: <input type="text"/>



Database

[Home](#) > [Search top](#) > Search results

Search conditions

Scientific name (From subfamily to species): Chironomus

Results 108 records (1-20 records)

Number of records: 20 [50](#) [100](#) [200](#) 1/6

1 2 3 4 5 ▶ ▶

Specimen ID ▲▼	Species ▼▲	Locality ▼▲	Accession number (DDBJ) ▼▲	Haplotype ▼▲	Specimen Image
<input type="checkbox"/> D0001	<i>Chironomus plumosus</i>	Nebi, coast of Lake Kasumigaura	AB740254	CpluB	
<input type="checkbox"/> D0002	<i>Chironomus plumosus</i>	Nebi, coast of Lake Kasumigaura	AB740253	CpluA	
<input type="checkbox"/> D0016	<i>Chironomus plumosus</i>	Nebi, coast of Lake Kasumigaura	AB740253	CpluA	

2. Search tools

2.1 Overview of search tools

Keywords across multiple fields are combined using “AND”, while multiple keywords within a field are combined using “OR”. All data are returned if no search condition is applied. Click on “Reset” button to clear fields.

Search top

Database

Search Chironomid Specimens and DNA

See user manual [Click here](#)

Scientific name	<input type="text"/> Enter subfamily or genus or subgenus or species (e.g. Chironomus plumosus, Chironominae).
Subfamily	<input type="checkbox"/> Chironominae <input type="checkbox"/> Orthoclaadiinae <input type="checkbox"/> Tanypodinae
Genus	<input type="text" value="Chironomus"/> 1 Exact match ▾ e.g. Chironomus
Subgenus	<input type="text"/> e.g. Chironomus
Species	<input type="text"/> <input checked="" type="radio"/> Scientific name (e.g. Chironomus plumosus) <input type="radio"/> Japanese name (e.g. Ooyusurika) <input type="checkbox"/> Include synonyms and old scientific names
Accession number (DDBJ)	<input type="text" value="AB7"/> 2
Sequence ID (BOLD)	<input type="text"/>
Locality	<input type="text"/>
Country	<input checked="" type="checkbox"/> Japan <input checked="" type="checkbox"/> Tuvalu 3
Prefecture Municipality	Choose from a list Prefecture <input type="text"/> Municipality <input type="text"/>

Search conditions:

- “Chironomus” (Exact match) for a genus..... **1**
- AND**
- “AB7” included in an accession number (DDBJ)..... **2**
- AND**
- “Japan” **OR** “Tuvalu” for countries..... **3**

2.2 Search conditions: input/selection

Scientific name

Scientific name	<input type="text"/> Enter subfamily or genus or subgenus or species (e.g. Chironomus plumosus , Chironominae).
------------------------	--

Type a scientific name in textbox. Your input is searched in fields including a subfamily, a genus, a subgenus and a species. Results are returned if the input is contained in any field.

Subfamily

Subfamily	<input type="checkbox"/> Chironominae <input type="checkbox"/> Orthocladiinae <input type="checkbox"/> Tanypodinae
------------------	--

Tick a box of your choice of subfamilies (multiple selections allowed).

Genus

Genus	<input type="text"/> <input type="text" value="Exact match"/> ▼ e.g. Chironomus
--------------	--

Type a genus in textbox. Choose either “Exact match” or “Partial match” for matching criteria. “Exact match” requires a complete match of your input in a genus field, while “Partial match” requires that the input is contained in the genus field.

Subgenus

Subgenus	<input type="text"/> e.g. Chironomus
-----------------	---

Type a subgenus in textbox. Results are returned if the input is contained in a subgenus field.

Species

Species	<input type="text"/> <input checked="" type="radio"/> Scientific name (e.g. Chironomus plumosus) <input type="radio"/> Japanese name (e.g. Ooyusurika) <input type="checkbox"/> Include synonyms and old scientific names
----------------	--

Select “Scientific name” or “Japanese name” and type a species in textbox. A scientific name, a globally standardized name for organisms described in Latin, and a Japanese name, a standardized

name specifically used in Japan, are both required to be in Roman alphabet. Results are returned if the input is contained in a species field, when box “Include synonyms and old scientific names” is not checked. Tick the box to see whether the input is contained in either a species field or a synonym field.

Accession number (DDBJ)

Accession number (DDBJ)	<input style="width: 100%; height: 20px;" type="text"/>
--------------------------------	---

Type an accession number (DDBJ) in textbox. Results are returned if the input is contained in an accession number field.

Sequence ID (BOLD)

Sequence ID (BOLD)	<input style="width: 100%; height: 20px;" type="text"/>
---------------------------	---

Type a sequence ID (BOLD) in textbox. Results are returned if the input is contained in a sequence ID (BOLD) field.

Locality

Locality	<input style="width: 100%; height: 20px;" type="text"/>
-----------------	---

Type a locality in textbox. Results are returned if the input is contained in a locality field.

Country

Country	<input type="checkbox"/> Japan <input type="checkbox"/> Tuvalu
----------------	--

Tick a box of your choice of countries (multiple selections allowed).

Prefecture, Municipality

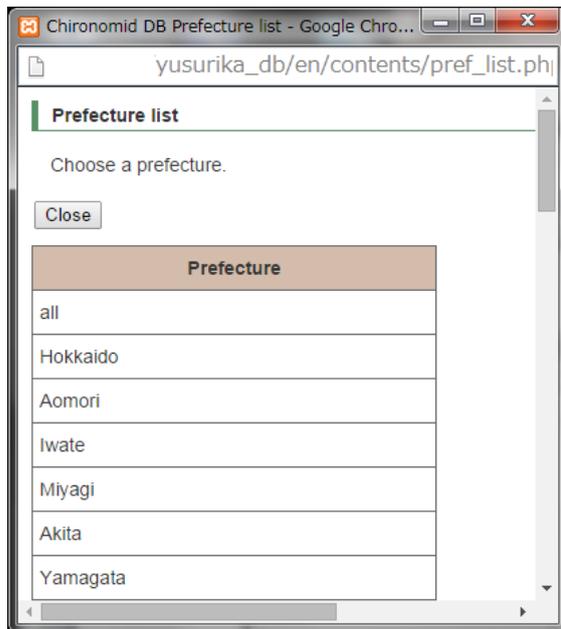
Prefecture Municipality	<input type="button" value="Choose from a list"/> Prefecture <input style="width: 100px;" type="text"/> Municipality <input style="width: 100px;" type="text"/>
------------------------------------	--

Click on “Choose from a list” button to select a prefecture and a municipality (see 2.3).

2.3 “Choose from a list” function

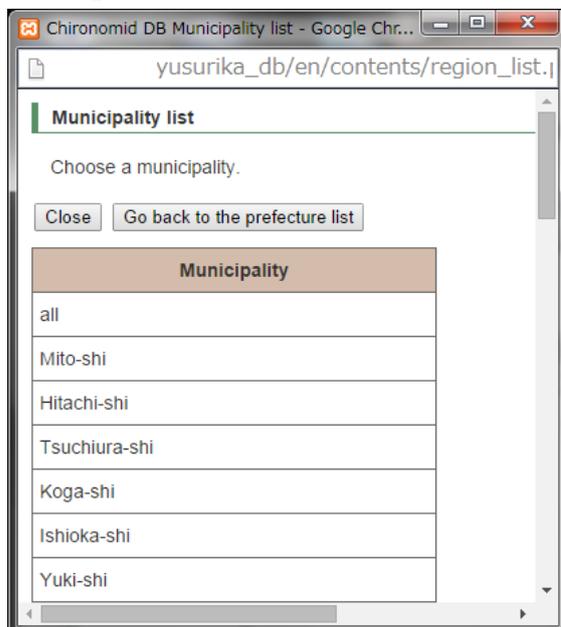
Use “Choose from a list” function to type a prefecture and a municipality. Once you click on it, a list of prefectures is shown in a separate small screen.

Prefecture list



Select a prefecture to proceed to a municipality list, which shows possible municipalities within the selected prefecture. The prefecture is displayed on main screen. If you select “all”, the prefecture list screen is closed and “all” are displayed on main screen. Click on “Close” button to close this screen manually.

Municipality list (When “Ibaraki” is selected in the prefecture list)



Select a municipality. The municipality that you select is displayed on main screen and the municipality list is closed at the same time (this is the same when selecting “all”). Click on “Go back to the prefecture list” button to go back to the prefecture list. Click on “Close” button to close this screen manually.

2.4 Run a search

Click on “Search” button to proceed to results.

3. View results

3.1 Results

Database

[Home](#) > [Search top](#) > Search results **1**

Search conditions

Scientific name (From subfamily to species): Chironomus Genus: Chironomus(Exact match) **2**
Species: Chironomus plumosus(Scientific name)(including synonyms and old scientific names)

Results 48 records (21-40 records)

Number of records: 20 [50](#) [100](#) [200](#) **3** 2/3

[Select all](#) [Deselect all](#) [Download](#) **4**

5	Specimen ID	Species	Locality	Accession number (DDBJ)	Haplotype	Specimen Image
6	<input type="checkbox"/> D0144	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740247	CnipnB	
	<input type="checkbox"/> D0145	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740248	CnipnC	
	<input type="checkbox"/> D0146	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740247	CnipnB	
	<input type="checkbox"/> D0147	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740248	CnipnC	
	<input type="checkbox"/> D0148	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740248	CnipnC	
	<input type="checkbox"/> D0149	<i>Chironomus nipponensis</i>	Lake Yunoko	AB740247	CnipnB	

1 Links

Click on links to go back to search top or Home.

2 Search conditions

Your search conditions are displayed in this area.

3 Number of records, page feed

You can choose the number of records displayed on the screen; options are 20, 50, 100 and 200.

Click on to go to the first page, to go to the previous page, to go to the next page and to go to the last page. Click on a page number link to go to the page you want to view.

4 Download DNA sequences

Click on “Select all” button to tick all the checkboxes and click on “Deselect all” button to deselect all the checkboxes. Click on “Download” button to download DNA sequence data in a FASTA format text file (see 3.2). Downloads are available on each page. Be aware that the operations as follow lead to unchecking of the boxes - navigating to other pages, sorting of results, and changing the number of records shown.

5 Sort the results

To sort the results, click on ▲ (ascending order) or ▼ (descending order) next to the data fields including a specimen ID, a species, a locality, an accession number (DDBJ), and a haplotype.

6 Results

Results are displayed as a list. Click on a specimen ID link to proceed to a specimen record details page (see 3.3). A specimen photo can be viewed in a new tab by clicking on the image.

3.2 Download a DNA sequence data file

Check the boxes of a specimen ID and click on “Download” button to download a DNA sequence data in a FASTA format.

FASTA format

A FASTA format is one of the data formats widely used for DNA sequence analysis to describe DNA sequences (including amino acid sequences). There are two parts in this format - “attributes” and “DNA sequences”.

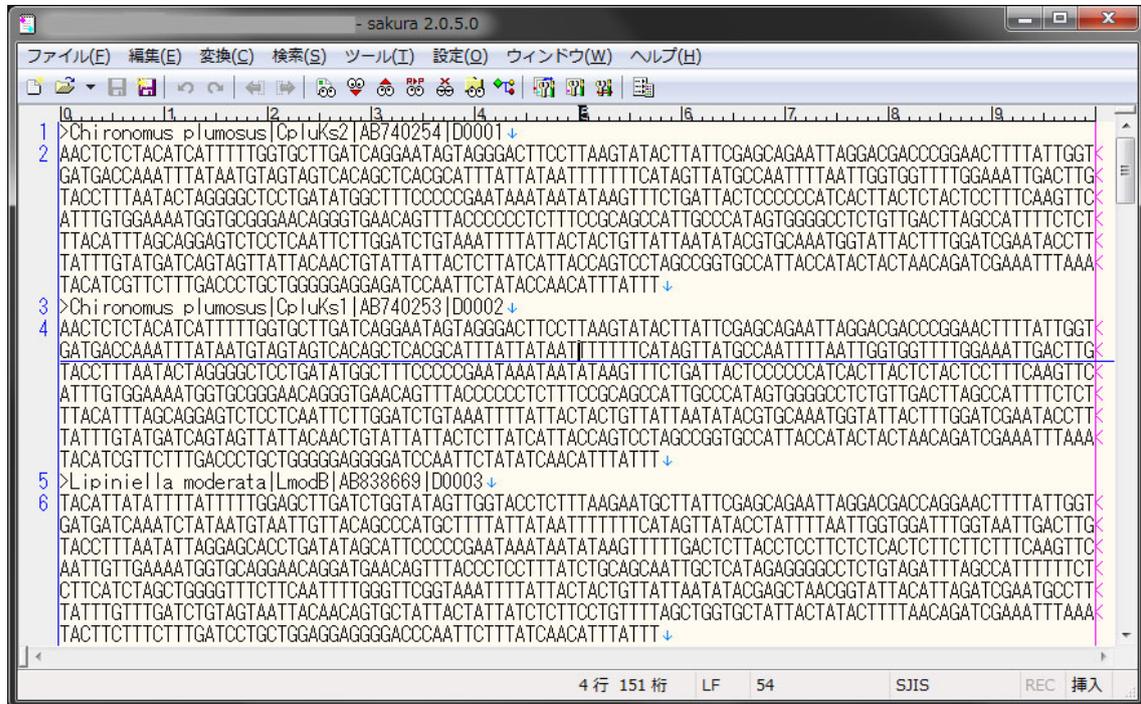
The first line starts with a “>” with attributes such as a scientific name, a haplotype and a specimen ID, followed by a line feed. Subsequently, DNA sequences are presented until next “>”.

Format applied in this database

```
>scientific name | haplotype | accession number (DDBJ) | specimen ID ↵  
DNA sequences
```

*Adjust the length of text as necessary for analysis such as sequence alignment and molecular phylogenetic analysis.

An example of a downloaded text file



The screenshot shows a text editor window titled "sakura 2.0.5.0" with a menu bar in Japanese (ファイル(E), 編集(E), 変換(C), 検索(S), ツール(I), 設定(O), ウィンドウ(W), ヘルプ(H)) and a toolbar. The main text area contains DNA sequence data for three species, each with a header line and a sequence block. The species are Chiromomus plumosus (two entries) and Lipiniella moderata. The sequences are displayed in a monospaced font with line numbers 1 through 6 on the left margin. The status bar at the bottom indicates "4行 151桁 LF 54 SJIS REC 挿入".

```
1 >Chiromomus plumosus [CpluKs2] AB740254 | D0001 ↓
2 AACTCTCATACATTTTTGGTGCCTGATCAGGAATAGTAGGGACTTCCTTAAGTATACTTATTCGAGCAGAATTAGGACGACCCGGAACCTTTATTGGT
  GATGACCAAATTTATAATGTAGTAGTCACAGCTCAGCATTATTATAATTTTTTCATAGTTATGCCAATTTAATTGGTGGTTTTGGAAATTGACTTG
  TACCTTTAATACTAGGGCTCCTGATATGGCTTCCCCCGAATAAATAATAAGTTTCTGATTACTCCCCCATCACTTACTCTACTCCTTTCAAGTTC
  ATTTGTGGAAAATGGTGGGGAACAGGGTGAACAGTTTACCCCCTCTTCCGCAGCCATTGCCATAGTGGGGCCTCTGTTGACTTAGCCATTTCTCT
  TTACATTTAGCAGGAGTCTCCTCAATTTCTGGATCTGTAATTTTATTACTACTGTTATTAATATACGTGCAAAATGGTATTACTTTGGATCGAATACCTT
  TATTTGTATGATCAGTAGTTATTACAACGTATTATTACTCTTATCATTACCAGTCTTAGCCGGTGCCATTACCATACTACTAACAGATCGAAATTTAAA
  TACATCGTTCTTTGACCCTGCTGGGGGAGGAGATCCAATTTCTATACCAACATTTATTT ↓
3 >Chiromomus plumosus [CpluKs1] AB740253 | D0002 ↓
4 AACTCTCATACATTTTTGGTGCCTGATCAGGAATAGTAGGGACTTCCTTAAGTATACTTATTCGAGCAGAATTAGGACGACCCGGAACCTTTATTGGT
  GATGACCAAATTTATAATGTAGTAGTCACAGCTCAGCATTATTATAATTTTTTCATAGTTATGCCAATTTAATTGGTGGTTTTGGAAATTGACTTG
  TACCTTTAATACTAGGGCTCCTGATATGGCTTCCCCCGAATAAATAATAAGTTTCTGATTACTCCCCCATCACTTACTCTACTCCTTTCAAGTTC
  ATTTGTGGAAAATGGTGGGGAACAGGGTGAACAGTTTACCCCCTCTTCCGCAGCCATTGCCATAGTGGGGCCTCTGTTGACTTAGCCATTTCTCT
  TTACATTTAGCAGGAGTCTCCTCAATTTCTGGATCTGTAATTTTATTACTACTGTTATTAATATACGTGCAAAATGGTATTACTTTGGATCGAATACCTT
  TATTTGTATGATCAGTAGTTATTACAACGTATTATTACTCTTATCATTACCAGTCTTAGCCGGTGCCATTACCATACTACTAACAGATCGAAATTTAAA
  TACATCGTTCTTTGACCCTGCTGGGGGAGGAGATCCAATTTCTATATCAACATTTATTT ↓
5 >Lipiniella moderata [LmodB] AB838669 | D0003 ↓
6 TACATTATATTTATTTTGGAGCTTGATCTGGTATAGTTGGTACCTCTTAAAGAATGCTTATTCGAGCAGAATTAGGACGACCCGGAACCTTTATTGGT
  GATGATCAAATCTATAATGTAAATGTTACAGCCATGCTTTATTATAATTTTTTCATAGTTATACCTATTTAATTGGTGGATTGGTAATTGACTTG
  TACCTTTAATATTAGGAGCACCTGATATAGCAATCCCCCGAATAAATAATAAGTTTTTGACTCTTACCTCCTCTCACTCTCTCTCTTTCAAGTTC
  AATTGTGAAAATGGTGCAGGAACAGGATGAACAGTTTACCCCCTTTATCTGCAGCAATTGCTCATAGAGGGCCTCTGTAGATTAGCCATTTTCT
  CTTCACTAGCTGGGGTTCTTCAATTTGGGTCCGGTAAATTTTATTACTACTGTTATTAATATACGAGCTAACGGTATTACATTAGATCGAATGCCTT
  TATTTGTTGATCTGTAGTAATTACAACAGTGTATTACTATTACTCTCTCTGTTTTAGCTGGTGTATTACTATACTTTAACAGATCGAAATTTAAA
  TACTTCTTCTTTGATCCTGCTGGAGGAGGGACCAATTTCTATATCAACATTTATTT ↓
```

3.3 Specimen record details

Database

[Home](#) > [Search top](#) > [Search results](#) > Specimen record details

Specimen record details

> **Specimen ID: D0251**

> **Taxonomic Data**

Family	Chironomidae	Subfamily	Chironominae
Tribe	Chironomini		
Genus	Chironomus	Subgenus	Chironomus
Species	Chironomus plumosus		
Japanese name	Ooyusurika		




License Holder:
Chironomid Group, NIES

> **Collection Data**

Locality	Odashin'ike Pond		
Collection date	2011/06/13	Collectors	R. Ueno, K. Takamura, Y. Oikawa
Identifier	R. Ueno		
Country	Japan		
Prefecture	Ibaraki	Latitude	36°09'10"
Municipality	Tsukubashi	Longitude	140°07'26"

> **Specimen Status**

Life stage: adult, male

> **DNA Data**

Gene: *COI*

Haplotype: CpluR

Accession number(DDBJ): AB740253 [GenBank](#)

Sequence ID(BOLD): JCDB144-15 [BOLD](#)

DNA sequence(FASTA format):

```

>Chironomus plumosus|CpluR|AB740253|D0251
AACTCTCTACATCATTTTGGTGCCTGATCAGGAATAGTAGGGACTTCCTTAAGTATACTTATTCGAGCAGAATTAGGACGACCGGAACTTTTATTGGTGA
TGACCAAAATTTATAATGTAGTAGTCACAGCTCAGCATTATTATAATTTTTTCATAGTTATGCCAAATTTAATTGGTGGTTTGGAAATTGACTTGTACC
TTTAATACTAGGGGCTCCTGATATGGCTTTCCCGGAATAAATAATAGTTTCTGATTACTCCCCCATCACTTACTCTACTCCTTTCAAGTTCAATTGT
GGAAATGGTGGGGAAACAGGGTGAACAGTTTACCCCTCTTCCGCAGCCATTGCCATAGTGGGGCCCTCTGTTGACTTAGCCATTTTCTCTTACATTT
AGCAGGAGTCTCCTCAATTTCTGGATCTGTAATTTTACTACTGTATTAAATACGTGCAAAATGGTATTACTTTGGATCGAATACCTTTATTTGTATG
ATCAGTAGTTATTACAACCTGATTATTACTCTTATCATTACCAGTCTAGCCGGTCCATTACCACTACTAACAGATCGAAATTTAAATACATCGTTCTT
TGACCTGCTGGGGAGGGATCCAATTTCTATATCAACATTTATTT
    
```

Taxonomic data, collection data and DNA data are shown on a specimen record details screen. Click on a species link to go to a species page (see 3.4), or click on a locality link to go to a locality page (see 3.5). Click on links at the top of the page to go back to different levels such as search results, search top or Home. Click on “GenBank” or “BOLD” to open a corresponding webpage of an external DNA database in a new tab.

3.4 Species

Database

[Home](#) > [Search top](#) > [Search results](#) > [Specimen record details](#) > Species

Species

Species: *Chironomus plumosus*

Japanese name: Ooyusurika

Family: Chironomidae

Subfamily: Chironominae

Tribe: Chironomini

Genus: *Chironomus*

Subgenus: *Chironomus*



License Holder: Chironomid Group, NIES

Synonyms	References	Remarks
<i>Tipula plumosa</i>	Latreille 1809	-

Taxonomic information including synonyms is shown on a species page. Click on links at the top of the page to go back to different levels such as specimen record details, search results, search top or Home.

3.5 Locality

Database

[Home](#) > [Search top](#) > [Search results](#) > [Specimen record details](#) > [Locality](#)

Locality

Locality: **Odashin'ike Pond**

Country: **Japan**

Prefecture: **Ibaraki**

Municipality: **Tsukuba-shi**

Address: **Oda**

Latitude: **36°09'10"**

Longitude: **140°07'26"**

Characteristics: **farm pond**



Geographic information and characteristics of a locality are shown on a locality page. Click on links at the top of the page to go back to different levels such as specimen record details, search results, search top or Home.

4. Others

4.1 Download DNA haplotypes (on search top)

Download

> DNA haplotype

Download a FASTA format text file of all haplotypes in the database.

Click on “Download” button on search top to download a list of haplotypes registered in this database. The file is formatted as follows (FASTA format).

```
>scientific name | haplotype | accession number (DDBJ)
DNA sequences
```

DNA haplotype

Haplotypes are distinguished and named if there is any difference in a single nucleotide in the DNA sequence. Same species with identical nucleotides are included in the same haplotype group, whereas haplotypes are divided into more than two groups in the same species if there is a nucleotide difference.

Example:

Specimen ID	Scientific name	Nucleotides	Haplotype
X 0001	<i>Cricotopus sylvestris</i>	...AATTGC...	CsyIA
X 0002	<i>Cricotopus sylvestris</i>	...AATTGC...	CsyIA
X 0003	<i>Cricotopus sylvestris</i>	...AATAGC...	CsyIB