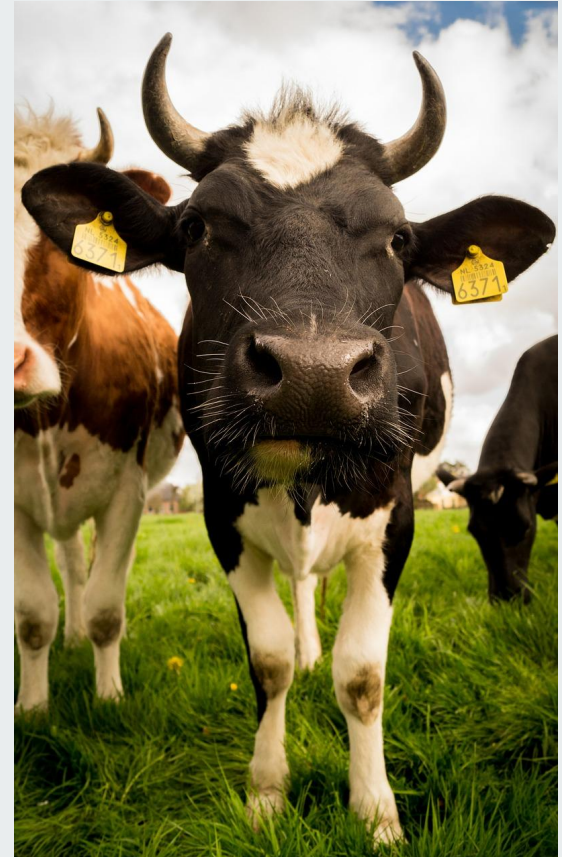




Animal QTL Database

By: Blair Hamilton and Corinne Wong





Outline

- **General information**
- **Scientific quality**
- **General utility**
- **Summary judgment**



Outline

- **General information**
- Scientific quality
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What kind of database is Animal QTL?

- Animal QTL is a Biological Database that contains trait maps for animals.
- This database is a secondary data source that provides "user/curator accounts for direct data submission, and supply users with a data summary link to facilitate the manuscript review process."
- Animal QTL is a manual and community curated database that allows users to create accounts in order to submit and review data.



Who or what maintains it?

- NAGRP: National Animal Genome Research Program



How is it funded?

- USDA NRSP-8 National Animal Genome Research Program
- Bioinformatics Coordination Project
- USDA-NRI
- USDA-NIFA Research Funds to the National Research Service Program



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How thorough is the data?

- Has substantial information
 - 1881 publications in their database
- All public data of trait mapping
- User/curator accounts allow people to receive direct data submissions.



Is it useful?

- Covers wide variety of livestock
 - Cattle, catfish, chickens, horses, pigs, rainbow trout, and sheep
- It's a useful tool.
 - Genetic mapping
 - How genes are inherited/acquired



Is it up to date?

- Provides current information
- Still useful today
- No other databases like it



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Does it link to other databases?

Ensembl

Monarch Project

NCBI Entrez GeneDB

Reuters Data Citation Index

UCSC



Is it convenient?

- Organized Data:
 - Titles to each Animal Subject
 - Title links to separate page:
 - Summary of current data on animal
 - Data downloads
 - Suggested search/browse tools

Animal QTLdb

The Animal Quantitative Trait Loci (QTL) Database (Animal QTLdb) strives to collect all publicly available trait mapping data, *i.e.* QTL (phenotype/expression, eQTL), candidate gene and association data (GWAS), and copy number variations (CNV) mapped to livestock animal genomes, in order to facilitate locating and comparing discoveries within and between species. New data and database tools are continually developed to align various trait mapping data to map-based genome features such as annotated genes.

Many scientific journals require or recommend that any original QTL/association data be deposited into a public database before a paper may be accepted for publication. We provide user/curator accounts for direct data submission, and supply users with a data summary link to facilitate the manuscript review process.



Cattle QTL

There are **99,652** QTLs from **799** publications curated into the database. Those QTLs represent **574** different traits (see **data summary** for details).



Catfish QTL NEW

There are **0** QTLs from **0** publications curated into the database. Those QTLs represent **0** different traits (see **data summary** for details).



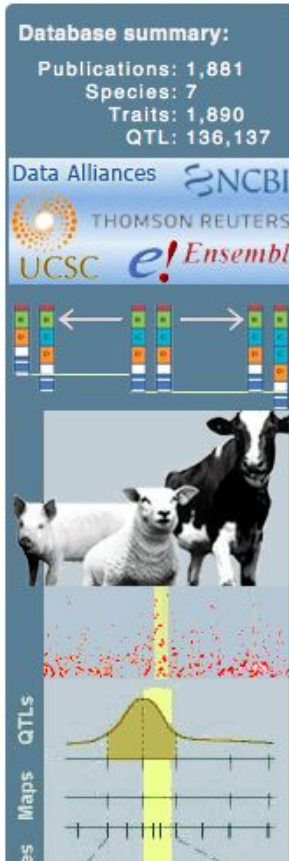
Chicken QTL NEW

There are **7,812** QTLs from **273** publications curated into the database. Those QTLs represent **380** different traits (see **data summary** for details).



Horse QTL

There are **1,278** QTLs from **74** publications curated into the database. Those QTLs represent **51** different traits (see **data summary** for details).





Is it convenient to download?

- Yes:
 - The file formats include:
 - On UMD_3.1 in GFF3 format
 - On UMD_3.1 in SAM format
 - On UMD_3.1 in BED format
 - On Btau_4.6 in GFF3 format
 - On Btau_4.6 in SAM format
 - On Btau_4.6 in BED format
 - This database included non-standard formats



How user friendly is it?

- Total database summary at the top of the page
- Titles are bolded per species
- Icon per category
- Contains video tutorials as well as a FAQs section
- Search option for each animal
 - For example, we selected Cattle and typed "hoof" in the search field and received multiple relevant results pertaining to traits of cattle.
 - Live Demo: <https://www.animalgenome.org/cgi-bin/QTLdb/BT/index>



Does it have access restrictions?

- No: freely available to anyone
- Even available on other database sites:
 - such as NCBI or Ensembl.



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Summary Judgment

- Would we recommend it?
 - Yes
 - User-friendly
 - Accessible
 - Thorough livestock species trait mapping
 - Is it a professional or hobby database?
 - Both
 - Hobby-Anyone can add
 - Professional-Funded;Nationally curated



Summary

- Animal QTL is an easy, useful biological database that is public
- Provides current and quality data about trait mapping of livestock
- Convenient and accessible



Acknowledgments

[Corinne Wong](#) and [Blair Hamilton](#) worked on this homework assignment together by meeting in person outside of class, as well as through text messaging.



References

- Animal QTL Database. (2017). Animal QTLdb. Retrieved September 28, 2017, from <https://www.animalgenome.org/cgi-bin/QTLdb/index>
- Hu, Z.-L., Park, C. A., Wu, X.-L., & Reecy, J. M. (2013). Animal QTLdb: an improved database tool for livestock animal QTL/association data dissemination in the post-genome era. *Nucleic Acids Research*, 41(Database issue), D871–D879. <http://doi.org/10.1093/nar/gks1150>
- LMU BioDB 2017. (2017). Week 5. Retrieved September 28, 2017, from https://xmlpipedb.cs.lmu.edu/biodb/fall2017/index.php/Week_5
- U.S NAGRP Bioinformatics. (2017). Genome Informatics Resources. Retrieved October 1, 2017, from <https://www.animalgenome.org/bioinfo/>