BIPAA, Bioinformatics Platform for the Agroecosystems Arthropods.

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BIPAA is a bioinformatics platform from the **French National Institute for Agricultural, Food and Environment (INRAE)** to assist genomics and post-genomics programs developed on insects associated to agroecosystems. It is located in Rennes (France) and is integrated in **GenOuest** platform infrastructure (https://www.genouest.org/).

Contacts : bipaa@inrae.fr , https://bipaa.genouest.org/

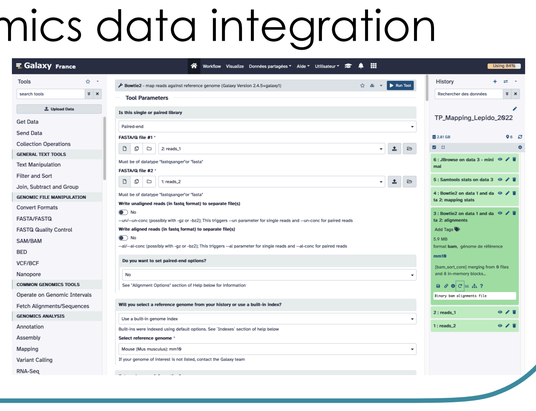
Data analysis

BIPAA supports a network of scientists from various french labs for analyzing their **genomics data**. BIPAA proposes personal guidance for developping scripts, running complex workflows on a computing cluster.

Topics :

- Genome assembly and annotation
- Transcriptomics analysis and non coding RNA
- Transposable elements
- Genomes comparison (Orthology)
- Variant identification
- Genomics and epigenomics data integration

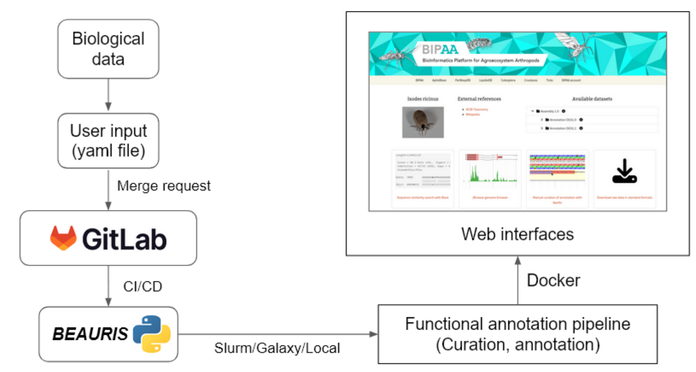
BIPAA contributes to the national **Galaxy** server usegalaxy.fr



Information systems

BIPAA Information systems are based on the **BEAURIS project** https://gitlab.com/beaur1s/beauris **and Galaxy Genome Annotation** https://galaxy-genome-annotation.github.io/

BEAURIS: How does it works?



- Each genome is a multi-container application.
- This system permits automatic deployment of new genome and update.
- This is a reproducible, re-usable, modular and extensible system.

It organizes and manages genomics data generated by various international groups and offers **textual and graphical tools** for browsing and querying genomics data.

BIPAA hosts multiple arthropod genomes

LepidoDB

17 lepidopterans

Aphidbase

12 aphids

ParWaspDB

15 parasitoid wasps

ColeoDB

3 coleoptera

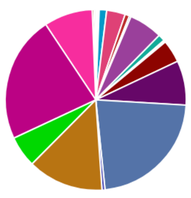
CrustaDB

1 crustacea

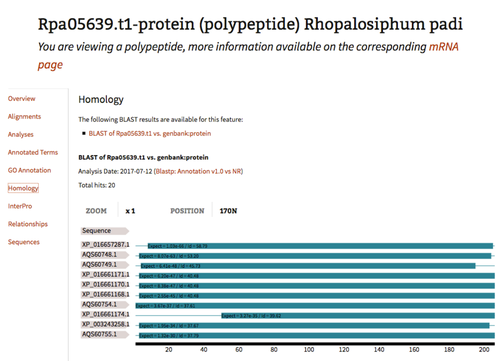
TickDB

4 ticks

For each genome, textual and graphical tools are available

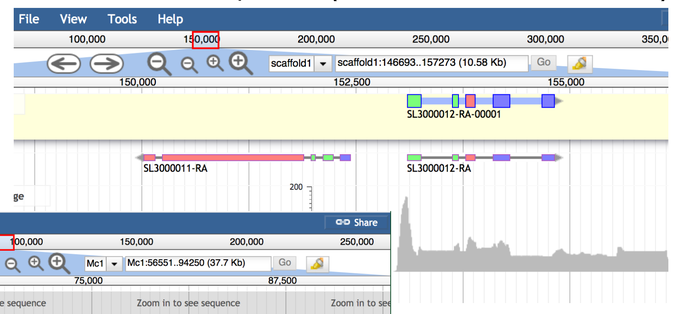


Gene Ontology

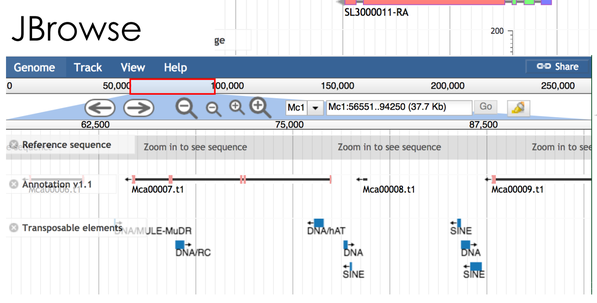


Sequence information

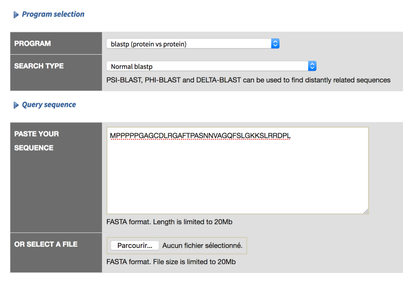
Apollo (manual annotation)



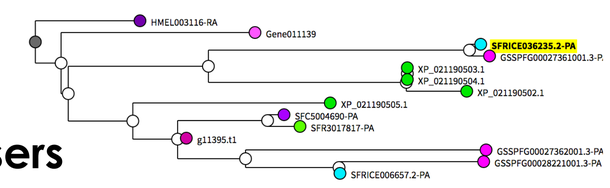
JBrowse



Genome browsers



Blast



Orthology and synteny

Collaborations

- Involved in various bioinformatics research projects, in collaboration with teams in **Inria/IRISA** in Rennes :
  - **GenScale** (complex genome assembly, variant identification)
  - **Dyliss** (data integration and mining, Askomics)
- Associated with 3 national networks of INRAE : **BAPOA** (Biologie Adaptative des Pucerons et Organismes Associés), **ADALEP** (Adaptation à l'environnement biotique chez les lépidoptères) and REacTION (Réseau d'échange sur les mécanismes Épigénétiques qui façonnent les interacTIONs)
- Involved in international consortia and insect genome projects (**i5k** : sequencing of 5000 insect genomes)
- More than 700 users are currently listed

Trainings

BIPAA is involved in training sessions in partnership with the **GenOuest** bioinformatics platform and the **BARIC** (Bioinformatique pour l'Analyse, la Représentation et Intégration de Connaissances) community of INRAE, and in tutorials development in **Galaxy Training Network (GTN).**

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