BIPAA, Bioinformatics Platform for the Agroecosystems Arthropods.
Stéphanie Robin, Fabrice Legeai, Anthony Bretaudeau

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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/

BIPAA supports a network of scientists from various French labs for analyzing their genomics data. BIPAA proposes personal guidance for developing 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

BIPAA hosts multiple arthropod genomes

<table>
<thead>
<tr>
<th>Genome</th>
<th>Genus</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LepidoDB</td>
<td>Aphidbase</td>
<td>17 lepidopterans 12 aphids</td>
</tr>
<tr>
<td>ParWaspDB</td>
<td>ColeoDB</td>
<td>15 parasitoid wasps 3 coleoptera 1 crustacea</td>
</tr>
<tr>
<td>CrustaDB</td>
<td>TickDB</td>
<td>2 crustacea 4 ticks</td>
</tr>
</tbody>
</table>

For each genome, textual and graphical tools are available

- Apollo (manual annotation)
- JBrowse
- Genome browsers
- Orthology and synteny
- Blast
- Gene Ontology
- Sequence information

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 work?
- 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.

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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With the support of the Erasmus+ Programme of the European Union