

Poster H-45

yrGATE: Web Based Community Gene Annotation for Eukaryotes



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Short Abstract: Your Gene structure Annotation Tool for Eukaryotes (yrGATE) provides an Annotation Tool and Community Utilities for web based community gene annotation. Annotators can evaluate gene evidence through several methods. yrGATE is appropriate for annotating emerging genomes and correcting inaccurate published annotations. yrGATE is portable and is available at <http://www.plantgdb.org/prj/yrGATE>.

Long Abstract:

An important step in gaining biological knowledge from a genome sequence is gene annotation, specifically gene structure annotation. Many varieties of gene prediction programs are available for producing eukaryote gene structure annotations. Gene prediction programs are not entirely accurate, and many types of gene annotations do not adapt to a computational model, such as alternatively spliced, bicistronic, and overlapping genes. Manual annotation is better suited to these and other complex annotation cases. However, manual annotation has had the disadvantages of being time consuming, having esoteric participation, and providing intermittent updates. Your Gene structure Annotation Tool for Eukaryotes (yrGATE) provides a web based gene Annotation Tool for gene structure annotation creation, and Community Utilities for accepting annotations into gene sets for sharing with a community. Annotators access the tool over the web, where they create an annotation, decide to save the annotation in their personal account, or submit the annotation for review for acceptance into a public gene set. Annotations created in the Annotation Tool are based on transcript evidence. Pre-calculated exon evidence is presented in several summaries with different selection mechanisms. If the provided evidence is not adequate, annotators can use portals to online exon-generating programs to add custom user-defined exons to their annotation. The online nature of yrGATE permits a large and diverse group of annotators and provides a continuous time frame for gene annotation, allowing annotators to examine new gene evidence as it becomes available and eliminating the delays of periodic annotation. yrGATE is implemented at genomic databases for Arabidopsis, rice, and maize. It is portable and an implementation using DAS servers for genome and gene evidence as input is available [<http://www.plantgdb.org/prj/yrGATE>].