

Development and Implementation of Ontologies in the Database

Monday, 17 January 2005

PAG-XIII

Use of Controlled vocabulary (Ontology)

- A system of using same vocabularies in functional annotation of gene products and phenotypes.
- Covers aspects of biology such as biochemistry, expression and development.
- A community standard.

Use !

Allows the users to query different databases using the same keywords and query strings.

Workshop objective

To show how functional annotation of genes, gene products, expression arrays and phenotypes can be improved by using ontologies and help the bench scientist.

Vocabulary examples

aleurone

- culm node
- ear
- ear silks
- embryo
- embryo axis
- endosperm
- female gametophyte
- glume
- guard cells
- husk
- husk leaf
- inflorescence
- kernel
- leaf
- leaf apex
- leaf blade
- leaf cuticle

Plant material used for the RNA isolation

Ontology terms are based on [Cereal Plant Ontology](#) database developed by Gramene.

This page has been updated **October 12, 2003**

Image	Common terminology	Plant anatomy ontology	Plant growth stage ontology	Sample name
im2	Two-day old germinating seed - coleoptile (<i>Golden Promise</i>)	coleoptile (GRO:0005373)	coleoptile emerged from seed (GRO:0007056)	COL_GP
im2	Two-day old germinating seed - embryo , coleoptile and roots removed (<i>Golden Promise</i>)	hypocotyl (GRO:0005342)	coleoptile emerged from seed (GRO:0007056)	GEM_GP
im2	Two-day old germinating seed - seminal roots (<i>Golden Promise</i>)	seminal root (GRO:0005318)	coleoptile emerged from seed (GRO:0007056)	RAD_GP
im1	Two-day old germinating seed - coleoptile (<i>Morex</i>)	coleoptile (GRO:0005373)	coleoptile emerged from seed (GRO:0007056)	COL_MX
im1	Two-day old germinating seed - embryo , coleoptile and roots removed (<i>Morex</i>)	hypocotyl (GRO:0005342)	coleoptile emerged from seed (GRO:0007056)	GEM_MX
im1	Two-day old germinating seed - roots (<i>Morex</i>)	seminal root (GRO:0005318)	coleoptile emerged from seed (GRO:0007056)	RAD_MX
-	10 cm seedling crown (<i>Golden Promise</i>)	stem (GRO:0005301) and crown	first leaf unfolded (GRO:0007060)	CRO_GP
im4	10 cm seedling roots (<i>Golden Promise</i>)	root (GRO:0005336)	first leaf unfolded (GRO:0007060)	ROO_GP
im4 , im6	10 cm seedling leaf (<i>Golden Promise</i>)	vegetative shoot (GRO:0005016)	first leaf unfolded (GRO:0007060)	LEA_GP

Different resources try to control their vocabulary.

However there is no standardized format, definition and often no equivalence (cross reference) to another resource.

The vocabularies are organized in a simple tree format (in a flat order).....!!

Overview talks:

1.00 pm-- **Jennifer Clark**

Does Your Gene Product Show On GO?

1.15 pm-- **Katica Ilic**

Controlled Vocabularies For Describing And Comparing Phenotypes And Gene Expression In Angiosperms

Training modules:

1.35 pm-- **Harold Drabkin**

Functional Genome Annotations Using the GO

2.10 pm-- **Katica Ilic and Leonore Reiser**

Using The Plant Ontologies: Searching/Browsing Terms And Annotations And Methods For Annotation Of Gene Expression And Phenotypes

2.45 pm-- Open Discussion and follow up with the invited participants.

www.gramene.org

<http://ucjeps.berkeley.edu/bryolab/deepgene/>

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