

Progress in orthologous candidate gene diversity assessment

ADOC project SP1

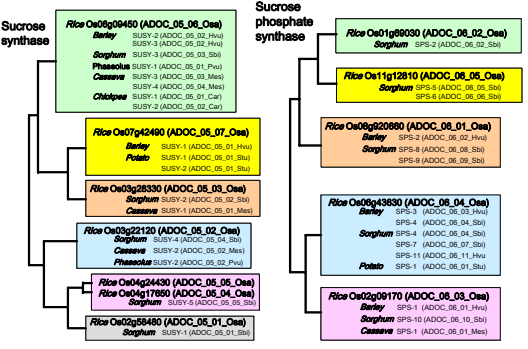
Dominique this@supagro.inra.fr, brigitte.courtois@cirad.fr, claire.billot@cirad.fr, rami@cirad.fr, romain.philippe@cirad.fr, m.bonierbale@cgiar.org, r.simon@cgiar.org, r.schaffelner@cgiar.org, brune@versailles.inra.fr, mounet@cng.fr, k.mcnally@cgiar.org, m.baum@cgiar.org, w.choumane@cgiar.org, c.t.hash@cgiar.org, r.k.vashney@cgiar.org, d.hoisington@cgiar.org, s.nayak@cgiar.org, m.blair@cgiar.org, h.upadhaya@cgiar.org, m.fregene@cgiar.org



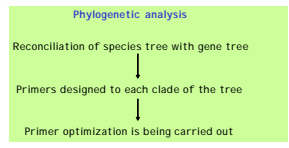
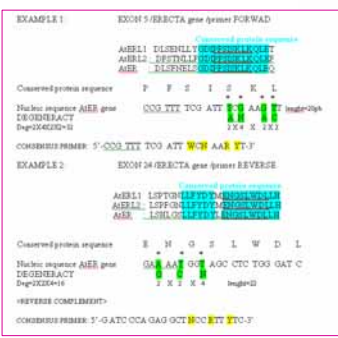
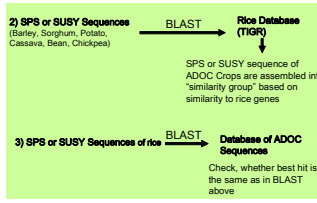
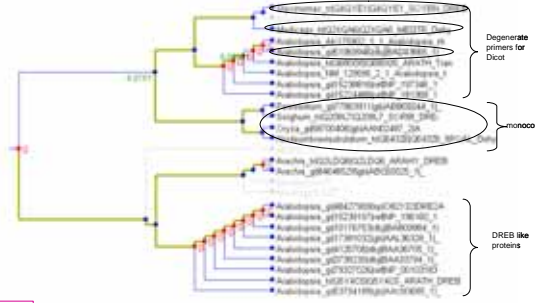
Gene families and orthology

The definition of orthology relationship between candidate genes in different plant species is complicated by the lack of knowledge of gene families in non-model species. We have developed different strategies in order to complete our collection of candidate gene sequences and try to identify orthologous sequences for the most promising genes.

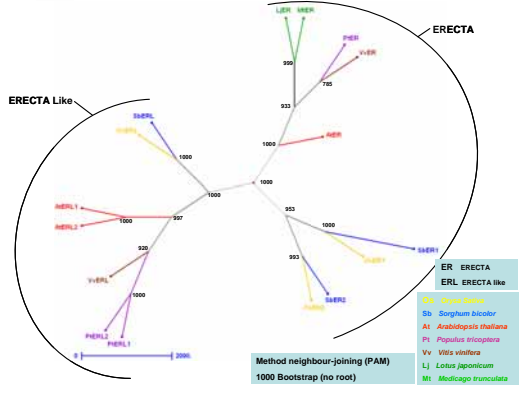
Phylogenetic trees for SuSy and SPS



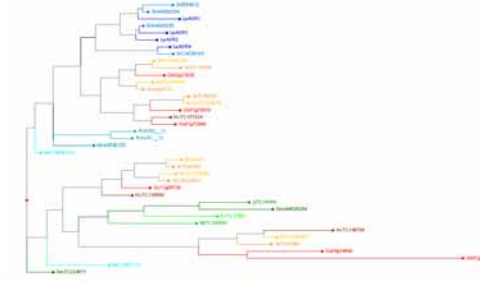
Reconciled tree of DreB2a used for primer designing



Consensus and specific primer design for ERECTA genes



Phylogenetic tree for ASR genes

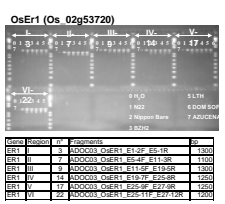


Expansion of the ASR gene family was probably posterior to the monocot-dicot divergence. Therefore orthology relationship between monocots and dicots will be difficult to assess from molecular divergence. Functional inference may be requested.

A 'home-made' protocol was defined to design consensus primers and amplify new sequences in the ADOC species

Candidate genes polymorphism

First analysis conducted on 7 to 8 test-genotypes



Species	ADOC Name	Identification	Fragment size	No of polymorphic sites
Rice	ADOC_01_01_Osa	Os01g02900	1021	3
Rice	ADOC_01_02_Osa	Os01g02910	1021	3
Rice	ADOC_01_03_Osa	Os01g02920	1021	3
Rice	ADOC_01_04_Osa	Os01g02930	1021	3
Rice	ADOC_01_05_Osa	Os01g02940	1021	3
Rice	ADOC_01_06_Osa	Os01g02950	1021	3
Rice	ADOC_01_07_Osa	Os01g02960	1021	3
Rice	ADOC_01_08_Osa	Os01g02970	1021	3
Rice	ADOC_01_09_Osa	Os01g02980	1021	3
Rice	ADOC_01_10_Osa	Os01g02990	1021	3
Rice	ADOC_01_11_Osa	Os01g03000	1021	3
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Rice	ADOC_01_13_Osa	Os01g03020	1021	3
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