Methods S1: Functional annotation of Chillpeach genes: functional categories, specific process/pathways, and relation to stress and hormones

ChillPeach unigenes were functionally annotated as indicated in Ogundiwin et al. [1]. The ChillPeach genes were classified into 34 distinct functional categories and 702 specific processes (Table S2) by extensively reviewing the literature and by searching in reference databases: PubMed [2], UniProt [3], prosite [4], BRENDA [5], TAIR [6], The Gene Index Project [7], KEEG [8, 9], Plant Metabolic Network [10, 11], and Plant Transcription Factor Database 2.0 [12].

To classify Chillpeach genes as stress and hormone responsive genes the AIG code of the Arabidopsis orthologues were used in a data mining strategy for interrogating the gene expression files from the following databases or papers:

Stress responsive genes:

(1) Cold, the ColdArrayDB (http://cold.stanford.edu/cgi-bin/data.cgi) [13] a database that contains global expression profiles of Arabidopsis genes in response to cold. We use the same searching conditions as in [14].

(2) Cold, drought and salinity responsive genes, the results obtained with Affymetrix forward and reverse tiling arrays [15]

(3) darkness responsive genes the results obtained using a Arabidopsis Functional Genomics Consortium or 11K AFGC cDNA microarray by [16]

(4) Pathogen- virus responsive genes results obtained using 22K Affimetrix ATH1 GeneChip by [17].

Hormone related genes:

(1) Abscisic acid (ABA), auxin (Aux), brassinosteroid (Br), cytokinin (CK), ethylene (Et), gibberellin (GAs), jasmonic acid (JA) and salicylic acid (SA): Arabidopsis Hormone Database (http://ahd.cbi.pku.edu.cn, [18]) a comprehensive database based on
data from mutant studies, transgenic analysis, and gene ontology (GO) annotation for the hormones

(2) ABA, AUX, Br, CK, Et, GAs and JA responsive genes in the results obtained using Affimetrrix ATH1 GeneChip as part of the AtGenExpress project by [19] and [20]

(3) ABA responsive genes using Arabidopsis Affymetrix tiling arrays identified by [15]

(4) ET-responsive genes by using cDNA-AFLP and a VIB Arabidopsis 6K cDNA microarray analysis as identified by [21]

References


