GEPHE SUMMARY

Gephebase Gene
BADH2

GepheID
GP00001772

Entry Status
Published

Main curator
Courtier

PHENOTYPIC CHANGE

Trait Category
Physiology

Trait
Fragrance

Trait State in Taxon A
Oryza sativa - non-fragrant

Trait State in Taxon B
Oryza sativa fragrant - varieties Suyunuo, Wuxiangjing, Pangxiegu, Xiangxuenuo, XiangjingT37, Wuxiang075, Xiangjing20â€“18, Basmati385, Basmati370, Ganxiangnuo, Meiguomolixiang, Guanglingxiangnuo

Ancestral State
Taxon A

Taxonomic Status
Domesticated

Taxon A

Latin Name
Oryza sativa

Common Name
rice

Synonyms
rice; red rice; Oryza sativa L.

Rank
species

Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza

Parent
Oryza () - (Rank: genus)

NCBI Taxonomy ID
4530

is Taxon A an Infraspecies?
No

Taxon B

Latin Name
Oryza sativa

Common Name
rice

Synonyms
rice; red rice; Oryza sativa L.

Rank
species

Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza

Parent
Oryza () - (Rank: genus)

NCBI Taxonomy ID
4530

is Taxon B an Infraspecies?
Yes

Taxon B Description
Suyunuo, Wuxiangjing, Pangxiegu, Xiangxuenuo, XiangjingT37, Wuxiang075, Xiangjing20â€“18, Basmati385, Basmati370, Ganxiangnuo, Meiguomolixiang, Guanglingxiangnuo

GENOTYPIC CHANGE

Generic Gene Name
BADH2

Synonyms
fgr; BADH2; OsBADH2; OsJ_27367; LOC_Os08g32870; Os08g0424500; OSJNBa0056L09.30; P0456B03.101

String
39947.LOC_Os08g32870.1

Sequence Similarities
Belongs to the aldehyde dehydrogenase family.

GO - Molecular Function
GO:0008802 : betaine-aldehyde dehydrogenase activity

GO - Biological Process
GO:0071454 : cellular response to anoxia

UniProtKB Oryza sativa subsp. japonica
Q84LK3

GenebankID or UniProtKB
ALZ42021

GO:0019285 : glycine betaine biosynthetic process from choline

GO - Cellular Component
GO:0005737 : cytoplasm
GO:0005777 : peroxisome

Presumptive Null
Yes

Molecular Type
Coding

Aberration Type
Deletion

Deletion Size
1-9 bp

Molecular Details of the Mutation
7-bp deletion in exon 2 resulting in premature stop codon

Experimental Evidence
Candidate Gene

Main Reference
Discovery of a new fragrance allele and the development of functional markers for the breeding of fragrant rice varieties . (2008)

Authors
Shi Weiwei; Yang Yi; Chen Saihua; Xu Mingliang

Abstract
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Additional References
The origin and evolution of fragrance in rice (Oryza sativa L.). (2009)

RELATED GEPHE

Related Genes
No matches found.
Related Haplotypes
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EXTERNAL LINKS

COMMENTS