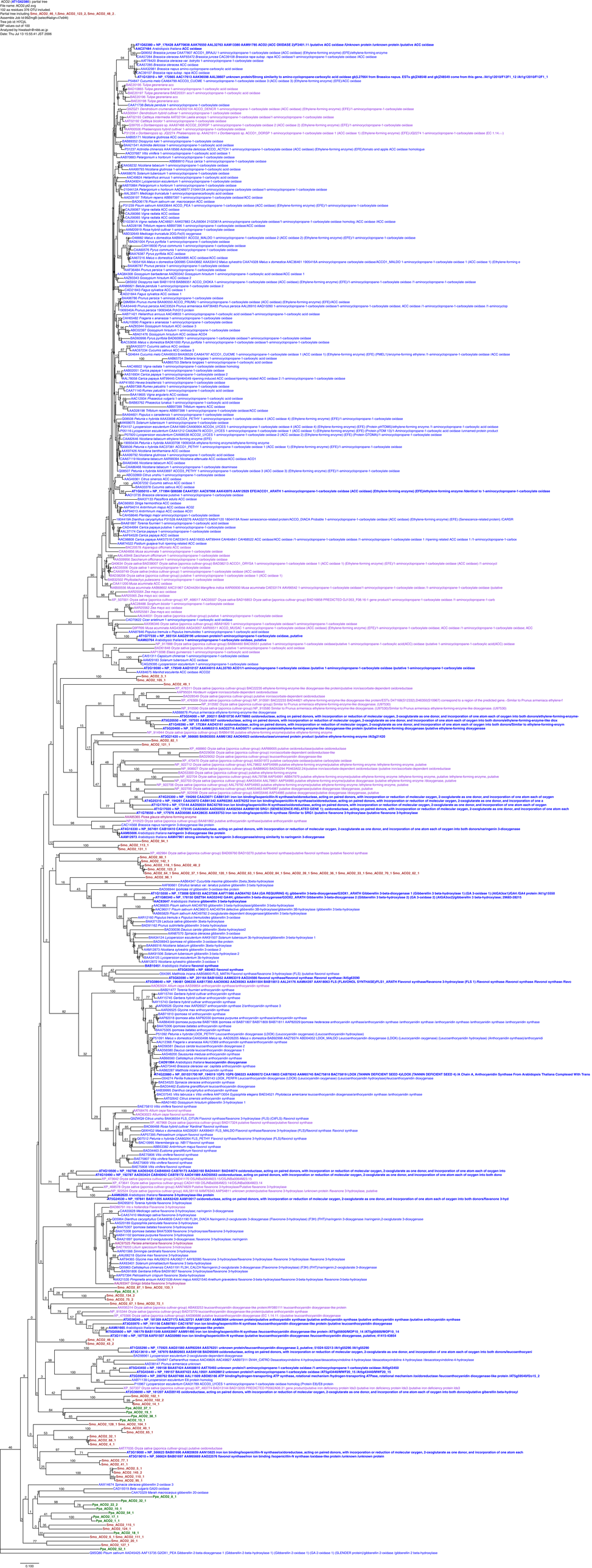
ACO2 (ATI G62380) partial tree
File name: ACO2.pb2.nwg
102 aa residues 376 OTU included.
Partial tree including Smo_ACO2_48_1,Smo_ACO2_123_2,Smo_ACO2_48_2 .
Assemble Job Id:992mq8 (selectNalign=7e94t)
Tree job id: HTCB_
BP values out of 100
Analyzed by hwasan@rnbb.ac.jp
Date: Thu Jul 13 15:55:41 JST 2006


AT1G62380 = NP_176428 AAP70838 AAK76550 AAL32763 AAM13380 AAM91786 ACO2 (ACC OXIDASE 2)(F2401.11 /putative ACC oxidase /Unknown protein /unknown protein /putative ACC oxidase
AAC27484 Arabidopsis thaliana ACC oxidase
Q09052 Brassica juncea CAA77907 ACO01_BRAJU 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/ethylene-forming enzyme
AAO73584 Brassica oleracea AAF65472 Brassica juncea CAC39108 Brassica rapa subsp. rapa ACC oxidase1=1-aminocyclopropane-1-carboxylate oxidase /ACC oxidase
AAT78420 Brassica oleracea var. botrytis 1-aminocyclopropane-1-carboxylate oxidase
AAO72951 Brassica oleracea ACC oxidase
AAA32661 Brassica napus amino-cyclopropane-carboxylic acid oxidase
ACS29107 Brassica rapa subsp. rapa ACC oxidase
AT1G12010 = NP_172565 AAC19113 AAK96598 ALL58807 unknown protein/Strong similarity to aminocyclopropane-carboxylic acid oxidase gb|L27664 from Brassica napus. ESTs gb|Z48548 and gb|Z48549 come from this gene. /At1g12010/F12P1_12 /At1g12010/F12P1_1
P54864 Solanum tuberosum ACC oxidase
AAS23195 Solanum pennellii ACC oxidase
BAD10865 Tulipa gesneriana 1-aminocyclopropane-1-carboxylic acid oxidase
BAM23197 Tulipa gesneriana BAD23331 acc1-aminocyclopropane-1-carboxylic acid oxidase
BAG20196 Tulipa gesneriana acc
BAE20198 Tulipa gesneriana acc
CAA77738 Petunia pendula 1-aminocyclopropane-1-carboxylate oxidase
Q03527 Dendrobium crumenatum AAD02104 ACO3_DENCR 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
AAS00041 Dendrobium hybrid cultivar 1-aminocyclopropane-1-carboxylate oxidase
AAT02153 Cattleya intermedia AAT02154 Laelia anceps 1-aminocyclopropane-1-carboxylate oxidase1=1-aminocyclopropane-1-carboxylate oxidase
AAT02152 Cattleya bicolor 1-aminocyclopropane-1-carboxylate oxidase
Q20705 x Doritaenopsis sp. AAD21468 ACO2_DORSP 1-aminocyclopropane-1-carboxylate oxidase 2 (ACC oxidase 2) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
AAR05006 Phalaenopsis hybrid cultivar 1-aminocyclopropane-1-carboxylate oxidase
Q71228 x Doritaenopsis sp. JQ2274 Phalaenopsis sp. AAA21611 x Doritaenopsis sp. ACO01_DORSP 1-aminocyclopropane-1-carboxylate oxidase 1 (ACC oxidase 1) (Ethylene-forming enzyme) (EFE)/JQ2274 1-aminocyclopropane-1-carboxylate oxidase (EC 1.14.-.-)
AAB05171 Nicotiana glutinosa ACC oxidase
AAB89502 Diospyros kaki 1-aminocyclopropane-1-carboxylic acid oxidase
BAA21541 Actinidia deliciosa 1-aminocyclopropane-1-carboxylic acid oxidase
Q41377 Actinidia chinensis AAA32836 Actinidia deliciosa ACO2_ACTDE 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/tomato and apple ACC oxidase homologue
AAO73987 Vitis vinifera 1-aminocyclopropane-1-carboxylic acid oxidase homolog
AAR03983 Pelargonium x hortorum 1-aminocyclopropane-1-carboxylic acid oxidase
ABB89910 Ficus carica 1-aminocyclopropane-1-carboxylic acid oxidase
CAA50232 Nicotiana tabacum 1-aminocyclopropane-1-carboxylic acid oxidase
AAA90703 Nicotiana glutinosa 1-aminocyclopropane-1-carboxylic acid oxidase
AAK68076 Solanum tuberosum 1-aminocyclopropane-1-carboxylic acid oxidase
AAC49824 Helianthus annuus 1-aminocyclopropane-1-carboxylic acid oxidase
BAA39404 Lycopersicon esculentum 1-aminocyclopropane-1-carboxylate oxidase
AAT07664 Pelargonium x hortorum 1-aminocyclopropane-1-carboxylic acid oxidase
Q10441 2A Pelargonium x hortorum AAC48977 Q10441 2A 1-aminocyclopropane-1-carboxylate oxidase/1-aminocyclopropane-1-carboxylate oxidase
AAL35971 Medicago truncatula 1-aminocyclopropanecarboxylic acid oxidase
AAD28197 Trifolium repens AB897397 1-aminocyclopropane-1-carboxylate oxidase/ACC oxidase
SAD06178 Plum salmon var. macrocarpon ACC oxidase
P31239 Plum salmon AAA33644 ACCO_PEA 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
AAL26567 Vigna radiata ACC oxidase
AAL26566 Vigna radiata ACC oxidase
AAL26565 Vigna radiata ACC oxidase
AAC49863 Malus x domestica AAC27883 CAJ58064 21032814 aminocyclopropane carboxylate oxidase/1-aminocyclopropane-1-carboxylate oxidase homolog /ACC oxidase
AAD25139 Pisum sativum ABR07096 1-aminocyclopropane-1-carboxylic acid oxidase
AAK03919 Rosa hybrid cultivar 1-aminocyclopropane-1-carboxylic acid oxidase
MB030649 Medicago truncatula 2OG-Fe(II) oxygenase
Q56982 Malus x domestica AAB84031 ACO2_MALDO 1-aminocyclopropane-1-carboxylate oxidase 2 (ACC oxidase 2) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
BAD61004 Pyrus pyrifolia 1-aminocyclopropane-1-carboxylate oxidase
CAH18930 Pyrus communis 1-aminocyclopropane-1-carboxylate oxidase
CAA40576 Pyrus communis 1-aminocyclopropane-1-carboxylate oxidase
AAA79397 Pyrus pyrifolia ACC oxidase
AAA57216 Malus x domestica CAA04885 ACC oxidase/ACC oxidase
Y90541654 Malus x domestica Q05985 CAA43662 AAA33412 Malus sylvestris CAA74328 Malus x domestica AAC36461 19054154 aminocyclopropane carboxylate oxidase/ACCO1_MALDO 1-aminocyclopropane-1-carboxylate oxidase 1 (ACC oxidase 1) (Ethylene-forming e
BAA06787 Prunus persica 1-aminocyclopropane-1-carboxylate oxidase
AAT36484 Prunus persica 1-aminocyclopropane-1-carboxylate oxidase
AQ843408 Gossypium barbadense AAZ63542 Gossypium hirsutum 1-aminocyclopropane-1-carboxylic acid oxidase/ACC oxidase 1
AAZ63343 Gossypium hirsutum ACC oxidase 2
Q65302 Diospyros kaki BAB11918 BAB86931 ACO4_DIOKA 1-aminocyclopropane-1-carboxylic acid oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase /1-aminocyclopropane-1-carboxylate oxidase
BAD56998 Pyrus pyrifolia BAD60999 1-aminocyclopropane-1-carboxylate oxidase 2
CAD21843 Pagus sylvatica ACC oxidase 1
AAB71232 Pagus sylvatica ACC oxidase 2
AAA96756 Prunus persica 1-aminocyclopropane-1-carboxylate oxidase
Q96954 Prunus mume BAA90592 ACCO_PRUMU 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/ACC oxidase
AAA34444 Prunus persica AAC33929 Prunus armeniaca AAF59485 Prunus persica AAL26010 Prunus armeniaca ACC oxidase; ACC oxidase /1-aminocyclopropane-1-carboxylate oxidase /1-aminocyclop
19093404A Prunus persica 19093404B Pch013 protein
AAB71421 Helianthus annuus AAC49833 1-aminocyclopropane-1-carboxylic acid oxidase/1-aminocyclopropane-1-carboxylic acid oxidase
CAH05482 Fragaria x ananassa 1-aminocyclopropane-1-carboxylic acid oxidase
AAU10690 Fragaria x ananassa 1-aminocyclopropane-1-carboxylic acid oxidase
AAN33344 Gossypium hirsutum ACC oxidase 3
ABC02397 Gossypium hirsutum 1-aminocyclopropane-1-carboxylic acid oxidase
ABA01476 Gossypium hirsutum ACC oxidase ACO4
ABD60999 Pyrus pyrifolia BAD60999 1-aminocyclopropane-1-carboxylate oxidase 2
BAC53656 Malus x domestica BADE10600 Pyrus pyrifolia 1-aminocyclopropane-1-carboxylate oxidase
BAA33377 Cucumis sativus ACC oxidase
AAC67234 Cucumis sativus ACC oxidase 3
Q04544 Cucumis melo CAA49503 BAA08228 CAA64797 ACCO1_CUCME 1-aminocyclopropane-1-carboxylic acid oxidase 1 (ACC oxidase 1) (Ethylene-forming enzyme) (EFE) (PMEL1)/enzyme-forming ethylene /1-aminocyclopropane-1-carboxylate oxidase /ACC oxidase
AAB60754 Stellaria longipes 1-aminocyclopropane-1-carboxylic acid oxidase
AAB60753 Stellaria longipes 1-aminocyclopropane-1-carboxylic acid oxidase
AAC49829 Vigna vexillata 1-aminocyclopropane-1-carboxylic acid oxidase homolog
AAB02051 Carica papaya 1-aminocyclopropane-1-carboxylic acid oxidase 1
AAU14924 Carica papaya 1-aminocyclopropane-1-carboxylic acid oxidase 2
AAL78058 Carica papaya AAT99445 CAH64549 ripening-induced ACC oxidase/ripening related ACC oxidase 2 /1-aminocyclopropane-1-carboxylate oxidase
AAP41890 Hevea brasiliensis 1-aminocyclopropane-1-carboxylate oxidase
AAB97368 Rumex palustris 1-aminocyclopropane-1-carboxylic acid oxidase
AAC11146 Rumex palustris 1-aminocyclopropane-1-carboxylic acid oxidase
BAA19605 Vigna angularis ACC oxidase
AAC12934 Phaseolus vulgaris 1-aminocyclopropane-1-carboxylic acid oxidase
BAB83762 Phaseolus lunatus 1-aminocyclopropane-1-carboxylic acid oxidase
ABB97399 Trifolium repens ACC oxidase
BAA94601 Populus x canadensis 1-aminocyclopropane-1-carboxylic acid oxidase
Q08508 Petunia x hybrida AAA33808 ACCO4_PETHY 1-aminocyclopropane-1-carboxylate oxidase 4 (ACC oxidase 4) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
AAX68073 Solanum lycopersicoides CAA41689 CAA66904 ACCO4_LYCES 1-aminocyclopropane-1-carboxylate oxidase 4 (ACC oxidase 4) (Ethylene-forming enzyme) (EFE) (Protein pHTOM5)/ethylene-forming enzyme /1-aminocyclopropane-1-carboxylic acid oxidase
P26110 Lycopersicon esculentum CAA41212 CAA35479 ACCO1_LYCES 1-aminocyclopropane-1-carboxylic acid oxidase 1 (ACC oxidase 1) (Ethylene-forming enzyme) (EFE) (Protein pTOM13)/1-aminocyclopropane-1-carboxylic acid oxidase /unnamed protein product
P07920 Lycopersicon esculentum CAA68538 ACCO3_LYCES 1-aminocyclopropane-1-carboxylate oxidase 3 (ACC oxidase 3) (Ethylene-forming enzyme) (EFE) (Protein GTOMA)/1-aminocyclopropane-1-carboxylate oxidase
AAA34209 Petunia x hybrida 1-aminocyclopropane-1-carboxylate oxidase
AAW59434 Petunia x hybrida AAA33758 1995054 ethylene-forming enzyme/ethylene-forming enzyme
Q08506 Petunia x hybrida AAC37381 ACO1_PETHY 1-aminocyclopropane-1-carboxylate oxidase 1 (ACC oxidase 1) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
AAS37426 Nicotiana benthamiana ACC oxidase
AAA96792 Nicotiana glutinosa 1-aminocyclopropane-1-carboxylic acid oxidase
CAA67119 Nicotiana tabacum AAR99364 Nicotiana attenuata ACC oxidase/ACC oxidase ACO1
BAA83466 Nicotiana tabacum ACC oxidase
CAA66968 Nicotiana tabacum 1-aminocyclopropane-1-carboxylate deaminase
Q08507 Petunia x hybrida AAA33807 ACCO3_PETHY 1-aminocyclopropane-1-carboxylate oxidase 3 (ACC oxidase 3) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase
ABC03869 Citrus unshiu 1-aminocyclopropane-1-carboxylic acid oxidase
AAO49361 Citrus sinensis ACC oxidase
ACO57232 Cucumis sativus ACC oxidase 1
BAA33378 Cucumis sativus ACC oxidase
AT1G05010 = NP_171894 Q06538 CAA47251 AAC97998 AAK43970 AAN12920 EFE/ACCO1_ARATH 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE)/ethylene-forming enzyme /identical to 1-aminocyclopropane-1-carboxylate oxidase
AAO13735 Brassica oleracea putative 1-aminocyclopropane-1-carboxylate oxidase
BAA37133 Passiflora edulis ACC oxidase
BAC66950 Striga hermonthica ACC oxidase
AAT40210 Arabidopsis thaliana ACO2
AAP94013 Arabidopsis thaliana ACO1
CAH56646 Plantago major aminocyclopropane-1-carboxylate oxidase
BAA41194 Dianthus caryophyllus P13103 CAA32376 AAA32373 EMD47120 16044194 flower senescence-related protein/ACCO_DIACA Probable 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) (Ethylene-forming enzyme) (EFE) (Senescence-related protein) /CARSR
BAA81897 Torenia fournieri 1-aminocyclopropane-1-carboxylic acid oxidase
CAD45896 Carica papaya putative 1-aminocyclopropane-1-carboxylate oxidase
AAL37174 Carica papaya 1-aminocyclopropane-1-carboxylate oxidase
AAF64328 Carica papaya ACC oxidase
ACN38808 Carica papaya AAK57516 CAE53415 AAS16933 AAT99444 CAH64841 CAH68522 ACC oxidase/ACC oxidase /1-aminocyclopropane-1-carboxylate oxidase /1-aminocyclopropane-1-carboxylate oxidase 1 /1-aminocyclopropane-1-carbox
AAM14522 Psidium guajava fruit ripening-related ACC oxidase
Q84ZD8 Asparagus officinalis ACC oxidase
CAA66956 Musa acuminata 1-aminocyclopropane-1-carboxylate oxidase
AAL40948 Saccharum officinarum 1-aminocyclopropane-1-carboxylate oxidase
AAS00956 Saccharum officinarum 1-aminocyclopropane-1-carboxylate oxidase
Q40634 Oryza sativa BAD38007 Oryza sativa (japonica cultivar-group) BAD83213 ACCO1_ORYSA 1-aminocyclopropane-1-carboxylate oxidase 1 (ACC oxidase 1) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase) /1-aminocyl
AAQ05006 Oryza sativa 1-aminocyclopropane-1-carboxylate oxidase
CAA59743 Oryza sativa (indica cultivar-group) 1-aminocyclopropane-1-carboxylate oxidase (ACC oxidase)
BAD38209 Oryza sativa (japonica cultivar-group) putative 1-aminocyclopropane-1-carboxylate oxidase 1 (ACC oxidase 1)
AB232302 Phytolacca pubescens 1-aminocyclopropane-1-carboxylate oxidase
AAT09643 Musa acuminata 1-aminocyclopropane-1-carboxylate oxidase
AAD03158 Musa acuminata AAR88402 AAD31967 CAD42464 Mangifera indica AAR06930 Musa acuminata CAE53174 AAV66542 1-aminocyclopropane-1-carboxylate oxidase1=1-aminocyclopropane-1-carboxylate oxidase /putative
AAR20564 Zea mays acc oxidase
AAR03565 Zea mays acc oxidase
XP_507091 Oryza sativa (japonica cultivar-group) XP_468017 AC055507 Oryza sativa BAD16853 Oryza sativa (japonica cultivar-group) BAD16858 PREDICTED OJ1353_F08.16-1 gene product3=1-aminocyclopropane-1-carboxylate oxidase 1=1-aminocyclopropane-1-carb
AAC29488 Sorghum bicolor 1-aminocyclopropane-1-carboxylic acid oxidase
AAR20562 Zea mays acc oxidase
AAR03561 Zea mays acc oxidase
AAU40431 Oryza sativa (japonica cultivar-group) putative 1-aminocyclopropane-1-carboxylic acid oxidase
CAD76922 Cicer arietinum 1-aminocyclopropane-1-carboxylic acid oxidase
AAX96346 Oryza sativa (japonica cultivar-group) ABA91820 1-aminocyclopropane-1-carboxylate oxidase1=1-aminocyclopropane-1-carboxylate oxidase
Q9FY69 Musa acuminata AAG43057 AAR00511 ACO3_MUSAC 1-aminocyclopropane-1-carboxylate oxidase 3 (ACC oxidase 3) (Ethylene-forming enzyme) (EFE)/1-aminocyclopropane-1-carboxylate oxidase; ACC oxidase /1-aminocyclopropane-1-carboxylate oxidase; ACC
AAN07845 Populus tremula x Populus tremuloides 1-aminocyclopropane-1-carboxylic acid oxidase
AT1G77330 = NP_565146 AAC29136 unknown protein/1-aminocyclopropane-1-carboxylate oxidase, putative
AAM63764 Arabidopsis thaliana 1-aminocyclopropane-1-carboxylate oxidase, putative
NP_917886 Oryza sativa (japonica cultivar-group) BAB84493 BAC05551 putative 1-aminocyclopropane-1-carboxylate oxidase/putative 1-aminocyclopropane-1-carboxylic acid(ACO) oxidase (putative 1-aminocyclopropane-1-carboxylic acid(ACO) oxidase
BAD61848 Oryza sativa (japonica cultivar-group) putative 1-aminocyclopropane-1-carboxylic acid oxidase
AAN12929 Solanum chilense 1-aminocyclopropane-1-carboxylic acid oxidase
AAM59183 Solanum tuberosum ACO2 oxidase
AAO39396 Lycopersicon esculentum ACO2 oxidase
AT2G19590 = NP_179549 AAD10157 AAX44010 AAL33783 ACO1/1-aminocyclopropane-1-carboxylate oxidase /putative 1-aminocyclopropane-1-carboxylate oxidase /putative 1-aminocyclopropane-1-carboxylate oxidase
AAX66475 Manihot esculenta ACC oxidase ACO3
Smo_ACO2_3_1
Smo_ACO2_105_1
Smo_ACO2_49_1
XP_478311 Oryza sativa (japonica cultivar-group) BAC23235 ethylene-forming-enzyme-like dioxygenase-like protein/putative iron/ascorbate-dependent oxidoreductase
XAP93204 Hordeum vulgare iron/ascorbate-dependent oxidoreductase
AAD55149 Oryza sativa (japonica cultivar-group) putative iron/ascorbate-dependent oxidoreductase
XP_476309 Oryza sativa (japonica cultivar-group) NP_911581 BAC22333 BAD44821 ethylene-forming-enzyme-like dioxygenase-like protein/ESTs D47168(S123332),D46350(S10967) correspond to a region of the predicted gene.-Similar to Prunus armeniaca ethylene-f
XP_915952 Oryza sativa (japonica cultivar-group) NP_910560 Similar to Prunus armeniaca ethylene-forming-enzyme-like dioxygenase. (U97530)
XP_910560 Oryza sativa (japonica cultivar-group) NP_910560 Similar to Prunus armeniaca ethylene-forming-enzyme-like dioxygenase. (U97530)/Similar to Prunus armeniaca ethylene-forming-enzyme-like dioxygenase. (U97530)
AAB66573 Pyrus communis ethylene-forming enzyme
AT5G05600 = NP_196733 AAM61440 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both donors/ethylene-forming-enzyme-like
AT1G54090 = NP_175304 AAD43141 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both donors/Similar to ethylene-forming-enzym
AT5G24040 = NP_197154 AAM64844 AAM98139 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both donors/ethylene-forming-enzyme-like protein /putative ethylene-forming-enzyme-like dioxygenase
AAD27138 Arabidopsis thaliana AAM91165 AAM98139 AAN65000 ethylene-forming-enzyme-like dioxygenase
AT3G21420 = NP_566665 BAB30355 AAM61362 AAC66923 oxidoreductase/unnamed protein product /putative ethylene-forming enzyme /At3g21420
Smo_ACO2_92_1
Smo_ACO2_121_1
XP_468860 Oryza sativa (japonica cultivar-group) AAR98005 putative oxidoreductase/putative oxidoreductase
BAD29956 Oryza sativa (japonica cultivar-group) iron/ascorbate-dependent oxidoreductase-like
BAD29956 Oryza sativa (japonica cultivar-group) leucoanthocyanidin dioxygenase-like
XP_470470 Oryza sativa (japonica cultivar-group) AAS01972 putative carbonate oxidase/putative carbonate oxidase
XP_932712 Oryza sativa (japonica cultivar-group) AAL73802 AAP54999 putative ethylene-forming enzyme/putative ethylene-forming enzyme /ethylene-forming enzyme, putative
XP_908907 Oryza sativa (japonica cultivar-group) BAB90620 BAD53294 P0463A02.24 putative iron/ascorbate-dependent oxidoreductase /putative iron/ascorbate-dependent oxidoreductase
BAD53305 Oryza sativa (japonica cultivar-group) putative ethylene-forming enzyme
XP_932704 Oryza sativa (japonica cultivar-group) AAL79798 AAP54991 ABB47939 putative ethylene-forming enzyme/putative ethylene-forming enzyme /ethylene-forming enzyme, putative /ethylene-forming enzyme, putative
XP_502703 Oryza sativa (japonica cultivar-group) AAL79792 AAP54993 putative ethylene-forming enzyme/putative ethylene-forming enzyme /ethylene-forming enzyme, putative
XP_502700 Oryza sativa (japonica cultivar-group) AAK55443 AAP54997 putative ethylene-forming enzyme/putative dioxygenase /putative dioxygenase
AT4G21010 = NP_193925 CAA23177 AAA32997 AAB70323 iron ion binding/isopenicillin-N synthase/oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one a
AT1G17010 = NP_173144 AAD50034 BAC42769 iron ion binding/isopenicillin-N synthase/oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen
AT1G17020 = NP_173145 CAA50564 AAD50033 AAA92204 AAM61100 SRG1 (SENESCENCE-RELATED GENE 1) oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each
AT1G78550 = NP_177976 AAD50580 AAK28635 AAK93753 iron ion binding/isopenicillin-N synthase /Similar to SRG1 /putative ferredoxin 3-hydroxylase /putative ferredoxin 3-hydroxylase
AAM65366 Malus glauca ethylene-forming enzyme
XP_910023 Oryza sativa (japonica cultivar-group) BAA81862 putative anthocyanidin synthase/putative anthocyanidin synthase
CAO14568 Rosa rugosa naringenin 3-dioxygenase like protein
AT4G16130 = NP_567491 CAB10410 CAB78675 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both donors/naringenin 3-dioxygenase like protein
AAM65000 Arabidopsis thaliana naringenin 3-dioxygenase like protein
AAM12973 Arabidopsis thaliana AAM47961 strong similarity to naringenin 3-dioxygenase/strong similarity to naringenin 3-dioxygenase
Smo_ACO2_94_1
Smo_ACO2_113_1
Smo_ACO2_131_1
XP_925264 Oryza sativa (japonica cultivar-group) BAD09760 BAD10270 putative flavanol synthase/putative flavanol synthase (putative flavanol synthase
Smo_ACO2_66_1
Smo_ACO2_142_1
Smo_ACO2_48_1,Smo_ACO2_48_2
Smo_ACO2_123_2
Smo_ACO2_64_1,Smo_ACO2_37_1,Smo_ACO2_120_1,Smo_ACO2_63_1,Smo_ACO2_84_1,Smo_ACO2_39_1,Smo_ACO2_36_1,Smo_ACO2_33_1,Smo_ACO2_70_1,Smo_ACO2_62_1
Smo_ACO2_96_1
AAB64347 Cucurbita maxima gibberellin 2beta,3beta-hydroxylase
AAF80661 Citrullus lanatus var. lanatus putative gibberellin 3 beta hydroxylase
BAD09944 ipomoea nil gibberellin 3-oxidase-like protein
AT1G15550 = NP_173908 Q9XIY0 AAC27008 AAF24178 AAO64742 GA4 (GA REQUIRING 4) gibberellin 3-beta-dioxygenase/G3OX1_ARATH Gibberellin 3-beta-dioxygenase 1 (Gibberellin 3 beta-hydroxylase 1) (GA 3-oxidase 1) (AtGA3ox1)/GA4 /GA4 protein /At1g15550
AT1G80340 = NP_178150 Q9ZTS6 AAG32442 GA4H; gibberellin 3-beta-dioxygenase/G3OX2_ARATH Gibberellin 3-beta-dioxygenase 2 (Gibberellin 3 beta-hydroxylase 2) (GA 3-oxidase 2) (AtGA3ox2)/gibberellin 3 beta-hydroxylase; 29663-28215
AAC26047 Arabidopsis thaliana gibberellin 3 beta-hydroxylase
AAC66620 Pisum sativum AAC49793 gibberellin 3 beta-hydroxylase/gibberellin 3 beta-hydroxylase
AAC96017 Pisum sativum AAC49755 AAC49756 defective gibberellin 3B-hydroxylase/gibberellin 3B-hydroxylase /gibberellin 3 beta-hydroxylase
AAB65829 Pisum sativum AAC49792 2-oxoglutarate-dependent dioxygenase/gibberellin 3 beta-hydroxylase
AAR21160 Populus tremula x Populus tremuloides gibberellin 3-oxidase
BAA37129 Lactuca sativa gibberellin 3beta-hydroxylase
BAD91162 Prunus subhirtella gibberellin 3-beta hydroxylase
SAD30036 Daucus carota gibberellin 3beta-hydroxylase2
AAN07579 Spinacia oleracea gibberellin 3-oxidase
BAA34154 Lycopersicon esculentum AAA91507 Solanum tuberosum 3b-hydroxylase/gibberellin 3-beta-hydroxylase 1
BAD09945 ipomoea nil gibberellin 3-oxidase-like protein
BAA85616 Nicotiana tabacum gibberellin 3beta-hydroxylase
AAM12873 Nicotiana sylvestris gibberellin 3-oxidase 2
AAS01108 Solanum tuberosum gibberellin 3-beta-hydroxylase 2
BAA34125 Lycopersicon esculentum 3b-hydroxylase
AAM12872 Nicotiana sylvestris gibberellin 3-oxidase 1
BAB10451 Arabidopsis thaliana flavonol synthase
AT5G63590 = NP_568463 flavonol synthase
O04369 Matthiola incana AAB58850 FLS_MATIN Flavonol synthase/flavanone 3-hydroxylase (FLS) /putative flavonol synthase
AT5G08640 = NP_200184 BAB10402 AAB82319 AAD25456 flavonol synthase/flavonol synthase /At5g63590
AT5G08640 = NP_196481 Q96330 AAB17393 AAC69362 AAC69363 AAB41504 BAB10013 AAL24176 AAM64397 AAN10063 FLS (FLAVONOL SYNTHASE)/FLS1_ARATH Flavonol synthase/flavanone 3-hydroxylase (FLS 1) /flavonol synthase /flavonol synthase /flavonol synthase /flavo
AAO63524 Allium cepa AAS09854 anthocyanidin synthase/anthocyanidin synthase
AAB21477 Torenia fournieri anthocyanidin synthase
AAY15746 Gerbera hybrid cultivar anthocyanidin synthase
AAY15745 Gerbera hybrid cultivar anthocyanidin synthase
AAY15743 Gerbera hybrid cultivar anthocyanidin synthase
AAP82026 Glycine max AAR26527 anthocyanidin synthase 2/anthocyanidin synthase 3
AAB71809 Ipomoea nil anthocyanidin synthase
AAB71810 Ipomoea nil anthocyanidin synthase
AAP80218 Ipomoea alba AAP80200 Ipomoea purpurea anthocyanidin synthase/anthocyanidin synthase
AAB71811 Ipomoea purpurea AAB71806 Ipomoea nil BAB71807 BAB71809 BAB71811 AAP80209 Ipomoea hederacea anthocyanidin synthase/anthocyanidin synthase /anthocyanidin synthase /anthocyanidin synthase /anthocyanidin synthase
BAA75306 Ipomoea batatas anthocyanidin synthase
BAA75305 Ipomoea batatas anthocyanidin synthase
P51092 Petunia x hybrida LDOX_PETHY Leucoanthocyanidin dioxygenase (LDOX) (Leucocyanidin oxygenase) (Leucoanthocyanidin hydroxylase)
P51091 Malus x domestica CAA04998 Malus sp. AAD52005 Malus x domestica BAB20596 AAZ73374 ABD04502 LDOX_MALDO Leucoanthocyanidin dioxygenase (LDOX) (Leucocyanidin oxygenase) (Leucoanthocyanidin hydroxylase) (Anthocyanidin synthase)/anthocyanid
AAU12368 Fragaria x ananassa AAU12369 anthocyanidin synthase/anthocyanidin synthase
AAO56581 Daucus carota leucoanthocyanidin dioxygenase 2
AAO56580 Daucus carota leucoanthocyanidin dioxygenase 1
AAS48200 Saussurea medusa anthocyanidin synthase
AAB66560 Callistephus chinensis anthocyanidin synthase
CAD91864 Arabidopsis thaliana leucocyanidin dioxygenase
AAO73440 Brassica oleracea var. capitata anthocyanidin synthase
AAO63357 Matthiola incana anthocyanidin synthase
AT4G22880 = NP_001031700 NP_194010 Q9FS29 Q9SG23 AAB09572 CAA19603 CAB78243 AAM65746 BAC75818 BAC75819 LOX (TANNIN DEFICIENT SEED 4)/LOX (TANNIN DEFICIENT SEED 4) (A Chain A, Anthocyanidin Synthase From Arabidopsis Thaliana Complexed With Trans
Q04CF4 Perilla frutescens BAA21451 LOX_PERFR Leucoanthocyanidin dioxygenase (LDOX) (Leucocyanidin oxygenase) (Leucoanthocyanidin hydroxylase)/leucoanthocyanidin dioxygenase
AES34220 Spinacia oleracea anthocyanidin synthase
AAO56582 Daucus carota leucoanthocyanidin dioxygenase
AAS39969 Dianthus caryophyllus anthocyanidin synthase
BAC07545 Vitis labrusca x Vitis vinifera AAP13054 Gypsophila elegans BAE54521 Phytolacca americana leucoanthocyanidin dioxygenase/anthocyanidin synthase /anthocyanidin synthase
AAT05942 Citrus sinensis anthocyanidin synthase
ABA01483 Gossypium hirsutum gibberellin 3-hydroxylase 1
BAE75810 Vitis vinifera flavonol synthase
AAT69476 Allium cepa flavonol synthase
AAO63023 Allium cepa flavonol synthase
Q9ZWQ9 Citrus unshiu BAA36554 FLS_CITUN Flavonol synthase/flavanone 3-hydroxylase (FLS) (CitFLS) /flavonol synthase
AT1G63610 = NP_177876 AAD24324 CAA99358 FLS1; flavonol synthase/flavanone 3-hydroxylase (FLS) BAD17324 putative flavonol synthase/putative flavonol synthase
BAC66468 Rosa hybrid cultivar 'Kardinal' flavonol synthase
Q9XHQ2 Malus x domestica AAD52691 AAX98401 FLS_MALDO Flavonol synthase/flavanone 3-hydroxylase (FLS)/flavonol synthase /flavonol synthase
AAP57305 Petroselinum crispum flavonol synthase
Q07012 Petunia x hybrida CAA60264 FLS_PETHY Flavonol synthase/flavanone 3-hydroxylase (FLS)/flavonol synthase
BAC10995 Nierembergia sp. NB77 flavonol synthase
AAB82082 Antirrhinum majus flavonol synthase
AAD34463 Eustoma grandiflorum flavonol synthase
AAD34462 Eustoma grandiflorum flavonol synthase
BAE75807 Vitis vinifera flavonol synthase
BAE75809 Vitis vinifera flavonol synthase
BAE75804 Vitis vinifera flavonol synthase
AT4G10500 = NP_192798 AAD03425 CAB49003 CAB79173 AAQ65100 BAD44441 BAD44674 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into
AT4G10480 = NP_192787 AAD03424 CAB49004 CAB79172 AAM10083 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both dono
XP_473642 Oryza sativa (japonica cultivar-group) CAD41170 OSJNBa0064823.13/OSJNBa0064823.10
XP_473641 Oryza sativa (japonica cultivar-group) CAD41169 OSJNBa0064823.14/OSJNBa0064823.14
XP_468078 Oryza sativa (japonica cultivar-group) AAN74829 Putative flavanone 3-hydroxylase/Putative flavanone 3-hydroxylase
NP_922524 Oryza sativa (japonica cultivar-group) AAL58118 AAM75183 AAP54911 unknown protein/putative flavanone 3-hydroxylase /unknown protein /flavanone 3-hydroxylase, putative
AAN62620 Arabidopsis thaliana flavanone 3-hydroxylase-like protein
AT5G24520 = NP_197841 BAB11205 AAK82420 AAM10017 oxidoreductase, acting on paired donors, with incorporation or reduction of molecular oxygen, 2-oxoglutarate as one donor, and incorporation of one atom each of oxygen into both donors/flavanone 3-hyd
BAD56810 Torenia hybrida flavanone 3-hydroxylase
BAD56791 Iris x hollandica Flavanone 3-hydroxylase
CAA55629 Medicago sativa flavanone-3-hydroxylase; naringenin 3-dioxygenase
CAA57410 Medicago sativa flavanone-3-hydroxylase
Q00664 Dianthus caryophyllus CAA49630 CAA51190 FL3H_DIACA Naringenin,2-oxoglutarate 3-dioxygenase (Flavanone-3-hydroxylase) (F3H) (FHT)/naringenin 3-dioxygenase /naringenin,2-oxoglutarate 3-dioxygenase
AAB71808 Ipomoea batatas flavanone 3-hydroxylase
AAA75398 Ipomoea batatas flavanone 3-hydroxylase/flavanone 3-hydroxylase
BAA41102 Ipomoea purpurea flavanone 3-hydroxylase
BAA21897 Ipomoea nil 2-oxoglutarate 3-dioxygenase; flavanone 3-hydroxylase; naringenin
AAO73525 Persea americana flavanone 3-hydroxylase
BAE78003 Lilium speciosum flavanone 3-hydroxylase
AAR01066 Sinningia cardinalis flavanone 3-hydroxylase
AAO06218 Glycine max flavanone 3-hydroxylase
AAT84365 Glycine max AAU06218 AAV80217 AAY80585 flavanone 3-hydroxylase/flavanone 3-hydroxylase /flavanone 3-hydroxylase /flavanone 3-hydroxylase
AAX63401 Solanum pinnatisectum flavanone 3 beta-hydroxylase
Q05983 Callistephus chinensis CAA51191 FL3H_CALCH Naringenin,2-oxoglutarate 3-dioxygenase (Flavanone-3-hydroxylase) (F3H) (F