**DmaW**

>Metarhizium\_brunneum\_eas\_cluster

QIDERIGHSVYETLSLILDFPNDDQKLWWHSTAPMFEAMLQTAGHTINTQYRHLGIYKKHVIPFLGVYPTNDKERWLSILTRYGIPFELSLNCSNSVVRYTYEPINAASGTQKDPYNTLAIWESLQKLVQIQAGIDVEWFKYFKRELTLNTAESAYLFDNGLAKDEIKTQNKLALDLKGSQFALKVYIYPALKSLATGKSMHELIFGSVHKLSLQYSSIRAAFERLEGFVISRNSRAQTGDCGALHPRLLSCDLVDPAKSRIKIYLLEQMVSLSAMEDLWTLGGQLTDQSTMDGLDLIRELWDLLRIPPGLRSYPEPYLALGKVPDERLPSMVNYTLHHDDPTPEPQVYFTVFGMSDLDVTNALTVFFERRGWSEMAIKYRAFLQKSFPHDDHESLNYIHTYISFSYRNNKPYLSVYLHSFESGNWPVLP

>Metarhizium\_brunneum\_AZNG01000010

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>Claviceps\_paspali\_eas\_cluster

PAADEPPRDVYETLSLIFDFPNEEQRLWWHSTAPMFCSVLQMAGYHVHDQYRHMGIFKKHIIPFLGVYPVEDKARWLSILTRYGIPFELSLNCSDSVVRYTYEPITEATGTDKDPYNTLAILEGIQKLVQIQPGIDLAWFSHFKHELTLDRKESESLTKSGLADGQIWTQNKLALDLRGKHFSLKAYFYPELKSVATSTSTHDLIFGSVYRLSMTHAGIRPALALLDDYVTSRKLSTEAGDGARGALEARLLSCDLVQPAASRVKIYLLEKTVSLSAMEDLWTLGGRRTDPSALEGLGMVRQLWHLLDVPDVCEAYPQTYLRLGQVPDEQLPSMANYTLHHDDDMPEPQVYFNVFGMSDHKISSALASFFENHGWHDMAAKYRSFLRDSYPNHDLESLNYLHTYVSFSYRRHKPYLSVYLHTFESGRWPILP

>Claviceps\_paspali\_J7FK08

MESDKNGPARQENDIAEKESDIRYWTRVVCPSVRSLLHAAGSYTAEDIEAQMRTLREVVLPDLGPRPSRAPGPSYLFQGGCPFQLSINTTSKANAVRYVWEVLGERGHTSDDPLAMQTTRDTVSRLSAKFGLSTKWSDVLLSALELTTKEAQKAVEKMPEWILEHLEKGAVVPRIKNLPFGFVAFDLKESDVSIKLYITLKAREIFTGKSAADVIFDSLRNFTPAFKPEAIDMIQNFLSGLSEKMPLEVIAIDCVDEAHLSEARVKLYCHSTSNSFNTVKKWLTIGGKVKDENTLKGLQILRSMWHLFIQKPEGIPDDELETPVNLENALKHRMYFSFELKPGQDIPQVKTYLPIWRYAPSDEQAIDNFEAAFRQCHHPWGEDGTYGRIFRNALCAPPIHGDLAYIYCEKRGVYQTIYVTPPLLEED

>Periglandula\_ipomoeae\_eas\_cluster

ATVNESGRGVYDTLSLIFDFPDDEQRLWWHSTAPMFAAMLQTAGHNVHDQYRHLGIYKKNIIPFLGVYPTEGKGRWLSILTRYGIPFELSLNCSNSIVRYTYEPINEATGTDKDPYNTLAILESLQKLVQIQSGIDLEWFNYFKHELTLNGTESAYLRSNDLVNCQIKTQNKLALDLKGNQFALKVYIYPELKSTATGKSIHELIFGSVRKLSLEHPSIQPAFQVLDDYVASRNISAETGGEYSALQPRLLSCDLINPAKSRVKIYLLERTVSLSAMEDLWTLGGRRTDPSTMDGLDMVRELWNLLEMPAGLQAYPKPYLQLGKIPNEQLPSMANYTLHHNDPMPEPQVYFTVFGMSDFKVTNALTVFFERRGWNEMARKYRVFLQESYPNDDLESLNYLHTYISFSYRSNKPYLSVYLHTFESGHWPIFP

>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025547003

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>Aspergillus\_homomorphus\_XP\_025547740

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>Aspergillus\_leporis\_eas\_cluster\_1

MIPNASHQQAYKVLSDIFDFPNNEQRNWWHSTAPMFAQMLQTADYDIHSQYKYLAMFKKHVIPFLGIYPSDDRDRWLSILTRYGTPFELSLNCSDSLVRYTYEPINAVSGTLQDPFNSFAIWESLKHLVAIEPGLNLDWFIHFKRDLTLNADESAFLLENGLVGGQIQTQNKLALDLKGGRIVPKTYIYPALKSVATGRSIQELIFGSIHCLSRQYSSIRAPMAMLEEYVQSRGANSTMSPRLFSCDLIDPAKSRIKIYLLERMVSLEMMEDLWTLGGRRNDASTLAGLDMIYELWELLQIPAGLRSYPEPYLPLGTIPDELLPSMANYTLHQDDPIPEPQVYFTVFGMNDMAVADALTTFFARRGWTRMAQRYKDSLRAYYPHADHDRLNYVHAYISFSYRKGRPYLSVYLQTLETGDWAISH

>Aspergillus\_leporis\_eas\_cluster\_2

QVLNASHQPVYKILSSVLEFQSNDHKLWWHSTAPMFSEMLQRANYDLHSQYKHLGIYKKYIIPFLGAYPTNGRERWLSILTRYGTPFELSLNCSDNLVRYTYEPINAATATAQDPFNTHAIWESLQKLIAIQPGVDVQWFCHFKHDLTLSASETKHVLENGLAGSQIMTQNKLALDLKGDEFMVKTYIYPALKAAVTGRSIQDLMFDSIHRLSERYPSIQAPLLALNEYVESRGADSTASPRLLSCDLIDPSKSRIKIYLLERMVSLPAMEDLWTLGGRRTDSSILAGLQMLRELWELLRIPPGLRSYPEPYLPLGTIPNELLPSMANYTLHHDDALPEPQVYFNVFGMNDMEVADALTTFFERQGLADMASQYKDSLRAFYPHADHDRLNYLHAYISFSYRKEKPYLSVYLQTLETGEWAVSH

>Aspergillus\_leporis\_KAB8070129

EMPTITNIEPFQVLSKILDFPNDDQQDWWYSTGPMLAKMLQDAGYDIHAQYAHLCLHHKCVVPYLGPYPTNGKDRWMSILSRFGLPYELSLNCSKSIVRLAFEPIGPLSGTEQDPFNAQAIWGCLKKLARLNSAIDLQWFTQFKKHLVLNEDEAKLVRGRGLDKGQIKTQNKLGLDLKGGKFEVKMYMYPFLKSVATGVPIEQLMFNSVRKVDHDQKLAVPLSILEEYINSRREKTMSARLISCDLIDPSRSRIKIYVAEQSVDWEHLVDIWTLGHRRQDSVTMSGLQLLRELWDLLNIPEGPCHFRDGGYLELGSKINERLPLLANFTLHPNERYPAPQIYFHTFGISDVAVADAIATFCDRRGWTEMAESYKANLFSYYPDEDANELNYLQSLVSFSYRDKKGYLSVYLHTFEAGGWRK

>Aspergillus\_leporis\_KAB8076481

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>Aspergillus\_hancockii\_eas\_cluster\_2

QLLNASHQEVYRTLSRVLEFQCNDHRLWWHSTAPMFAEMLHRANYDLHAQYRHLGVFKKYIIPFLGVYPTNDRDRWLSILTRYGTPFELSLNCSDNLVRYTFEPINTATATAQDPFNTHSIWESLQKLMAIQPGVDVQFFCHFKHDLTLSASESRYVLENDLAGSQIMTQNKLALDLKGDGFVVKTYIYPALKAAASGRSVQDLMFDSVHRLSQRYPSIQAPFLVLNEYVESRGANSTASPRLLSCDLVEPSKSRIKIYLLERMVSLPAMEDLWTLGGRRTDPSTLAGLDMMRELWGLLRIPPGLRSYPEPYLPLGTIPDELLPSMANYTLHHDDPLPEPQVYFTVFGMNDMAVADALTTFFDRQGWTDMAAGYKESLRAFYPHADHDRLNYLHAYISFSYRKEKPYLSVYLQTLETGEWSVYR

>Aspergillus\_hancockii\_KAF7591409

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>Aspergillus\_hancockii\_KAF7585382

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>Aspergillus\_hancockii\_eas\_cluster\_3

KIPNASHARAYKTITDISDFPNIDQKLWWHSTGPMFAAMLDLAGYDVHSQYRILGTYLKHIIPFLGVYPTRTNDRWLSILTRYGTPFELSLNCSHSLVRYTYEPITSATGTSKDPFNTNAIWESLHRLIPLQKGIDLEFFRHFKEDLTLNSDDSAYLLEHDLVGGQIRTQNKLAFDLHGDEFIVKTYIYPSLKSLATGKSIMTLMFDSIGRLAQQYPSFTAPLERLRVYVDSRGPQSTADLRLLSCDLIDPKKSRIKIYLLERMVSLQSMEDLWTLGGTRWDASTLAGLEMIRELWGLIKLPEGLRGYPEPFLPLGTIPHEQLPLMANYTLHQDDPIPEPQIYFTTFGVNDAQVANGLTTFFERHGWTDMAQKYKDSLRAY

End of DmaW

**EasF**

>Metarhizium\_brunneum\_eas\_cluster

RVIDIRSSHFEDLLTDQVLSGFSNDPKTLPAQLFYTNEGLEHWNHHSRQPDFYPRQQEIKILKQRGDDMARSIAENSVILDLGSANLEKVTYLLEALEAQEKNVAYFALDLSASQLASTLDSIPTDKFRHVRFTGLHGTFEDGLRWINETPEICDLPHCVLLLGLTIGNFSRQNAAAFLHNIAKNALQGKSRAQSSIVMSLDSCKVPTQVLRAYTSDGVVPFALQALTYANTLFHEKTRNGVNGWQSSCNLDPEDWYYLSQWNFAMGRHEASLIPRSKDINLGPLLNDIVVRKDEQVRFGCSYKYDASERTELFTAAGLKDETAWTG

>Metarhizium\_brunneum\_XP\_014544791

DIIDIRSNRVDFNLKDEVARMVIPKDGRARKLPTLLLYDERGLQLFEDITYLDEYYLTNDEIELLKKHSVEIAATIPDGAMVIELGSGNLRKVCLLLQAFEDARKSIDYYALDLSKKELERTLSHVPDFKYVCCHGLLGTYDDGTVWLKQPSIVDRPKCILHLGSSIGNFHRNEAAEFLQSYADILKPQDSMVVGLDSCGNPDRIYHAYNDSKGITHEFILNGLINANRIYGQEIFHLPDWKVIGEYVYDDEGGRHQAFLSPLQEVNVLGSIIKPNERIQIEQSLKYSKIGAENLWKHAGLREIGIWTR

>Periglandula\_ipomoeae\_eas\_cluster

SVIDIRSHLVEDSLPDQVVKGLGSDPKTLPALLFYSNEGLEYWNHHARQPDFYPRHQEIEILKRKGDEIARSVAPNSVILDLGSANLEKVTYLLEALEAQAKNVTYFALDLSAPQLMSTLKAIPTTKFRHVRFAGLHGTFVDGLRWISETPDIRDLPHCVLLFGLTIGNFSRPNAATFLRNIASQALRGASEDKSSIFLSLDSCKVPTQILRAYTSDGVVPFALQSLAYAKTLFCEQTQNDFNEKPSSCHLNPDDWHYHSEWNFVLGRHEASLIPRLNDIHLGPLLHDIVVKKDEKVRFGCSYKYDDLERDKLFVDAGVKDEMAWTN

>Claviceps\_paspali\_eas\_cluster

SVTDIRSSRAEDSLPDQVIKGLKSDPKTLPALLFYSDEGLGHWNHHASQPDFYPRRQEIDILKQRGDEMAGSIAANSVVVDLGSANLEKVTHLLKAVEAQEKPVDYFALDVAAPQLTSTLEAMIATTRFRHVGLGGLHGTFDDGLRWLEDTPTIEDRPRCVLLLGLTIGNFSRRNAAAFLRSIANHALRGPAAESSSILVSIDSCKMPTQILRAYTSEGVVPFALQSLTCARRLLLGRGDDDDDAALLSRHLNPDDWYYHSEWNFVLGRHEASLIPRSRDLPLGPLLDNVTVQRDEKVRFGCSYKYDESERETLFSDAGLRCEAVWTN

>Aspergillus\_leporis\_eas\_cluster\_2

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>Aspergillus\_leporis\_cluster\_1

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>Aspergillus\_leporis\_KAB8074790

DIVNIHQNDVEFSLVNEIHKGINPPAGTKKSMPTMLLYDANGLKLFEEITYLEEYYLTNAEIEVLNRNAKRIIERIPDNAQLLELGSGNLRKVEILLREFERVGKRVDYYALDLSLSELQRTFSEVSIEEFTHVGFHGLHGTYDDALTWLGNTENRKRPTAILSMGSSLGNFDRPAAASFLSRYAKLLGPSDLMIIGLDGCKDSDKVYRAYNDSKGITQQFYENGLVHANTVLGYEAFKPNEWQVVTDYDPVEGRHQASYSPKQDVVINGVLLHKGEKLVFEEAFKYGPEERDQLWRDAKLIDVAELGN

>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025545683

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>Aspergillus\_homomorphus\_XP\_025553546

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7592909

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>Aspergillus\_hancockii\_KAF7591365

AVIPISSSHDTTSTLQPPTTDLKTDILAGITSSSPCLPSLLLWGDNGIRHFNNLTLHPNYYPSRTELAIVKQYAEDFAAMTPAGSILLELGCGSLHKTSIILSAFDRLRRPINYYALDVSEAELHASIKMLRQDFTHSKFVSINGLYGTYDDCAAWLLSLSTSSQPHALPNLVPGQVISFLWIGNSIANMHPPAATEMLSKFQKACSASRLQCRFFVGSDACGDPNTVLSAYNPNHQTFTDFILSGLDHANDILGEKVFHSEDFQVETEFDKASRLLSVYYVANQPIELVWHNTASHGSVRRVFQKGERLLIIFSYKWSAKDFSRICRDAGMQIARRWTD

End of EasF

**EasE**

>Metarhizium\_brunneum\_eas\_cluster

CRCRPSEPCWPSADQWDIFNKSIGGNLARIRPVASVCHGPEYDAAACTDLSSLARDSGWRASNPATLQDWVWEGNGLAEEICHVVTSPEKSQQSACHQGRVPLYSATVQSTTQIQSSVRFAKKHNLRLVVKNSGHDCAGRSSSPDSFQIHTNLLKGITYHDNFVAQGSAARGSGPAVTMGAGIMHWEVYSDGAKNGYTIVGGECPTVGAVGGFLQGGGVSSFHSFTKGLAVDNVLEYQVVTANGELIAANENQNRDLFWALKGGGGGTFGVVAQATVRVYPDDPITVAAISISTSLTNSLFWTEGVSELLRLLSIFNQQGFPGQIVVMGPNQGSLQATLEFHFPNTTDESYVNGLLNSQMRPLWDHKISTNLSIRVQKKASSEVRLGPDTYPPQYGIVQGSVLISAALFNSADGSPLIARNFSNLNLGPNDILFTSNLGGRVMDNSDIDIPLHPSWRSAAQLVTLVRAVEPSNKGRLSALETLHSHDMPILYSLEPKNKVSYRNLGDPSENEFQSRYWGSNYKRLASIKERWDPDELFTTRLGVGSEEWDTEGICRK

>Metarhizium\_brunneum\_XP\_014548363

CRCRPHEKCWPSKHQWSTLNSTIQGNLQAVRPVAAPCFNPSSPLATSCAVAKQNANNSVWRSAQPGAVQWENWEAWPEKDQSCYFDQPKNIPCGQGRISLYSAVVERAEHIQAAVRFAAKYNLRLAIKNSGHCFLGRSTAPESLQISTNKIKSMAFTDRFVPEGAAGSTSESFGSAVTIGAGVQLKELYVAATKHNVTVVAGLARTIGAAGGYIQGGGHSPLGNWKGMASDNALEFKVVNAKGELVTANSYKNQDLFWALRGGGGGTFGVVISVTIRTFPDVPSGFVSFGFGTLAANSSAYWDMVRAFHAHLPSVSGAGGAGYYAISFVPSDINGTKVLELTGGFGFLNVTSEEAIRKAVAPMMAEVNRYAGRVSGYNISINPRVSDYILGLLRGEADDTGGIAVYGSRMISRDFLLSRDGAARLTDALRDIAEISPTGFIGIVVAGGAAADPTIDSALNPAWRKTLTHIAFGAGWNSTTPVKEIRAIQEELTNIKMEKLRVLEPHMGAYLNEADPNEKDFQKSFWGANYARLYKVKQAVDPDNLFIARKGVGSENWDDAGLCRR

>Metarhizium\_brunneum\_XP\_014543419

MWDQYANDTCLPDPRAPCSGQGYPAYVVNASTPEHVKTGVDFARRHNIRLVVKSTGHDYLGRSIAPGALSIWTHYLNNIEYHAGQFKLNGSGKAITGDAVTVGGGTEMYDIYSATDKHNHTIVGGGGKTVGISGYISGGGHSILAPRFGLAADQVLEMQVVTPRGEILTVNEDRHADLFWALRGGGGSTFGVITSITLKTHPTPKIFAINWMALIQPNSTNFSDIITYLVSQVPSLMDAGLSGYSFVGYQVPKPVPIPGLPDTINGMFGHAVLQDADSEDDVDQILKPLNETLKNKWPGEVGLYNSVVPYKSFLAWFDDYYDQQTAGNSSYLVSRLLDKKTLTTTSPELTKALMAPIPYTNSYAVFMVGGRGVNDAKPRGGGNAVHPAWRNAYVHAITAAGFPHFNTTARLEAIEILQRAFQPLRDLTPESGSYINEALPFEKNFQQTFWGSNYERLLELKRNVDPTDVFWCLPCVGNERWQEGEDGKLCKI

>Periglandula\_ipomoeae\_eas\_cluster

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>Periglandula\_ipomoeae\_eas\_cluster\_AFRD01000101

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>Claviceps\_paspali\_eas\_cluster

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>Aspergillus\_leporis\_eas\_cluster\_2

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>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_KAB8070023

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>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025547682

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>Aspergillus\_homomorphus\_XP\_025555451

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7589136

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End of EasE

**EasC**

>Metarhizium\_brunneum\_eas\_cluster

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EKLA

>Periglandula\_ipomoeae\_eas\_cluster

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>Claviceps\_paspali\_eas\_cluster

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>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_eas\_cluster\_2

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>Aspergillus\_leporis\_KAB8073820

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ANATDAKSARL

>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025550739

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>Aspergillus\_homomorphus\_XP\_025553851

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7587357

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ANASDAKSARL

End of EasC

**EasD**

>Metarhizium\_brunneum\_eas\_cluster

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>Metarhizium\_brunneum\_XP\_014540202

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>Periglandula\_ipomoeae\_eas\_cluster

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>Claviceps\_paspali\_eas\_cluster

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>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_KAB8071224

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>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025551494

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>Aspergillus\_homomorphus\_XP\_025550581

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7593456

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End of EasD

**EasA**

>Metarhizium\_brunneum\_eas\_cluster

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>Metarhizium\_brunneum\_XP\_014545218

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>Metarhizium\_brunneum\_XP\_014539711

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>Claviceps\_paspali\_eas\_cluster

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>Claviceps\_paspali\_AFRC01000484

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>Periglandula\_ipomoeae\_eas\_cluster

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>Periglandula\_ipomoeae\_AFRD01000074

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>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025550480

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>Aspergillus\_homomorphus\_XP\_025546102

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>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_KAB8071228

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>Aspergillus\_leporis\_KAB8076213

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>Aspergillus\_leporis\_eas\_cluster\_2

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7594783

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>Aspergillus\_hancockii\_KAF7591663

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End of EasA

**EasG**

>Metarhizium\_brunneum\_eas\_cluster

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EKDIWL

>Metarhizium\_brunneum\_XP\_014539390

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>Periglandula\_ipomoeae\_eas\_cluster

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EKKFWR

>Claviceps\_paspali\_eas\_cluster

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EREAWL

>Aspergillus\_leporis\_eas\_cluster\_1

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AREKGCWT

>Aspergillus\_leporis\_eas\_cluster\_2

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>Aspergillus\_leporis\_KAB8071227

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>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025545959

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>Aspergillus\_hancockii\_eas\_cluster

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IREKQCWT

End of EasG

**CloA**

>Metarhizium\_brunneum\_eas\_cluster

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>Metarhizium\_brunneum\_XP\_014548872

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>Metarhizium\_brunneum\_XP\_014539652

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>Claviceps\_paspali\_eas\_cluster

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VEVRILRHRWS

>Periglandula\_ipomoeae\_eas\_cluster

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>Periglandula\_ipomoeae\_AFRD01000240

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>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025548027

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>Aspergillus\_homomorphus\_XP\_025556034

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>Aspergillus\_leporis\_eas\_cluster\_1

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DTVMAKTWLSKSIAFYCEGWANNDQQAPRKGNQSGRDSHMKRYLEIDPSDEKKARAVPHPLEDIFNFIAG

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>Aspergillus\_leporis\_KAB8069486

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>Aspergillus\_leporis\_KAB8068025

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TKVVA

>Aspergillus\_leporis\_eas\_cluster\_2

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WT

>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7597145

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>Aspergillus\_hancockii\_KAF7597008

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EGVNLRKHMVSFNRGSRQCLGMNLAYAQMYLTLAMFARRFDVELVDTTEENIRLGRDKGLPYPAKGRFSA

RIKVTGMAKD

End of CloA

**Lps A/T modules**

>Aspergillus\_leporis\_cluster\_1\_lpsD\_mod\_1

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>Aspergillus\_leporis\_KAB8071957\_mod\_1\_of\_1

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LVVFIDHSEGQSQNPIPLSLGSEIAKTTTQVFQTQVSHAISELRKALPEYMVPSRFLPLCRVPLLESGKT

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>Aspergillus\_leporis\_KAB8077642\_mod\_1

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VGGPIVGRGYLNRPHQTANVFITNPDWAPWFRIKDIYQFYKTGDLVRYNSDGTITFIARKDTQVKLNGQR

VELGEVEHQARQCFGNAEVAAEVAAPAGQKPTLILFVAERQGFSEDMNCNSLLSPPRDAFQSEARAVKAR

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>Aspergillus\_leporis\_cluster\_1\_lpsD\_mod\_2

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>Aspergillus\_leporis\_KAB8077359\_mod\_4

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VLACGGEKLSREVALKWAHRVKLINGYGPTETTIFAVVNDVTPSTDPSCIGYGIPSTLTWVVDPENHNRL

SPLGAIGELALEGAALAREYLKSLEKTADAFVNEPAWMTAFPSSLPSPRRIYKTGDLVRYNSDGSIEYIS

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QNQMDVAYSELQEVQKNLESQLPIYMVPQTWAMIKKLPMLVSGKLDRKTITAWIEKIDESTYDRIMQVYD

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>Aspergillus\_leporis\_KAB8079276\_mod\_2

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TRDAFVENPAFMQGKNISQYKFYRTGDLVRYNPDGSLNIAGRKDSQVKFHGQRIELGEIEFHLRARKVVE

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>Aspergillus\_leporis\_cluster\_2\_lpsD\_mod\_1

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>Aspergillus\_leporis\_cluster\_2\_lpsD\_mod\_2

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>Aspergillus\_homomorphus\_lpsD\_mod\_1

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>Aspergillus\_homomorphus\_XP\_025556051\_mod\_2

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>Aspergillus\_homomorphus\_XP\_025545812\_mod\_1

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>Aspergillus\_homomorphus\_lpsD\_mod\_2

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>Claviceps\_paspali\_lpsB

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>Periglandula\_ipomoeae\_lpsC

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>Epichloe\_festucae\_Lps1\_mod\_1

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>Epichloe\_festucae\_Lps1\_mod\_2

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>Epichloe\_festucae\_Lps1\_mod\_3

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YINDPERSAAVFVDPPTWLTRLRGGHSPTRLYKTGDLVSAGLDGCLSFVGRKDDQVKIRGQRVELGEVEA

LASQAFPGSHVVVETVKDLSSTILVAFILQKETAHAQPSSISSLLHPPSPLFRELISAASCSLRETMPSF

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ESIPLDEDLFTFGLDSLTAM

End of Lps A/T modules

**EasO**

>Aspergillus\_homomorphus\_eas\_cluster

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>Aspergillus\_homomorphus\_XP\_025552327

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>Aspergillus\_homomorphus\_XP\_025555304

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>Metarhizium\_brunneum\_eas\_cluster

SDQKTRCIVIGAGVSGILMAYKLQHYLNDFVEFQILEKNPDLGGTWYENKYPGCACDVPSHCYQYAFAPNPSWSKLYSSSEEIHDYLKKVVKHFNLERYIRYNTKVTSAKWTESTGTWSVGISDGTTIDCEILINAGGILHHPQLPDLKGLKSFAGKVVHTAAWDSGLDLGGKKVALIGSGSSAVQILPQLQPVCSSVRVYIRTPPWIAPPMVDTESESPNRDYTNDEQAFFRQDPAKYAQMRKEINSNLNGMFKALFKNSPEQQNFRQMLETRMRSLIRDESLQDHLVPKFEVGCRRVNPCEQFLYSIQEKNVTAVFNAIEEVKPHGIVSEGVEHPVDIIVAATGFNNSFRPQFPLLGRDGVNLQDIWADEPTSYFGTGVSGFPNYLTFLGPNTPISNGAFMGPLEGTSDYFIRLLQRAIRYGASSFDVKPEAQADFDSRVCEFMKKTVWTGSCLSWYKKTRDGKITALWPGSSLQYMQVLAEDRWEDYNWAYRGRRYDYWGNGFSWIEQPKSDKLGIQERKSKN

>Metarhizium\_brunneum\_XP\_014539774

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>Metarhizium\_brunneum\_XP\_014545974

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7588834

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>Aspergillus\_hancockii\_KAF7590203

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K

>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_KAB8075889

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>Aspergillus\_leporis\_KAB8069416

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>Aspergillus\_leporis\_eas\_cluster\_2

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>Claviceps\_paspali\_eas\_cluster

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>Periglandula\_ipomoeae\_eas\_cluster

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End of EasO

**EasP**

>Metarhizium\_brunneum\_eas\_cluster

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>Metarhizium\_brunneum\_XP\_014542068

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>Periglandula\_ipomoeae\_eas\_cluster

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>Claviceps\_paspali\_eas\_cluster

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>Aspergillus\_homomorphus\_eas\_cluster

APPEMPSGYEMKTLPYKTTGSLSLNLDIIYPLQASTTPVPVLIHYHGGFLIVGDRQSFLPHWLVNACAARGWIFVTPDYRLLPETTAHDAVADAVDAYQWVRTSLASTLQHLSPGPVIAAGASAGAYLALTSASQAEHKPDALLLLYGMLDPLHEHFTHPVDNFFGMTPSDSRPFFDAWAAGQQKDDPAATVRTGYPIPADPSTDARMGLIAALHGQALLPDYMAGVPGLAGRVRDGSGGEVVDLVPEKARGLFAIACGRVAGLPPTAVVHGRNDVGVPVTISLSATETLRRLGVQVHAEFPDDAPHGFDAMLGDVDIERSRKAEGDTPALESLRRVLGWLD

>Aspergillus\_homomorphus\_XP\_025551571

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>Aspergillus\_homomorphus\_XP\_025554994

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>Aspergillus\_leporis\_eas\_cluster\_2

QSIELPAGYLTKTTTYKIIHSVNLELDIVYPQETSVDPVPVLIHYHGGFLIIGDRFSFLPYWLLNACAARKWIFVTPNYRLIPESTAHDAVADALDAFLWVKTSLSRTLGVTVGPVISAGSSAGAYLAMISASVSSVKPDALVLLYGMLDPSSERYTTPGTNILGMPPIDGQPILDQFETLKQQGRANPLAGYPVPSDLASDFRMGLIAAAHCMGVLPDLMTSIPGLSRDIARHSTVAIPTEAKHLFPIGCSGDVVLPRTAILHGKNDNVVPFAASQVAADTLRKMGTEVYTEFLDDACHSFDTMVGNINIEKSNAPEARTPAFDGLRRIIKFLD

>Aspergillus\_leporis\_KAB8076056

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>Aspergillus\_leporis\_KAB8071629

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>Aspergillus\_leporis\_eas\_cluster\_1

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>Aspergillus\_leporis\_KAB8068752

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>Aspergillus\_hancockii\_eas\_cluster

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>Aspergillus\_hancockii\_KAF7594585

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>Aspergillus\_hancockii\_KAF7588380

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End of EasP