**Table S7: Expanded gene families that have proteins identified in our germination secretome (starred). These were used as bait for a BLASTP search (e<1x10-5 cutoff) and were aligned with Clustal Omega:**

***S. lophii* gene family 1:**

\*SLOPH\_580\_Contig\_15878 MDLFINNNTKLFKHSTVSKHMLLNTKKNIKYILKSLLLSTIMLLCLKLLNXTKKNIKYIL

SLOPH\_2487\_Contig\_11389 ------------------------------------------------------------

SLOPH\_1048\_Contig\_6469 ----------------------MNSIHTTNHFYTNILNLNNTIIQHKIYNRDNFSIR---

SLOPH\_956\_Contig\_5046 ------------------------------------------------------------

SLOPH\_2571\_Contig\_7208 ------------------------------------------------------------

SLOPH\_580\_Contig\_15878 KASFLSTIMLLCLK---LLNYTFIPTPYAKCIFTDKQRIEDLYNNHDSTITNLNFSRDDE

SLOPH\_2487\_Contig\_11389 ---------------------TFIPTPYAKCIFTDKQRIEDLYNNHDSSITNLNFSRDDE

SLOPH\_1048\_Contig\_6469 ------FSLIFCNTLCYFLFYLNIRMFYINCTSFNKERIIGLYENNGIALTNIRFSKYDE

SLOPH\_956\_Contig\_5046 ------------------------------------------------------------

SLOPH\_2571\_Contig\_7208 ------------------------------------------------------------

SLOPH\_580\_Contig\_15878 IYLDYFDFNLHVDYMLPDSLNRPELLELFKEYCEIVKYPADELSQYENAINESITTENLL

SLOPH\_2487\_Contig\_11389 IYLGYLGFNLHVDYMLPDSLNRPELLELFKEYCEIVKYPADELSQYENAINESVIIEKLL

SLOPH\_1048\_Contig\_6469 IYIEHKEFNLHIDYLLPDFLDIPSVQRLYSKYKDHISFSKHISKEFELCINNSTTTKELY

SLOPH\_956\_Contig\_5046 ------------------------------------------------------------

SLOPH\_2571\_Contig\_7208 ------------------------------------------------------------

SLOPH\_580\_Contig\_15878 ENLISYFAKYHEILSSKIKYIYNIMEKYHGEYGKIGDPNKIT---IEDFYYPSRPGDRLI

SLOPH\_2487\_Contig\_11389 ENLINYFAKYHEILSSKIKYIYNIIKEYHGGHDRIGDPNRIT---IEDFYYPATPTCRFI

SLOPH\_1048\_Contig\_6469 CNLIAYFAKSHTILNSKVREIYFRMKMYFYRTNLLPD---NCLITKEHFTHMIYYRKLKR

SLOPH\_956\_Contig\_5046 -----------------------------------------------------------M

SLOPH\_2571\_Contig\_7208 -----------------VREIYFRMKVYFDPTNLLPDPDNNCLITKEHFAHMIHYRKLKG

SLOPH\_580\_Contig\_15878 FEKFCEESDKYIVPISILLQKIETTEIYTQILGYELIKVKAYSNIGSVPHLHNSLEMNIK

SLOPH\_2487\_Contig\_11389 FEKFCEELDKYIVPISILLQKIETTKIYTQILGYE-------------------------

SLOPH\_1048\_Contig\_6469 REDFIIVLKEYLLPLSIIMQKVETTQLYTRIIGYELLYLNIITQIQMVPHLFDIFHENIK

SLOPH\_956\_Contig\_5046 NDNFNSDLRKYILPLSILLQKSQITEIYTRIIGYELLHCETMKIISDIPHLYYTFINYIK

SLOPH\_2571\_Contig\_7208 RDDFSIILKEDLLPLFILMQKIETTQLYTRIIGYELLYLNIITQIQIIPHLFNIFHENIK

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SLOPH\_580\_Contig\_15878 NTFVQAIQTLTRIAALSVDMQSKHFEFRPSQNYFSLLKIHFFILRVKDILLCFCLNKENP

SLOPH\_2487\_Contig\_11389 ------------------------------------------------------------

SLOPH\_1048\_Contig\_6469 EEFTDSLQWLDNLFNIILHIGVEGRVKSRGFYSFSLIMLHKTFIKMKHFLKYFYTSQENI

SLOPH\_956\_Contig\_5046 KEFIDGVVNLDKIINAMFRLDKKQTKRANSPHYLSLMKLHNTLIDMKQFLVPFYKNKNNP

SLOPH\_2571\_Contig\_7208 KEFIDSLKCLGNIFSVILHVGIEGRITFRDCYSFSLIPVHQTFIKMKHFSKYFYIGQENI

SLOPH\_580\_Contig\_15878 KFEPMLKKYMFSDLNSFISY-TIYDMYESVKTIFDLSDKTDEEFKK--RTIHKIIKLFSK

SLOPH\_2487\_Contig\_11389 ------------------------------------------------------------

SLOPH\_1048\_Contig\_6469 NLSEILGIPLKYIRSDFFKNNLLKNLLDAMSILYSAKEDENDISTNMTNKID-DIRKWP-

SLOPH\_956\_Contig\_5046 DFKQILIRENTSNILNYIIHFTFKNVSDIMWILRDLENTK-SLYKNIDTKFKIIILTWTS

SLOPH\_2571\_Contig\_7208 NLSEILRIPFYYNRSDFFKNDLCKNLLDAIWILYSENEGENDISTNMNNKIE-NIRKWP-

SLOPH\_580\_Contig\_15878 TSLNIIDIYSLDSIELLNNILV----DVDDL-------

SLOPH\_2487\_Contig\_11389 --------------------------------------

SLOPH\_1048\_Contig\_6469 -DIHIKDLNLEKAKKIF-DMLFDKRFTSHDMEKEIFSK

SLOPH\_956\_Contig\_5046 KSIEIKNLNIIKMKNFF-DMTFDEKYTVYDMKKKLFE-

SLOPH\_2571\_Contig\_7208 -DIHIKDLNLEKAKKIF-DMLFDKRFTSHDMEKEIFSK

***S. lophii* gene family 2:**

\*SLOPH\_607\_Contig\_16670 -----------------------MLNRNRIDFIYGNEKNFHFF--------IKLYKNIKL

SLOPH\_961\_Contig\_5050 MYLFFIYFDKKNKYLIFFLMGAEMLSRNRIDFIYENEKNFDFF--------IKLYKNIKL

SLOPH\_507\_Contig\_11452 -----------------------MLSINKLNFIYEKEKNLNFF--------IKIYKSIKL

SLOPH\_926\_Contig\_4765 -----------------------ML----------NRNESNFL--------IKLYRSIRL

SLOPH\_786\_Contig\_2784 ------------------------------------------------------------

SLOPH\_2513\_Contig\_15665 -----------------------MLNRNESDFLCRKEKNSNFF--------IKLHKYIKL

SLOPH\_988\_Contig\_5460 -----------------------MINRNKISLIYENEKNFNLL--------IKLYKSVRL

SLOPH\_1056\_Contig\_6587 -----------------------MLTRNEYDFFCREEKNFNFF--------IKLYRNIKL

SLOPH\_2587\_Contig\_9268 ------------------------------------------------------------

SLOPH\_635\_Contig\_17914 ------------------------------------------------------------

SLOPH\_880\_Contig\_4187 -----------------------MLNREDFHTIYKEEIKTNTYVNLVAIKFIKISENNIF

SLOPH\_607\_Contig\_16670 LGIIKIRKLPVFCLLYFMTIQSSTISNHGREANIEDVLIKIXEVNGTEKEDNGVVSNLDY

SLOPH\_961\_Contig\_5050 LGMIKIRKLAVFCLIYFMNIQASNISNRGQETNIEDVLIKIQRKNGTKKEGEGIICDLGY

SLOPH\_507\_Contig\_11452 LNMIRIKKLPILYLIYFMNMQASNIINRGKKANIKDVLIKIREKNRTERKGYEIIDNLGY

SLOPH\_926\_Contig\_4765 LTMIRIKKLPVLCLISFINIQVSNINVCAEEANVKDILIRIKDKNEVEIKDNGIINNLGY

SLOPH\_786\_Contig\_2784 ------------------------------------------------------------

SLOPH\_2513\_Contig\_15665 LIMIRIKKLPVLCLIYFMNIQASNVSNLGEEANVKDVLIKIQTKNGIEIQSNGITNKLGY

SLOPH\_988\_Contig\_5460 SLLIRIRKLPVFCLVYFMNIQAGNINNHSEEANIKDVLIKIQEEDGIEKEGNGIIFNLDY

SLOPH\_1056\_Contig\_6587 LIMIRIKKLPVLCLISFMNIQASNISACGEEASVKDVLIKIRKKNGTEIRGNGIINKLGY

SLOPH\_2587\_Contig\_9268 ------------------------------------------------------------

SLOPH\_635\_Contig\_17914 -----------------MNIQASNINACGEETNVEDVLIKIKKGNKPEIQANGIINNLDH

SLOPH\_880\_Contig\_4187 SYIVRISKLFSICFVFLLKVNSASISEEGKRARVQNITLELKKPNEVDNISNGIIENINI

SLOPH\_607\_Contig\_16670 KAKLD-D-GENTEFTINSLEYSGIRIANGNCDADYGFSNLKLNDQGKLEGKNMNGNDIPG

SLOPH\_961\_Contig\_5050 KARSA-C-GKSTELTINSLEYSGVKISNITPNGGRSFANLKLNDEGKLEGKGKNDINVSG

SLOPH\_507\_Contig\_11452 SARLR-D-NKKIRFKINSLKYNGIRIDNTHNKTHHSFSKLKLNDKGKLEGKNKNGNDIPE

SLOPH\_926\_Contig\_4765 DAKLK-Y-GKRTKFTINNLEYNGIRIANKNCNNYYGFSNLKLNGEGKLKGKYKNGDDVPE

SLOPH\_786\_Contig\_2784 --------------------------INKDFNDSYAFSNLELNDQEKLEGTDKNGNYIPE

SLOPH\_2513\_Contig\_15665 KVKLKNK-QMKLKIKIKRLEFSGVDVVIRKSMEYVYFSKLEINKYGMIEGVDQNGNMITE

SLOPH\_988\_Contig\_5460 GAVFHED-DKQTRFTINNLEYNGIGIINKDFNDSY-------------------------

SLOPH\_1056\_Contig\_6587 KAKLNNK-QMTCDIKIKRLEFSGVDVVIRKGMSYVYFSKLGINKDGMIEGVDENGNTITE

SLOPH\_2587\_Contig\_9268 ----------------------------------------------------VNSNIILE

SLOPH\_635\_Contig\_17914 NVKIKNI---KAQCKIKTLEFSGVDVVVRKDMDYVYFSRLKINKDGIIGYGK--EKMITE

SLOPH\_880\_Contig\_4187 NAITNHSKLDGLILDILSFEYSGVEVFGKDVDRCIPLPNVESNTKGELEGKDISDNIIPE

SLOPH\_607\_Contig\_16670 NEILIYYLLFYANITIGDNNINTFIRILPSN-HPVYNNV--D-IYEVKPS-HLWVYLRVD

SLOPH\_961\_Contig\_5050 NEIMIVDILFYANITIDNNIINTFIDIMPED-YLSYNDIDND-IYEMKPY-QIWVYLRVD

SLOPH\_507\_Contig\_11452 NKIMISYILFYANITIGNNTINTFIHIIPQQ-YIIYNNVVNT-TFEMEIY-DLRVCLDVD

SLOPH\_926\_Contig\_4765 NKIVKYDMLFYANVTIGNKIINTFIRIIPEI-ILHIIILL---VILLKGNHIAYVFI---

SLOPH\_786\_Contig\_2784 NEILIDYILFYANITICNKVINTFIRIQIPN-QLIYNNTVNN-IFEVKPK-CLYIYLDLD

SLOPH\_2513\_Contig\_15665 NMLLTETITFKATIMIKDDEYETYLYFKYSD-QFKYNDAISS-EIPIDTR-YAIIYLPSK

SLOPH\_988\_Contig\_5460 ------------------------------------------------------------

SLOPH\_1056\_Contig\_6587 KELLTETITFKATI----------------------------------------------

SLOPH\_2587\_Contig\_9268 NKMMITNILFYANITINSTTINTVINVKLTE-NIAYNNIYND-IYKVKLG-YFYIYLDND

SLOPH\_635\_Contig\_17914 NXHQRKHMKKYTENHLKNHT-EKYMKKYTKN-HL-----KNH-TVK--------------

SLOPH\_880\_Contig\_4187 DEMYINTIIFKIKMKVNNHIYETYMLLIDMNKNYKYIDVTDNFTLTFKTF-VHHVFLPPK

SLOPH\_607\_Contig\_16670 SNGIHSGTHYDCTAKCYESEFFK---NCKLFTLNNKIISIKISNFKNAGYIYYPNINSQK

SLOPH\_961\_Contig\_5050 SNGGYSGKNYDDMAGLYKSKFFK---NYKLFTFDNKISSIEISNFKNAGYIYYPNINSQK

SLOPH\_507\_Contig\_11452 SNGVYSNKDYDYIAGSTYKKSSL---NYNSFILANKPSSIKISNFEKTGYIYYFNSRSEK

SLOPH\_926\_Contig\_4765 ------------------------------------------------------------

SLOPH\_786\_Contig\_2784 LNDVYYSRNYNYTDGLVTLSFFT---ECKQFTLDNKPNSIKISKFKNAGYIYYYNTKSNK

SLOPH\_2513\_Contig\_15665 IKNKYFPVEFDNIKGCYIDNLGNILKDKYIIEFTDKNWDMKISNIK--------------

SLOPH\_988\_Contig\_5460 ------------------------------------------------------------

SLOPH\_1056\_Contig\_6587 ------------------------------------------------------------

SLOPH\_2587\_Contig\_9268 SNNVYSSIDYDYMVGLNILKYFK---NFKVFTFDNKIISIEMSNFKNAGYXIMILMK---

SLOPH\_635\_Contig\_17914 -----YRKKYKKK-----------------------------------------------

SLOPH\_880\_Contig\_4187 IPNHNFYVRFDNSRGEYIDQNNI---KCYSYKLSFKCESMSISNIHKNGYIYFYDKPREK

SLOPH\_607\_Contig\_16670 FERITVKPETSSELDKKI------------------------------------------

SLOPH\_961\_Contig\_5050 FERIAVKPETSSERDING------------------------------------------

SLOPH\_507\_Contig\_11452 LERITLKPEATFNESEGERTLQPEAT-----------------------------FNESE

SLOPH\_926\_Contig\_4765 ------------------------------------------------------------

SLOPH\_786\_Contig\_2784 LRRITVKPETTSDRKDVDEPTNQETSSQRDVKEIINQEITPDKKEIEETKNQKTIFKRCK

SLOPH\_2513\_Contig\_15665 ------------------------------------------------------------

SLOPH\_988\_Contig\_5460 ------------------------------------------------------------

SLOPH\_1056\_Contig\_6587 ------------------------------------------------------------

SLOPH\_2587\_Contig\_9268 ------------------------------------------------------------

SLOPH\_635\_Contig\_17914 ------------------------------------------------------------

SLOPH\_880\_Contig\_4187 RQRFIPVQITQ-------EPLQNKFEM---------------------------------

SLOPH\_607\_Contig\_16670 -----------------------------------------------------------Q

SLOPH\_961\_Contig\_5050 -----------------------------------------------------------T

SLOPH\_507\_Contig\_11452 GERTL------------------------Q-----------------PEATFNENEGEGI

SLOPH\_926\_Contig\_4765 ------------------------------------------------------------

SLOPH\_786\_Contig\_2784 GNNNQEITSQRDVKEIINSEIISDKNKTDEPTKQETISDIKEIEETTKPETIPKRDVKEI

SLOPH\_2513\_Contig\_15665 ------------------------------------------------------------

SLOPH\_988\_Contig\_5460 ------------------------------------------------------------

SLOPH\_1056\_Contig\_6587 ------------------------------------------------------------

SLOPH\_2587\_Contig\_9268 ------------------------------------------------------------

SLOPH\_635\_Contig\_17914 ------------------------------------------------------------

SLOPH\_880\_Contig\_4187 ------------------------------------------------------------

SLOPH\_607\_Contig\_16670 DNVKRRLHGKKKRGNKARNHF----------------------

SLOPH\_961\_Contig\_5050 TKPETISDGKEKEVIRNLGSLLK--------------------

SLOPH\_507\_Contig\_11452 TKSETSSDGKRKEVASKNNIKIGNTMIILISIQIIFWLFIQIY

SLOPH\_926\_Contig\_4765 -------------------------------------------

SLOPH\_786\_Contig\_2784 TNSEIISDKKETEETKKNNIKIGNIIITLISVQIIFWLFMQIY

SLOPH\_2513\_Contig\_15665 -------------------------------------------

SLOPH\_988\_Contig\_5460 -------------------------------------------

SLOPH\_1056\_Contig\_6587 -------------------------------------------

SLOPH\_2587\_Contig\_9268 -------------------------------------------

SLOPH\_635\_Contig\_17914 -------------------------------------------

SLOPH\_880\_Contig\_4187 -------------------------KHTMILPSMIIWVIMLLY

***S. lophii* gene family 3:**

\*SLOPH\_1121\_Contig\_782 --------MIFN----KFVYLMSLNYIFLSRIVCATYE----EYEFPEEKIENVKNIWNN

SLOPH\_1122\_Contig\_782 ----------------------MRLYLFLSKILCAYKV----YEEYEENNIENIKEIWDD

SLOPH\_1080\_Contig\_7159 MSLNALYIKLFKKLSMYYLYLFQINIIFL-LIKCSDNETGTNDKSLSFEMIENVKNIWNN

SLOPH\_652\_Contig\_1894 MSLKYI-NTGENTISMYYFYILKLL----TISRCSSLNGEYSNKINYDEKIDYLKNLWNE

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SLOPH\_1121\_Contig\_782 DLQTQTYLTYEGDNFWLNDTEFMVDGIGISLTFDHNE--LFEICKSTNQNDIKRSFDDMN

SLOPH\_1122\_Contig\_782 NTHIITYISCENGEFWLNDTEFIRKGVALSID--YKE--FFKNSKYIDKESLVKSFNDMI

SLOPH\_1080\_Contig\_7159 DAITTTNLFYESNNFWLYDTEFNREEFGINIELEDSY--Y-DISD-KSKDEIENVLKYAK

SLOPH\_652\_Contig\_1894 NEATTTYLSYEGNDFWLNETGYNRENIFYDINLREINAYFKNECK----NILNIKIQLIE

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SLOPH\_1121\_Contig\_782 NYKNEILNSDNIIDLVEALTNYNVFRIEYLKYVVNEFNNES-------NLKKCAFKKAGT

SLOPH\_1122\_Contig\_782 YWKNCILSSDNILELGEALINYNVFRIEYLEYIINELERLK-------YAKENEFNKNRA

SLOPH\_1080\_Contig\_7159 TLEDNIFKSKDIIQLLESLCEYNVYRIKYYELLVQAHGDIINDFYKNLNAKSSSIHRENP

SLOPH\_652\_Contig\_1894 EQQDKFMKSEDLFELFENVYEYNESRLKYLDEVLEFYKNDQ--------ENGIEFTYDNL

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SLOPH\_1121\_Contig\_782 KKLTEMGGYYYLNIDEQKINLNNMSYGEEEYKLSDIARCNLYKSEIMRFKLAGEYPKIRI

SLOPH\_1122\_Contig\_782 NGIYENGKSYYFYKTDKFGKLKHISGCEYEEKNLAIVKYNFFRSKIMSSKLAGEYPKIKL

SLOPH\_1080\_Contig\_7159 E-----RGY----NTQNINGESSESYKKKNSKIFYITKYNLFRSKNMQLKLVAEYPKVKP

SLOPH\_652\_Contig\_1894 YTYSEML------GKTQISVIAEQTYEEKQTVTVNILRFNLYRSKMMQETLINELDNLKT

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SLOPH\_1121\_Contig\_782 SSMQIIPHITSTFNNYMIAFTHCDEYIGYLKELRECYGSIRRNKLSTPEEKIYSLFWFIL

SLOPH\_1122\_Contig\_782 LSIQNIPHVAYQFNNYVD-----SNYEEYKKETTNCLEIIKNSDLTTPAEWFYVNFEHSF

SLOPH\_1080\_Contig\_7159 SSMEHIPCVASISGQTANAYDNLLDSKWMVDAMNGCISYLSNNKFCTDIEKMYAKFDAVF

SLOPH\_652\_Contig\_1894 THGDNQQCMKFINYNIKEIFLKYSKNEWPEEAEMICIWNIR--AYPKPPTKTLGFFETKY

: : : . . \* : . \*

SLOPH\_1121\_Contig\_782 CDVEQVLKDALYGKLIDRKISK-TIDWEKLMENINGDLSVDDVKVYIYLSERFRNLALHE

SLOPH\_1122\_Contig\_782 KIIERTLKNLKHGKPFKKEIYE-KFNWDKLLNDTGGNFSVTDIKLYIYLCKYLNLISMDE

SLOPH\_1080\_Contig\_7159 LELEQILKNVSQGIPETTTNDQHHLNLSLICIELDNGTTENVLLLYVRINKYLRKLAKIE

SLOPH\_652\_Contig\_1894 RTIEKILIQRKNNIPIVNRYLSGSYNIEEICENEKNGLSELEVTLYIFLCEIIKEIAMLE

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SLOPH\_1121\_Contig\_782 RGYFSKKGDQDLLDMVMEKFKFFSKYLVVGKDISYKSLLKFCEDFTFKTFNYENYQIFIQ

SLOPH\_1122\_Contig\_782 RLYCLKKTWYDLYMMAVKKADFFSEYFAVGKDASYESVLEFCNDFSLKNFNSEKYQIFLK

SLOPH\_1080\_Contig\_7159 EQLYKYNENKDLRKIAIEKSNFFDNNMVLCENCDYKNILQLYLDFSVRKFNYAKYQVIPK

SLOPH\_652\_Contig\_1894 QEHYLLEGKMDLFEMAKSKRELFTKNIILGNGANYKDYLEFCNDFSFGKCDDTKYQKFEI

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SLOPH\_1121\_Contig\_782 KDYIK-----

SLOPH\_1122\_Contig\_782 STYIMRN---

SLOPH\_1080\_Contig\_7159 NEIHRMVINY

SLOPH\_652\_Contig\_1894 EKMLMYF---

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***S. lophii* gene family 4:**

SLOPH\_962\_Contig\_5060 MIFAPLLFSTVKSLSQELVTDIASNIANSEKMKTDNPLSNTSLLLMQIQLLVVESATDYM

\*SLOPH\_2557\_Contig\_3146 MLFFILFLLSIKSISEEVYSDIYYNMENIEKMESQNPLSNENILLMEIQLLCAQSDYYRY

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SLOPH\_962\_Contig\_5060 ARKKLVDLRENILALETRDVDVEKIQMTLN--SSNDIITAKTTARIFITTLSTCFDKFKA

SLOPH\_2557\_Contig\_3146 IGDLKKTLLEFIQNLESSKVDTDRIIKYIENLDDPDPIVSRTATKAMIVTLKEAYDKFKA

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SLOPH\_962\_Contig\_5060 SGEILNDEDKNQLKNLLKEYTEIIEKSGSKMEAPEEKDNVMRLVKLLGEKELEEKMESSF

SLOPH\_2557\_Contig\_3146 TKQELSLEDKRQLINILMDWSIFLKETGQKIYIPKEKDALVAVLQLCDNAELKDKVNDVI

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SLOPH\_962\_Contig\_5060 K

SLOPH\_2557\_Contig\_3146 E

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