

SUPPLEMENTARY FILE S-5.

(Sayari et al - Ceratocystidaceae Nonribosomal peptide synthetase gene clusters)

Top 10 BLASTp hits for each NRPS sequences. BLASTp search was done against the non-redundant protein sequences in the National Centre for Biotechnology Information database (NCBI; <http://blast.ncbi.nlm.nih.gov/>), and the top ten hits are indicated with species where they are found, E-value, percent sequence identity and coverage.

A) *Ceratocystis* monomodular NRPS

<i>Ceratocystis</i>				
<i>Ceratocystis</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	88	51	0
NRPS	<i>Colletotrichum higginsianum</i>	87	50	0
NRPS	<i>Colletotrichum higginsianum</i>	87	51	0
NRPS	<i>Colletotrichum graminicola</i>	86	51	0
NRPS	<i>Colletotrichum fioriniae</i>	86	51	0
NRPS	<i>Verticillium dahliae</i>	90	49	0
NRPS	<i>Verticillium dahliae</i>	86	51	0
NRPS	<i>Verticillium dahliae</i>	86	51	0
NRPS	<i>Metarhizium majus</i>	83	51	0
NRPS	<i>Metarhizium robertsii</i>	83	51	0

B) *Ceratocystis* multimodular-modular NRPS

<i>Ceratocystis</i>				
<i>Ceratocystis</i> multimodular-modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Scedosporium apiospermum</i>	99	51	0
NRPS	<i>Colletotrichum higginsianum</i>	99	49	0
NRPS	<i>Colletotrichum graminicola</i>	99	49	0
NRPS	<i>Nectria haematococca</i>	99	49	0
NRPS	<i>Colletotrichum gloeosporioides</i>	99	49	0
NRPS	<i>Fusarium graminearum</i>	99	48	0
NRPS	<i>Trichoderma virens</i>	99	48	0
NRPS	<i>Fusarium pseudograminearum</i>	99	48	0
NRPS	<i>Metarhizium robertsii</i>	99	48	0
NRPS	<i>Metarhizium brunneum</i>	99	48	0

C) *Huntiella* monomodular NRPS

<i>Huntiella</i>				
<i>Huntiella</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	90	54	0
NRPS	<i>Colletotrichum higginsianum</i>	87	55	0
NRPS	<i>Colletotrichum higginsianum</i>	86	55	0

NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Verticillium dahliae</i>	83	56	0
NRPS	<i>Verticillium dahliae</i>	87	55	0
NRPS	<i>Colletotrichum graminicola</i>	88	54	0
NRPS	<i>Colletotrichum fioriniae</i>	83	54	0
NRPS	<i>Metarhizium majus</i>	83	54	0
NRPS	<i>Metarhizium brunneum</i>	83	54	0

D) *Huntiella* multitmodular-modular NRPS

<i>Huntiella</i>				
<i>Huntiella</i> multitmodular-modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Nectria haematococca</i>	99	47	0
NRPS	<i>Trichoderma reesei</i>	98	47	0
NRPS	<i>Trichoderma virens</i>	99	47	0
NRPS	<i>Trichoderma reesei</i>	98	47	0
NRPS	<i>Fusarium graminearum</i>	99	47	0
NRPS	<i>Thielavia terrestris</i>	99	47	0
NRPS	<i>Colletotrichum higginsianum</i>	99	47	0
NRPS	<i>Colletotrichum gloeosporioides</i>	99	47	0
NRPS	<i>Fusarium pseudograminearum</i>	99	47	0
NRPS	<i>Trichoderma atroviride</i>	99	47	0

E) *Thielaviopsis* monomodular NRPS

<i>Thielaviopsis</i>				
<i>Thielaviopsis</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Colletotrichum graminicola</i>	86	55	0
NRPS	<i>Colletotrichum fioriniae</i>	86	55	0
NRPS	<i>Metarhizium brunneum</i>	83	56	0
NRPS	<i>Metarhizium majus</i>	83	55	0

F) *Thielaviopsis* multitmodular-modular NRPS

<i>Thielaviopsis</i>				
<i>Thielaviopsis</i> multitmodular-modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Fusarium oxysporum</i>	99	39	0
NRPS	<i>Colletotrichum higginsianum</i>	99	50	0
NRPS	<i>Nectria haematococca</i>	99	50	0
NRPS	<i>Colletotrichum graminicola</i>	99	50	0

NRPS	<i>Fusarium graminearum</i>	99	50	0
NRPS	<i>Colletotrichum gloeosporioides</i>	99	50	0
NRPS	<i>Trichoderma virens</i>	99	49	0
NRPS	<i>Fusarium pseudograminearum</i>	99	50	0
NRPS	<i>Trichoderma reesei</i>	99	49	0
NRPS	<i>Trichoderma reesei</i>	99	49	0

G) *Endoconidiophora* monomodular NRPS

<i>Endoconidiophora</i>				
<i>Endoconidiophora</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Verticillium dahliae</i>	86	54	0
NRPS	<i>Verticillium dahliae</i>	86	54	0
NRPS	<i>Colletotrichum graminicola</i>	86	55	0
NRPS	<i>Colletotrichum fioriniae</i>	86	55	0
NRPS	<i>Metarhizium majus</i>	83	54	0
NRPS	<i>Metarhizium brunneum</i>	83	54	0

H) *Endoconidiophora* multimodular-modular-NRPS

<i>Endoconidiophora</i>				
<i>Endoconidiophora</i> multimodular-modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Scedosporium apiospermum</i>	99	59	0
NRPS	<i>Nectria haematococca</i>	99	58	0
NRPS	<i>Trichoderma virens</i>	99	58	0
NRPS	<i>Trichoderma raesie</i>	99	58	0
NRPS	<i>Fusarium graminearum</i>	99	58	0
NRPS	<i>Fusarium pseudograminearum</i>	99	58	0
NRPS	<i>Trichoderma reesei</i>	97	58	0
NRPS	<i>Colletotrichum graminicola</i>	98	58	0
NRPS	<i>Metarhizium robertsii</i>	98	57	0
NRPS	<i>Metarhizium brunneum</i>	99	57	0

I) *Davidsoniella* monomodular NRPS

<i>Davidsoniella</i>				
<i>Davidsoniella</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	85	57	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0

NRPS	<i>Colletotrichum graminicola</i>	86	56	0
NRPS	<i>Colletotrichum fioriniae</i>	87	55	0
NRPS	<i>Verticillium dahliae</i>	92	52	0
NRPS	<i>Verticillium dahliae</i>	87	54	0
NRPS	<i>Verticillium dahliae</i>	87	54	0
NRPS	<i>Metarhizium brunneum</i>	83	55	0
NRPS	<i>Metarhizium majus</i>	83	54	0

J) *Davidsoniella* multitmodular-modular NRPS

<i>Davidsoniella</i>				
<i>Davidsoniella</i> multitmodular- modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Nectria haematococca</i>	99	58	0
NRPS	<i>Scedosporium apiospermum</i>	98	59	0
NRPS	<i>Trichoderma reesei</i>	99	58	0
NRPS	<i>Trichoderma virens</i>	99	59	0
NRPS	<i>Trichoderma reesei</i>	99	58	0
NRPS	<i>Fusarium pseudograminearum</i>	99	58	0
NRPS	<i>Fusarium graminearum</i>	99	58	0
NRPS	<i>Colletotrichum higginsianum</i>	99	58	0
NRPS	<i>Metarhizium robertsii</i>	99	57	0
NRPS	<i>Metarhizium acridum</i>	99	57	0

N) *Ambrosiella xyloboi* PCDO01000001, NRPS

<i>Ambrosiella xyloboi</i>				
<i>Knoxdaviesia</i> multitmodular- modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	86	55	0
NRPS	<i>Verticillium dahliae</i>	91	51	0
NRPS	<i>Colletotrichum obiculare</i>	86	55	0
NRPS	<i>Colletotrichum gloeosporioides</i>	86	55	0
NRPS	<i>Colletotrichum gloeosporioides</i>	86	55	0
NRPS	<i>Verticillium dahliae</i>	91	51	0
NRPS	<i>Verticillium dahliae</i>	91	51	0
NRPS	<i>Verticillium dahliae</i>	91	51	0
NRPS	<i>Colletotrichum chlorophyti</i>	86	54	0
NRPS	<i>Verticillium longisporum</i>	91	51	0

O) *Ambrosiella xyloboi* PCDO01000004, NRPS

<i>Ambrosiella xyloboi</i>				
<i>Knoxdaviesia</i> multitmodular- modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Scedosporium apiospermum</i>	99	38	0

NRPS	<i>Scedosporium apiospermum</i>	99	38	0
NRPS	<i>Neonectria ditissima</i>	99	38	0
NRPS	<i>Trichoderma citrinoviride</i>	99	38	0
NRPS	<i>Nectria haematococca</i>	99	38	0
NRPS	<i>Colletotrichum tofieldia</i>	99	38	0
NRPS	<i>Purpureocillium lilacinum</i>	99	38	0
NRPS	<i>Colletotrichum sublinecola</i>	99	37	0
NRPS	<i>Tolypocladium paradoxum</i>	99	38	0
NRPS	<i>Colletotrichum incanum</i>	99	38	0

P) *Davidsoniella australis* contig0000143 monomodular NRPS

<i>Davidsoniella australis</i>				
<i>Davidsoniella</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Metarhizium album</i>	99	38	0
NRPS	<i>Nectria haematococca</i>	99	39	0
NRPS	<i>Fusarium avenaceum</i>	99	39	0
NRPS	<i>Pochonia chlamydosporia</i>	99	38	0
NRPS	<i>Hirsutella minnesotensis</i>	99	38	0
NRPS	<i>Metarhizium album</i>	99	38	0
NRPS	<i>Cordyceps confragosa</i>	98	38	0
NRPS	<i>Cordyceps confragosa</i>	99	37	0
NRPS	<i>Ophiocordyceps camponoti-rufipedis</i>	99	38	0
NRPS	<i>Scedosporium apiospermum</i>	97	39	0

Q) *Davidsoniella australis* contig0000001 multimodular-modular NRPS

<i>Davidsoniella australis</i>				
<i>Davidsoniella</i> multimodular-modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum orbiculare</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Colletotrichum gloeosporioides</i>	86	56	0
NRPS	<i>Colletotrichum gloeosporioides</i>	86	56	0
NRPS	<i>Colletotrichum orbiculare</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Colletotrichum higginsianum</i>	86	56	0
NRPS	<i>Colletotricium chlorophyti</i>	86	55	0
NRPS	<i>Colletotrichum tofieldia</i>	86	55	0
NRPS	<i>Colletotricium incanum</i>	86	55	0

R) *Davidsoniella neocaledoniae* contig0000006 monomodular NRPS

<i>Davidsoniella neocaledoniae</i>				
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<i>Davidsoniella</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0
NRPS	<i>Fusarium oxysporum</i>	99	39	0
NRPS	<i>Fusarium oxysporum</i>	99	40	0

S) *Davidsoniella neocaledoniae* contig00001989 multitmodular-modular NRPS

<i>Davidsoniella neocaledoniae</i>				
<i>Davidsoniella</i> multitmodular- modular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Thelaviopsis punctulata</i>	98	75	0
NRPS	<i>Cerarocystis platani</i>	97	62	0
NRPS	<i>Ceratocystis fimbriata</i>	98	56	0
NRPS	<i>Colletotrichum gloeosporioides</i>	94	51	0
NRPS	<i>Colletotrichum gloeosporioides</i>	94	51	0
NRPS	<i>Colletotrichum obiculare</i>	96	50	0
NRPS	<i>Colletotrichum higginsianum</i>	95	50	0
NRPS	<i>Colletotrichum higginsianum</i>	94	51	0
NRPS	<i>Colletotrichum tofieldia</i>	95	50	0
NRPS	<i>Colletotrichum chlorophyti</i>	95	50	0

T) *Berkeleyomyces basicola* Contig 12, monomodular NRPS

<i>Thielaviopsis basicola</i>				
<i>Thielaviopsis basicola</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Scedosporium apiospermum</i>	99	41	0
NRPS	<i>Lomentospora prolificans</i>	99	41	0
NRPS	<i>Neonectria ditissima</i>	99	41	0
NRPS	<i>Nectria haematococca</i>	99	41	0
NRPS	<i>Colletotrichum sublineola</i>	99	40	0
NRPS	<i>Colletotrichum tofieldia</i>	99	40	0
NRPS	<i>Trichoderma reesi</i>	99	40	0

NRPS	<i>Fusarium fujikuroi</i>	99	40	0
NRPS	<i>Colletotrichum incanum</i>	99	40	0
NRPS	<i>Fusarium fujikuroi</i>	99	40	0

T) *Berkeleyomyces basicola* Contig 8, multimodular-modular NRPS

<i>Thielaviopsis basicola</i>				
<i>Thielaviopsis basicola</i> monomodular NRPS	Species of BLAST hit	% coverage	% identity	E-value
NRPS	<i>Colletotrichum gloeosporioides</i>	86	54	0
NRPS	<i>Colletotrichum gloeosporioides</i>	86	54	0
NRPS	<i>Colletotrichum tofieldia</i>	86	54	0
NRPS	<i>Colletotrichum chlorophyti</i>	86	54	0
NRPS	<i>Colletotrichum orbiculare</i>	86	54	0
NRPS	<i>Colletotrichum incanum</i>	86	54	0
NRPS	<i>Colletotrichum incanum</i>	86	54	0
NRPS	<i>Colletotrichum higginsianum</i>	86	54	0
NRPS	<i>Colletotrichum higginsianum</i>	86	54	0
NRPS	<i>Colletotrichum sublineola</i>	86	54	0