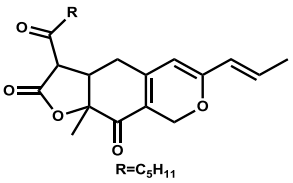
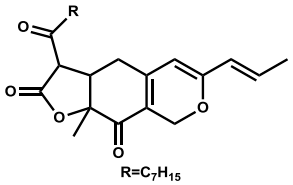
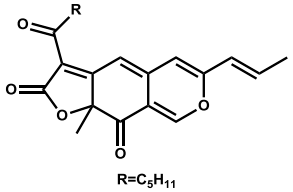
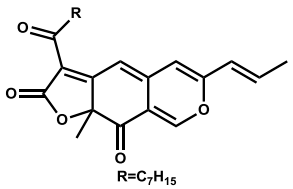
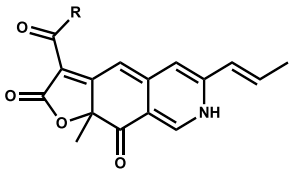
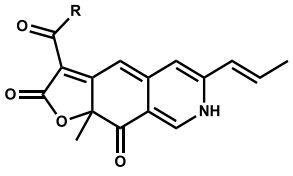
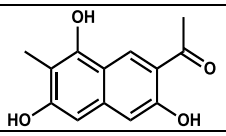
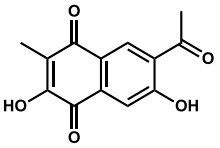
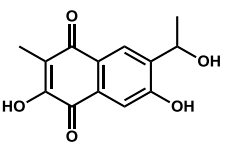
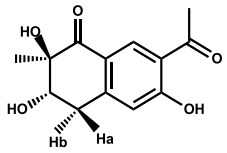
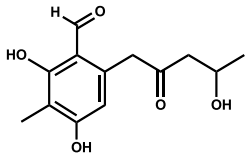
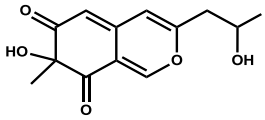
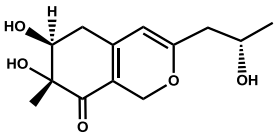
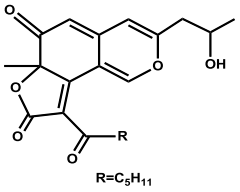
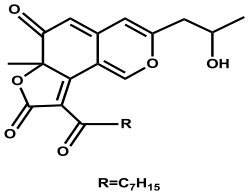
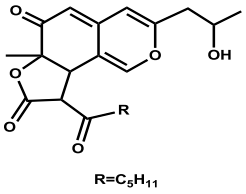
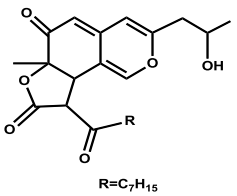
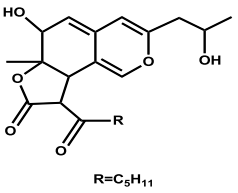
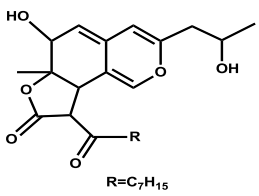
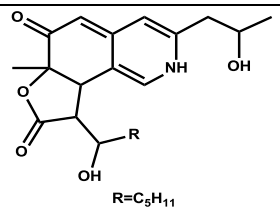
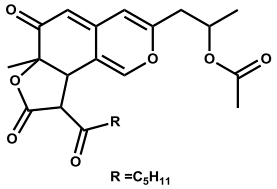
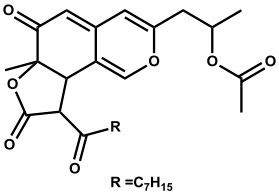
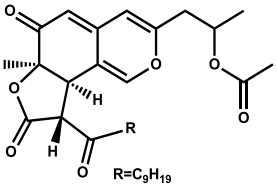
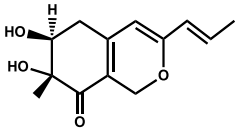
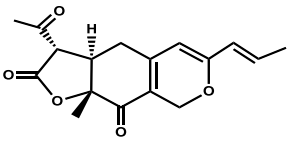
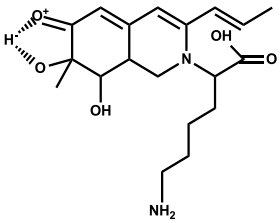
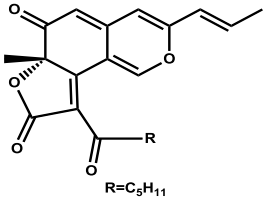
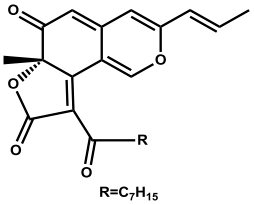
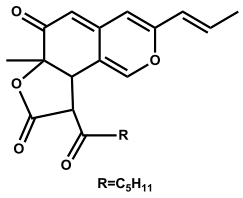
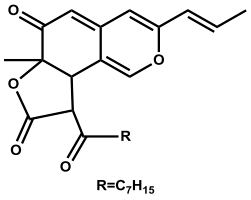
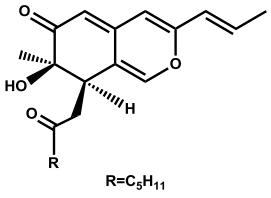
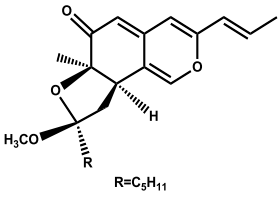
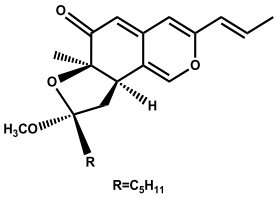
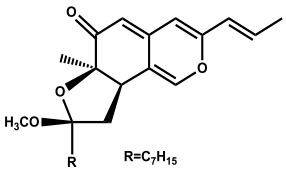
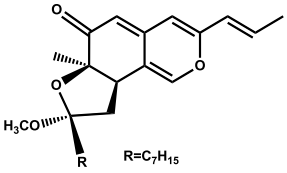
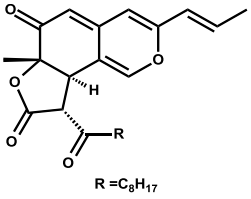
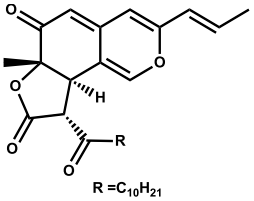
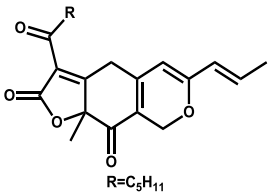
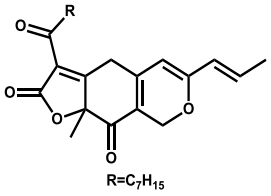
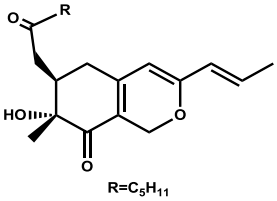
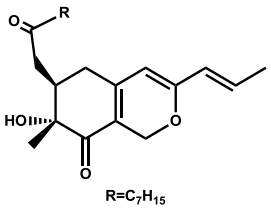
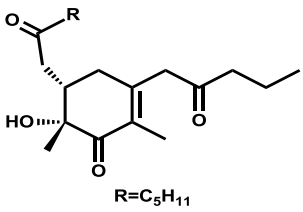
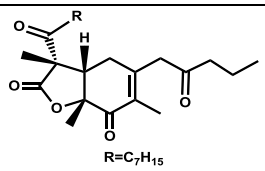
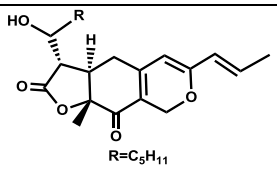
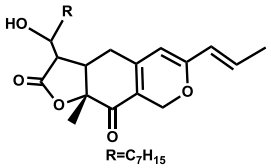
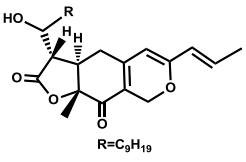
ESI Table 1. MonAzPs congeners described in the literatures

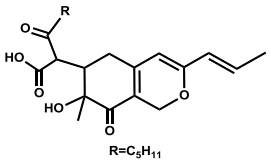
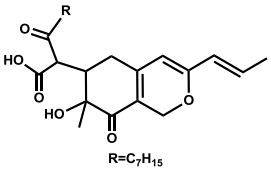
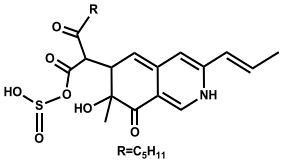
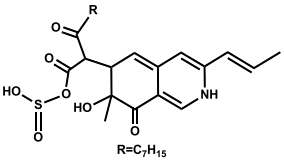
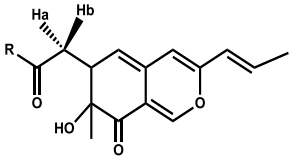
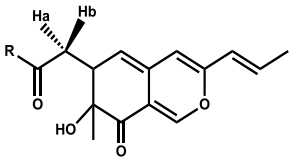
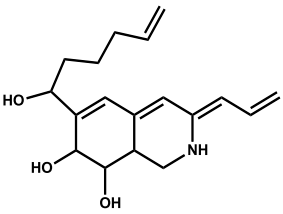
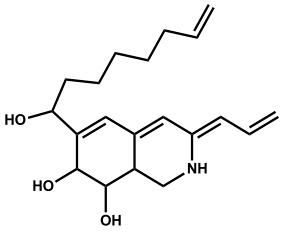
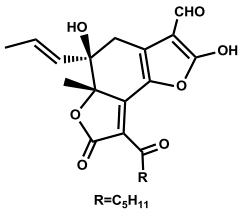
No.	Stage	Name	Color	MF*	MW*	Structure	Producer(s)	Ref.*
1	IV	Monascin	Yellow	$C_{21}H_{26}O_5$	358		*M. purpureus*	1, 2
2		Ankaflavin		$C_{23}H_{30}O_5$	386		*M. anka*	3
3		Rubropunctatin	Orange	$C_{21}H_{22}O_5$	354		*M. purpureus*	2
4		Monascorubrin		$C_{23}H_{26}O_5$	382			3
5		Rubropunctamine	Red	$C_{21}H_{23}NO_4$	353		*M. anka*	4, 5
6		Monascorubramine		$C_{23}H_{27}NO_4$	381			
7	I	MA-3	Yellow	$C_{13}H_{12}O_4$	232		*M. ruber* M7 and Δ*mppA* mutant of *M. purpureus*	6-9
8		MA-4		$C_{13}H_{10}O_5$	246			
9		MA-2		$C_{13}H_{12}O_5$	248			

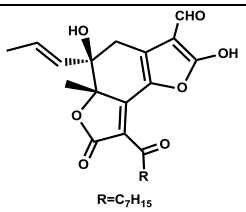
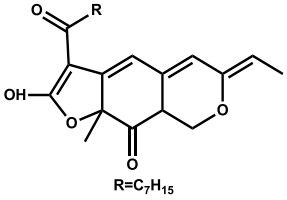
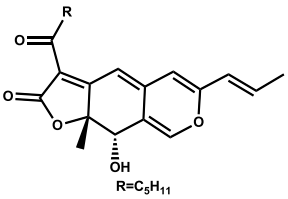
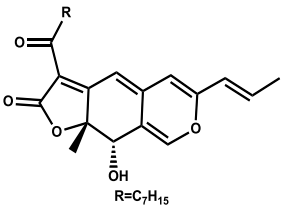
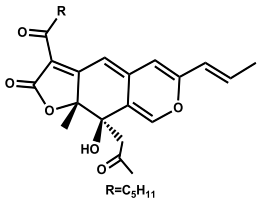
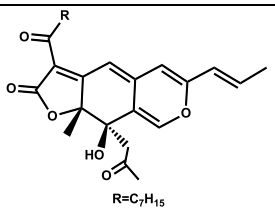
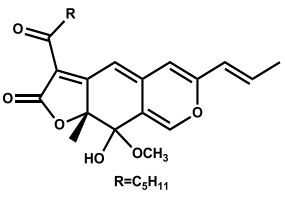
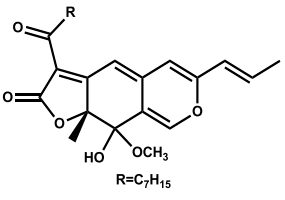
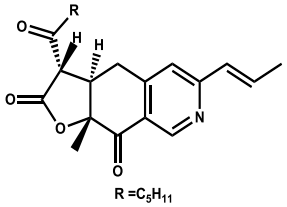
10		MA-1 (Monaspurpurone)		$C_{13}H_{14}O_5$	250		*M. purpureus* BCRC 38113	7
11		M7PKS-1		$C_{13}H_{16}O_5$	252		*M. ruber* M7	10
12	II	Unnamed		$C_{13}H_{14}O_5$	250			6
13		Monascusone A		$C_{13}H_{18}O_5$	254		*M. kaoliang* KB20M10.2	11
14	III	Unnamed		$C_{21}H_{24}O_6$	372		*M. ruber* M7	6
15				$C_{23}H_{28}O_6$	400			
16		Monasfluol A		$C_{21}H_{26}O_6$	374		*M. purpureus* IB1	12
17		Monasfluol B		$C_{23}H_{30}O_6$	402		Δ*mpp7* mutant of *M. purpuresus*	13
18		Unnamed		$C_{21}H_{28}O_6$	376		*M. ruber* M7	6
19				$C_{23}H_{32}O_6$	404			

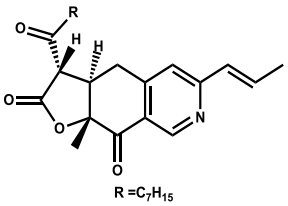
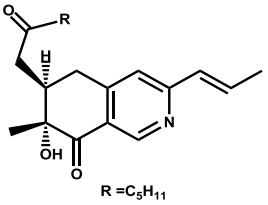
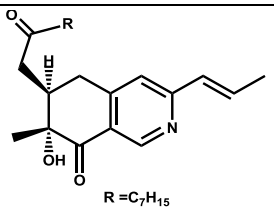
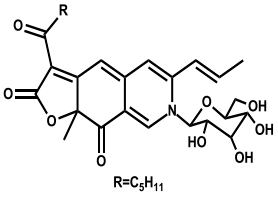
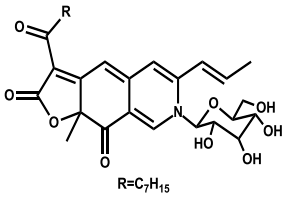
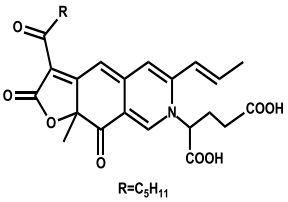
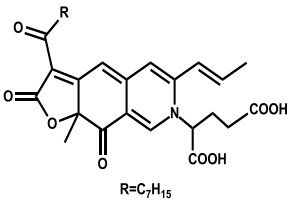
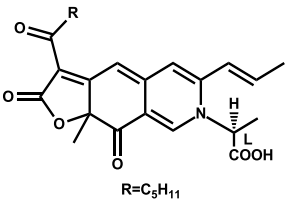
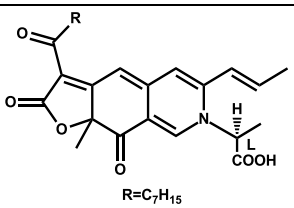
20			Red	$C_{21}H_{29}NO_5$	375		*M. purpureus* NFCCI 1756	14
21		Acetyl-monasfluol A	Yellow	$C_{23}H_{28}O_7$	416		*M. ruber* M7	6
22		Acetyl-monasfluol B		$C_{25}H_{32}O_7$	444			
23		Monascuskaolin		$C_{27}H_{36}O_7$	472		*M. kaoliang* BCRC 31506	15
24		FK17-P_2B_2		$C_{13}H_{16}O_4$	236		*M. kaoliang* KB20M10.2	11
25		Monascusone B		$C_{17}H_{18}O_5$	302			
26		Unnamed	Red	$C_{19}H_{28}N_2O_5$	364		*M. ruber* 102w	16
27		MC-2	Yellow	$C_{21}H_{22}O_5$	354		*mppc* mutant of *M. purpureus* KACC	8
28		MC-4		$C_{23}H_{26}O_5$	382			

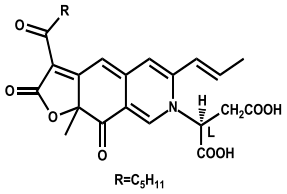
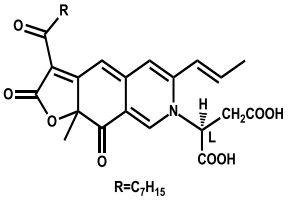
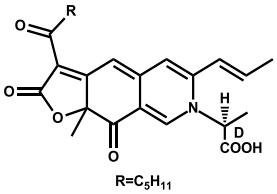
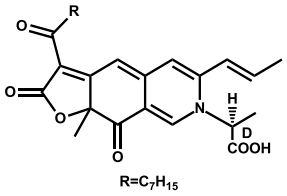
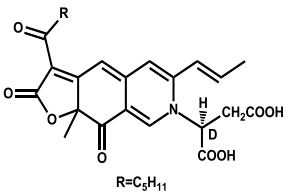
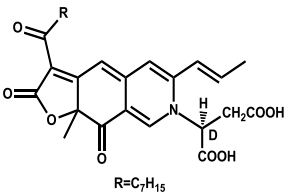
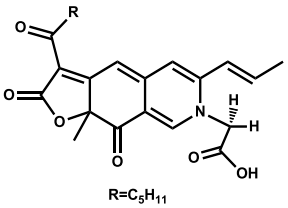
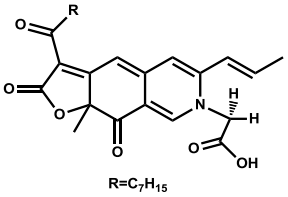
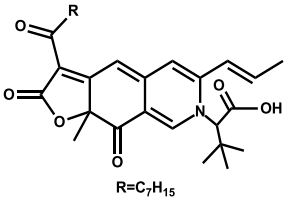
29		Monasfluore A		$C_{21}H_{24}O_5$	356		*Monascus* sp. AS3.4444	17
30		Monasfluore B		$C_{23}H_{28}O_5$	384			
31		Monapurone A		$C_{20}H_{26}O_4$	330		*M. purpureus* B0708	18
32		Monapurone B		$C_{21}H_{28}O_4$	344			
33		Monapurone C		$C_{21}H_{28}O_4$	344			
34		Monapurfluore A		$C_{23}H_{32}O_4$	372		*M. purpureus* NTU 568	19
35		Monapurfluore B		$C_{23}H_{32}O_4$	372			
36		Monascuskaodione		$C_{24}H_{30}O_5$	398		*M. kaoliang*	20
37		Monascuspurone		$C_{26}H_{34}O_5$	426		*M. ruber*	21

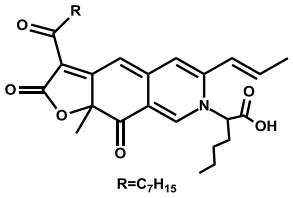
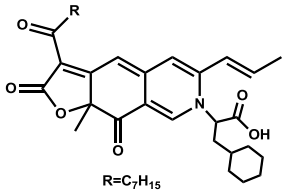
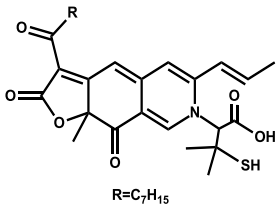
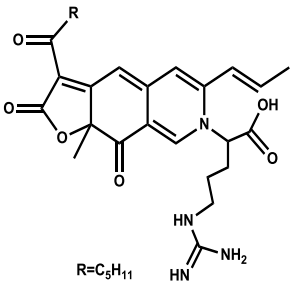
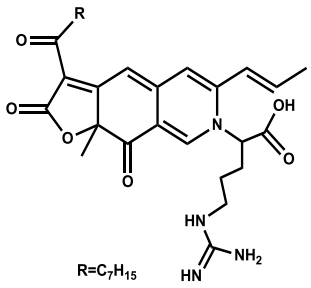
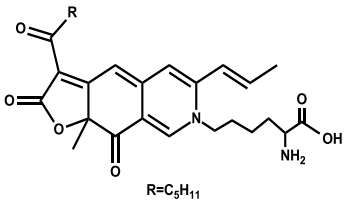
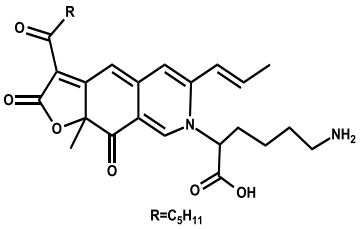
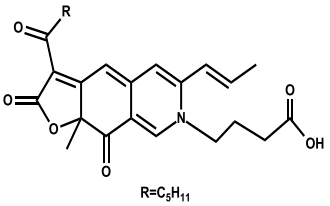
38	IV	Unnamed		$C_{21}H_{24}O_5$	356		*M. ruber* M7	6
39				$C_{23}H_{28}O_5$	384			
40		Monaphilone B		$C_{20}H_{28}O_4$	332		*M. purpureus* NTU 568	22
41		Monaphilone A		$C_{22}H_{32}O_4$	360			
42		Monaphilone C		$C_{20}H_{32}O_4$	336			
43		Purpureusone		$C_{23}H_{34}O_5$	390		*M. purpureus* BCRC 38038	23
44		Monascuspiloin		$C_{21}H_{28}O_5$	360		*M. pilosus* M93	24, 25
45		Monapilosus-azaphilone		$C_{23}H_{32}O_5$	388		*M. pilosus*	26
46		Monascusazaphilol		$C_{25}H_{36}O_5$	416		*M. pilosus* BCRC 38072	27

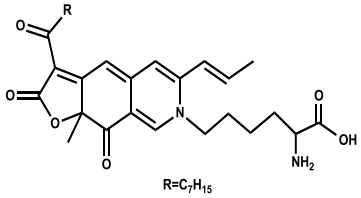
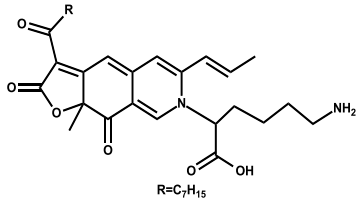
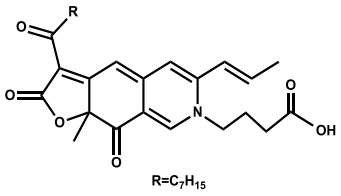
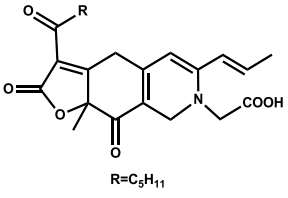
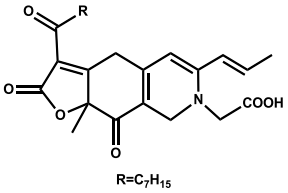
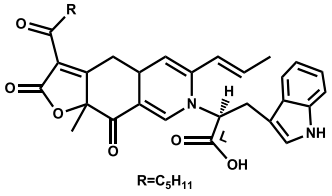
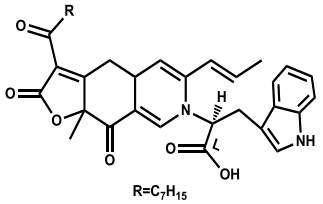
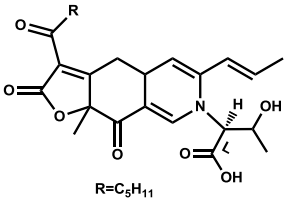
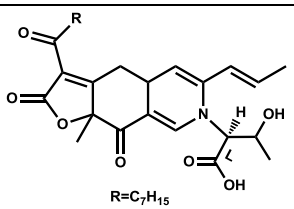
47		Unnamed		$C_{21}H_{28}NO_6$	376		Red yeast rice produced by uncharacterized *Monascus* spp.	28
48				$C_{23}H_{32}NO_6$	404			
49				$C_{21}H_{27}NO_7S$	437			
50				$C_{23}H_{31}NO_7S$	465			
51		Monarubrin		$C_{20}H_{26}O_4$	330		*M. ruber* ATCC 96218	29
52		Rubropunctin		$C_{22}H_{30}O_4$	358			
53		Unnamed	Red	$C_{18}H_{25}NO_3$	303		*M. ruber*	30
54				$C_{20}H_{29}NO_3$	331			
55		Xanthomonasin A	Yellow	$C_{21}H_{24}O_7$	388		*M. anka* U-1	31

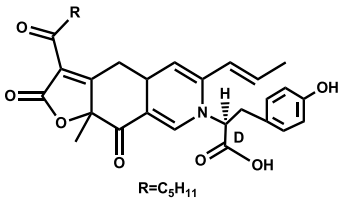
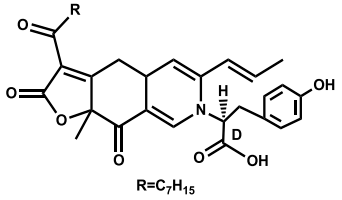
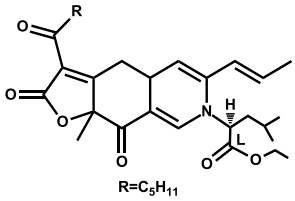
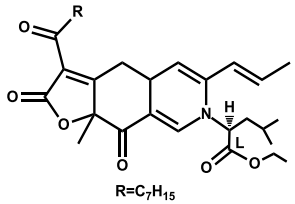
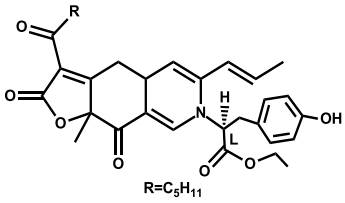
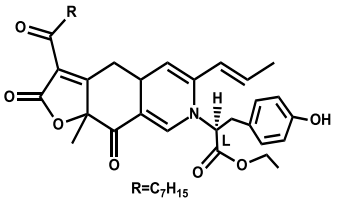
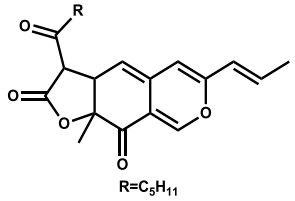
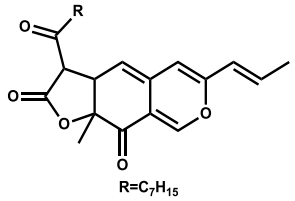
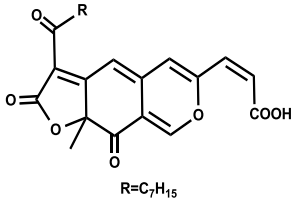
56		Xanthomonasin B		$C_{23}H_{28}O_7$	416			
57		Yellow II		$C_{22}H_{28}O_5$	372		*M.* sp. KB 10	32
58		Monapilol B	Orange	$C_{21}H_{24}O_5$	356		*M. purpureus* NTU 568	33
59		Monapilol A		$C_{23}H_{28}O_5$	384			
60		Monapilol D		$C_{24}H_{28}O_6$	412			
61		Monapilol C		$C_{26}H_{32}O_6$	440			
62		Monasphilol-methoxy A		$C_{22}H_{26}O_6$	386		*M. aurantiacus* AS3.4384	34
63		Monasphilol-methoxy B		$C_{24}H_{30}O_6$	414			
64		Monascopyridine A	Red	$C_{21}H_{25}NO_4$	355		*M. purpureus* DSM1379	35

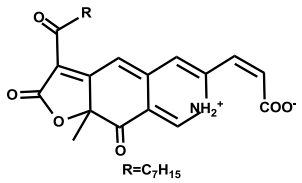
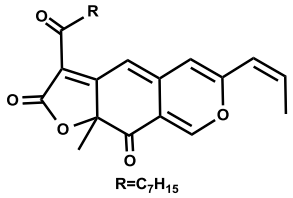
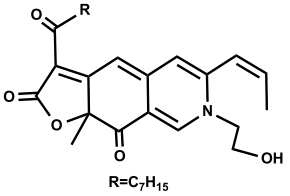
65		Monascopyridine B		$C_{23}H_{29}NO_4$	383			
66		Monascopyridine C		$C_{20}H_{27}NO_3$	315		*M. purpureus* DSM 1603	36
67		Monascopyridine D		$C_{22}H_{31}NO_3$	343			
68		*N*-glucosyl-rubropunctamine		$C_{27}H_{33}NO_9$	515		*M. ruber* ATCC 96218	37
69		*N*-glucosyl-monascorubramine		$C_{29}H_{37}NO_9$	543			
70		*N*-glutaryl-rubropunctamine		$C_{26}H_{29}NO_8$	483		*M*. sp. TTWMB 6093	38
71		*N*-glutaryl-monascorubramine		$C_{28}H_{33}NO_8$	511			
72		Rubropunctatin L-alanine		$C_{24}H_{27}NO_6$	425		Red yeast rice produced by uncharacterized *Monascus* spp.	39
73		Monascorubrin L-alanine		$C_{26}H_{31}NO_6$	453			

74		Rubropunctatin L-aspartate		$C_{25}H_{27}NO_8$	469			
75		Monascorubrin L-aspartate		$C_{27}H_{31}NO_8$	497			
76		Rubropunctatin D-alanine		$C_{24}H_{27}NO_6$	425			
77		Monascorubrin D-alanine		$C_{26}H_{31}NO_6$	453			
78		Rubropunctatin D-aspartate		$C_{25}H_{27}NO_8$	469			
79		Monascorubrin D-aspartate		$C_{27}H_{31}NO_8$	497			
80		Rubropunctatin glycine		$C_{23}H_{25}NO_6$	411		*M. purpureus* CCM 8152 and *M.* sp. KCCM 10093	40, 41
81		Monascorubrin glycine		$C_{25}H_{29}NO_6$	439			
82		L-T-Bg		$C_{29}H_{37}NO_6$	495		*M.* sp. J101	42

83		H-Nle		$C_{29}H_{37}NO_6$	495			
84		H-Cha		$C_{32}H_{41}NO_6$	535			
85		H-Pen		$C_{28}H_{35}NO_6S$	513			
86		Unnamed		$C_{27}H_{34}N_4O_6$	510		*M. ruber* 102w	16
87				$C_{29}H_{38}N_4O_6$	538			
88		*N*-Lys-rubropunctatin		$C_{27}H_{34}N_2O_6$	482		*M. ruber* M7	6
89		*N*-Lys-rubropunctatin		$C_{27}H_{34}N_2O_6$	482			
90		*N*-GABA-rubropunctatin		$C_{25}H_{29}NO_6$	439			

91		*N*-Lys-monascorubrin		$C_{29}H_{38}N_2O_6$	510			
92		*N*-Lys-monascorubrin		$C_{29}H_{38}N_2O_6$	510			
93		*N*-GABA-monascorubrin		$C_{27}H_{33}NO_6$	467			
94		Glycyl-rubropunctatin		$C_{23}H_{27}NO_6$	413		*M. anka* and *M. purpureus*	43
95		Glycyl-monascorbrin		$C_{25}H_{31}NO_6$	441			
96		Rubropunctatin L-tryptophane		$C_{32}H_{34}N_2O_6$	542		*M. ruber* and *Monascus* sp. J101	42, 44
97		Monascorubrin L-tryptophane		$C_{34}H_{38}N_2O_6$	570			
98		Rubropunctatin L-threonine		$C_{24}H_{29}NO_7$	443		*M.* sp. KCCM 10093	44, 45
99		Monascorubrin L-threonine		$C_{26}H_{33}NO_7$	471			

100		Rubropunctatin D-tyrosine		$C_{30}H_{33}NO_7$	519		*M*. sp. J101	42, 44
101		Monascorubrin D-tyrosine		$C_{32}H_{37}NO_7$	547			
102		Rubropunctatin ethyl L-leucine		$C_{29}H_{39}NO_6$	497		*M. ruber*, *Monascus* sp. KCCM 10093 and *M.* sp TTWMB 6093	44, 46, 47
103		Monascorubrin ethyl L-leucine		$C_{31}H_{43}NO_6$	525			
104		Rubropunctatin ethyl L-tyrosine		$C_{32}H_{37}NO_7$	547		*M. ruber* and *Monascus* sp. KCCM 10093	47, 48
105		Monascorubrin ethyl L-tyrosine		$C_{34}H_{41}NO_7$	575			
106		Unnamed	Yellow	$C_{21}H_{24}NO_5$	356		Red yeast rice produced by uncharacterized *Monascus* spp.	28
107				$C_{23}H_{28}NO_5$	384			
108		PP-O	Orange	$C_{23}H_{24}O_7$	412		*Penicillium* sp.AZ	48

109		PP-V	Purple	$C_{23}H_{25}NO_6$	411		*M. ruber* IBT 7904, 9655 *M. purpureus* IBT 9664	49
110		PP-Y	Orange	$C_{23}H_{26}O_5$	382		*Penicillium* sp.AZ	48
111		PP-R	Red	$C_{25}H_{31}NO_5$	425			

* MW: Molecular weight; MF: Molecular formula; Ref: References

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