Supplementary Material

*1. Synthesis and characterization of standard racemic phenylethanols derivatives (**1a-5a**)*

General procedure:
To a solution of acetofenone derivatives (**1-5**) (3.0 mmol) in MeOH (10.0 mL) at 0 °C, was added $NaBH_4$ (6.0 mmol). The mixture was stirred for 1 hour at room temperature, and the solvent was evaporated under reduced pressure. The residue was solubilized in water, extracted with ethyl acetate, and dried over $MgSO_4$. After filtration and evaporation, the residue was chromatographed on silica gel (20% AcOEt in hexanes, v/v) to afford **1a-5a** in 70-80% yield. After purification, the alcohols were characterized by ^1H NMR, infrared spectroscopic analysis, and chiral GC-FID.

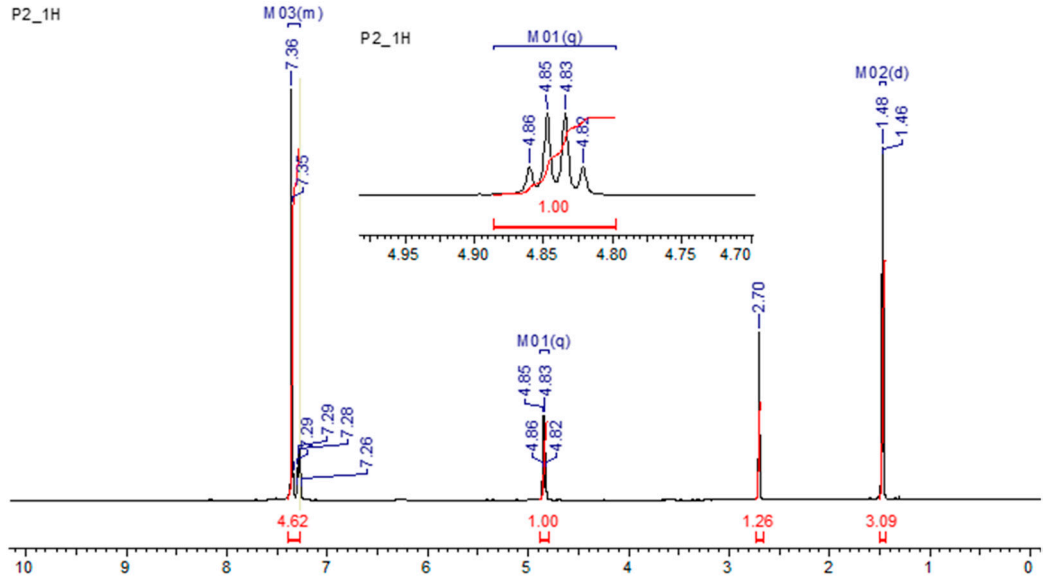


Figure S1. ^1H NMR ($CDCl_3$, 500 MHz) of 1-phenylethanol (**1a**)

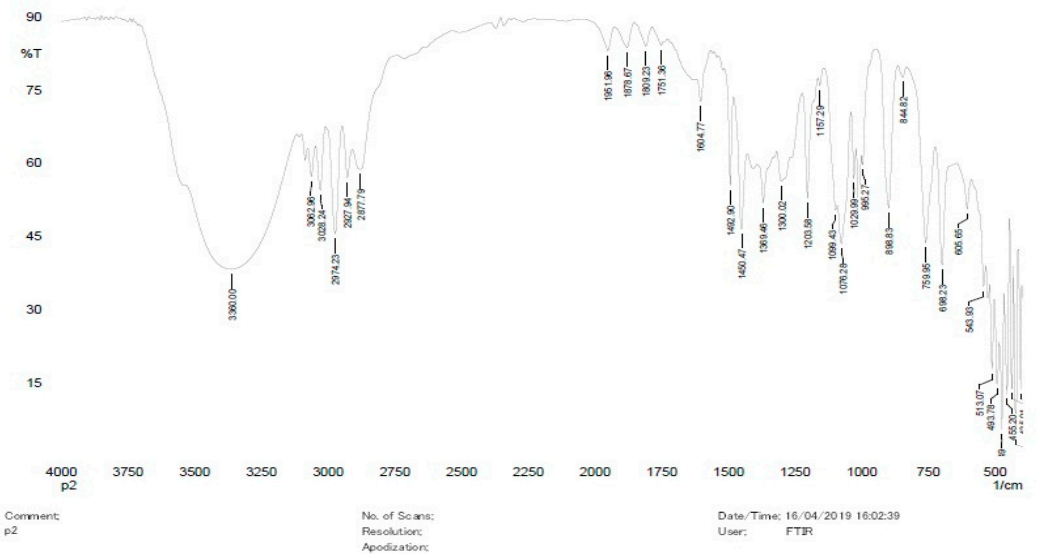
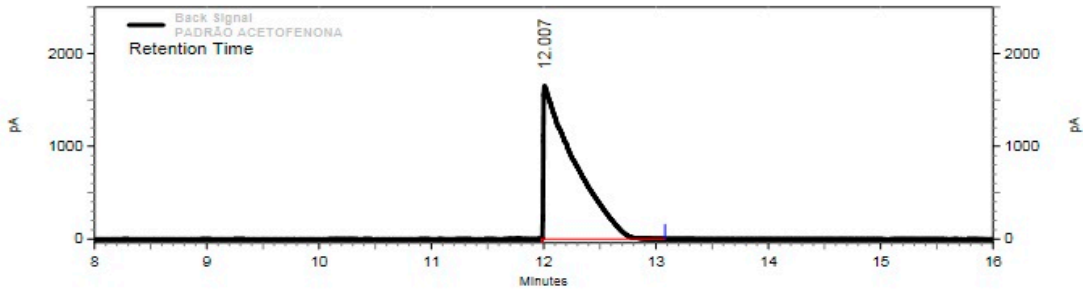


Figure S2. FT-IR (film) of 1-phenylethanol (**1a**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Result\AMOSTRAS DO MESTRADO\COLUNA CYCLOSIL B\PADRÕES\ACETATO. FENIL E ACETOFENONA\PADRÃO ACETOFENONA Jaque REIS RESOLUÇÃO 3.met.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/19/2016 10:39:15 AM (GMT -08:00)
Printed: 8/24/2018 9:34:36 AM (GMT -08:00)



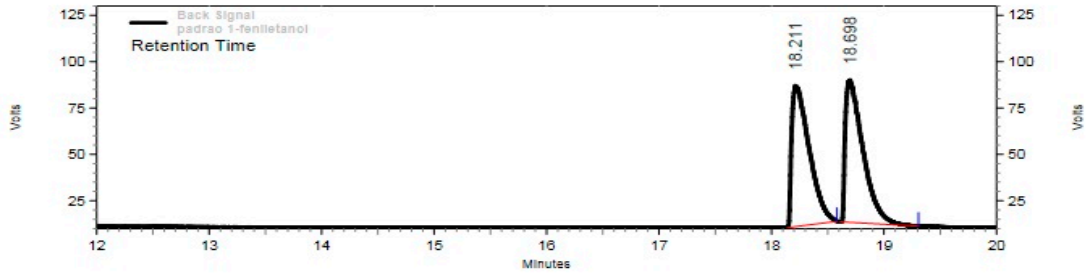
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.007	241611811	100.00	12671384	100.00
Totals	241611811	100.00	12671384	100.00

Figure S3. GC-FID of acetophenone (**1**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\padrao 1-feniletanol.rslt\padrao 1-feniletanol.dat
Method: C:\Enterprise\Projects\Method\Novos metodos\testeAF39min.met
Acquired: 4/2/2019 4:16:01 AM (GMT -03:00)
Printed: 4/2/2019 5:29:24 AM (GMT -03:00)



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
18.211	6332265	49.54	583429	49.75
18.698	6450850	50.46	589219	50.25
Totals	12783115	100.00	1172648	100.00

Figure S4. GC-FID of (*R*/*S*)-1-phenylethanol (*R*/*S*-**1a**)

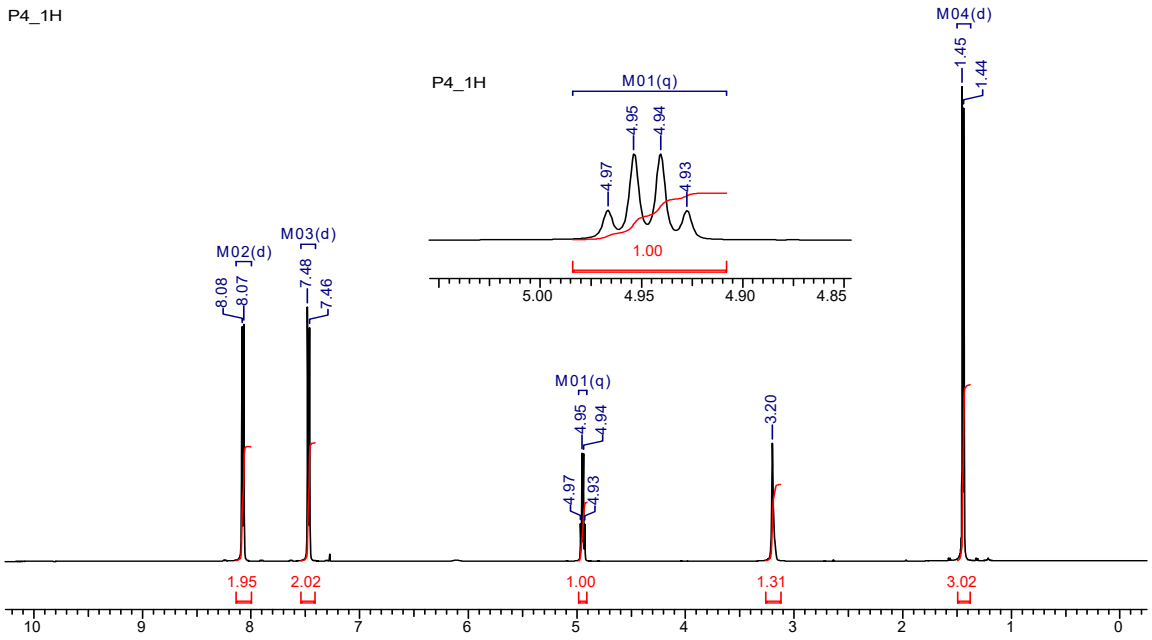


Figure S5. ^{1}H NMR ($CDCl_3$, 500 MHz) of 1-(4′-nitrophenyl)ethanol (**2a**)

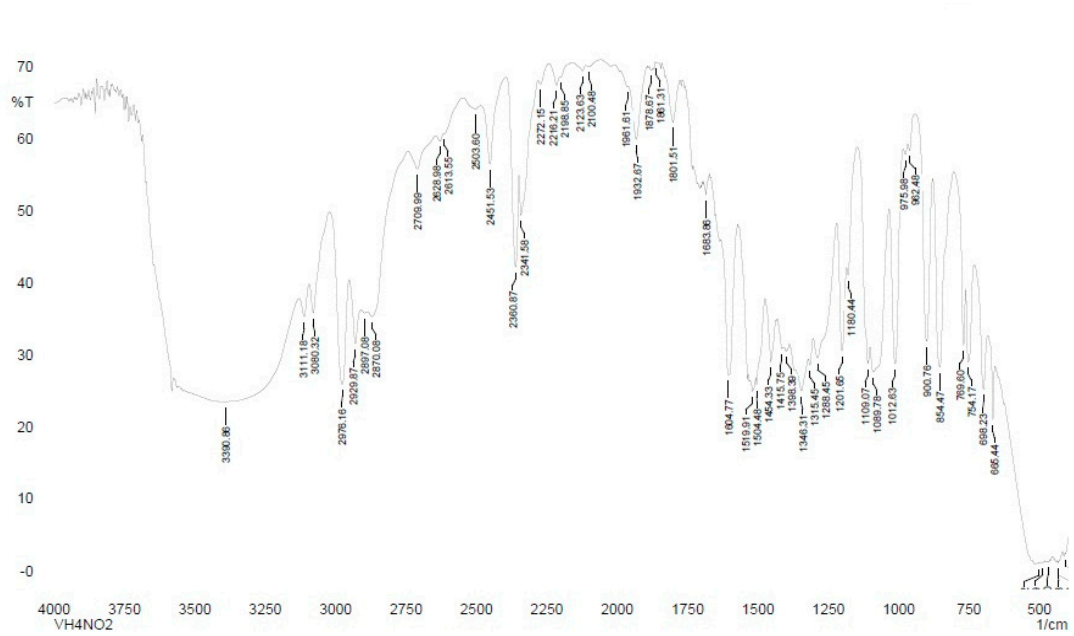
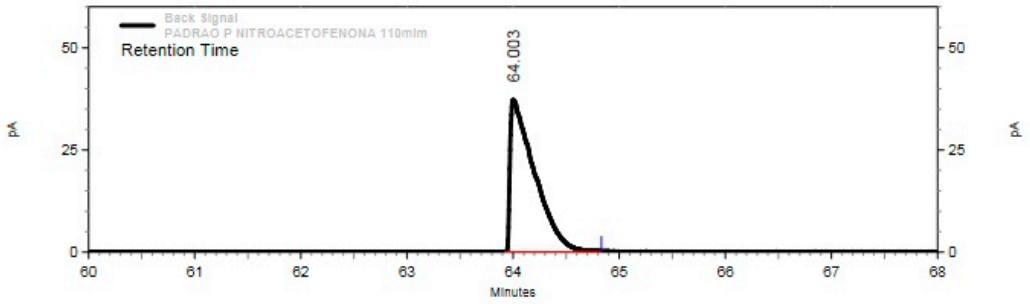


Figure S6. FT-IR (film) of 1-(4′-nitrophenyl)ethanol (**2a**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\PADRAO P NITROFENILETANOL.rslt\PADRAO P NITROACETOFENONA 110mim CETONA.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 7/20/2018 11:48:50 AM (GMT -08:00)
Printed: 10/16/2018 1:24:56 PM (GMT -08:00)



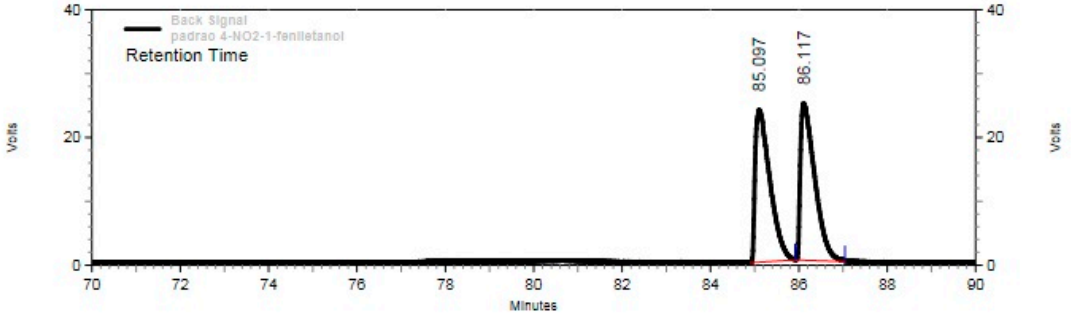
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
64.003	4567507	100.00	285515	100.00
Totals	4567507	100.00	285515	100.00

Figure S7. GC-FID 4′-nitroacetophenone (**2**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\padrao 4-NO2-1-feniletanol.rslt\padrao 4-NO2-1-feniletanol.dat
Method: C:\Enterprise\Projects\Method\Novos metodos\testeAF39min.met
Acquired: 4/3/2019 3:25:09 AM (GMT -03:00)
Printed: 4/4/2019 4:58:18 AM (GMT -03:00)



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
85.097	4250295	49.85	183492	49.31
86.117	4276058	50.15	188653	50.69
Totals	8526353	100.00	372145	100.00

Figure S8. GC-FID (*R*/*S*)-1-(4′-nitrophenyl)ethanol (*R*/*S*)-(**2a**)

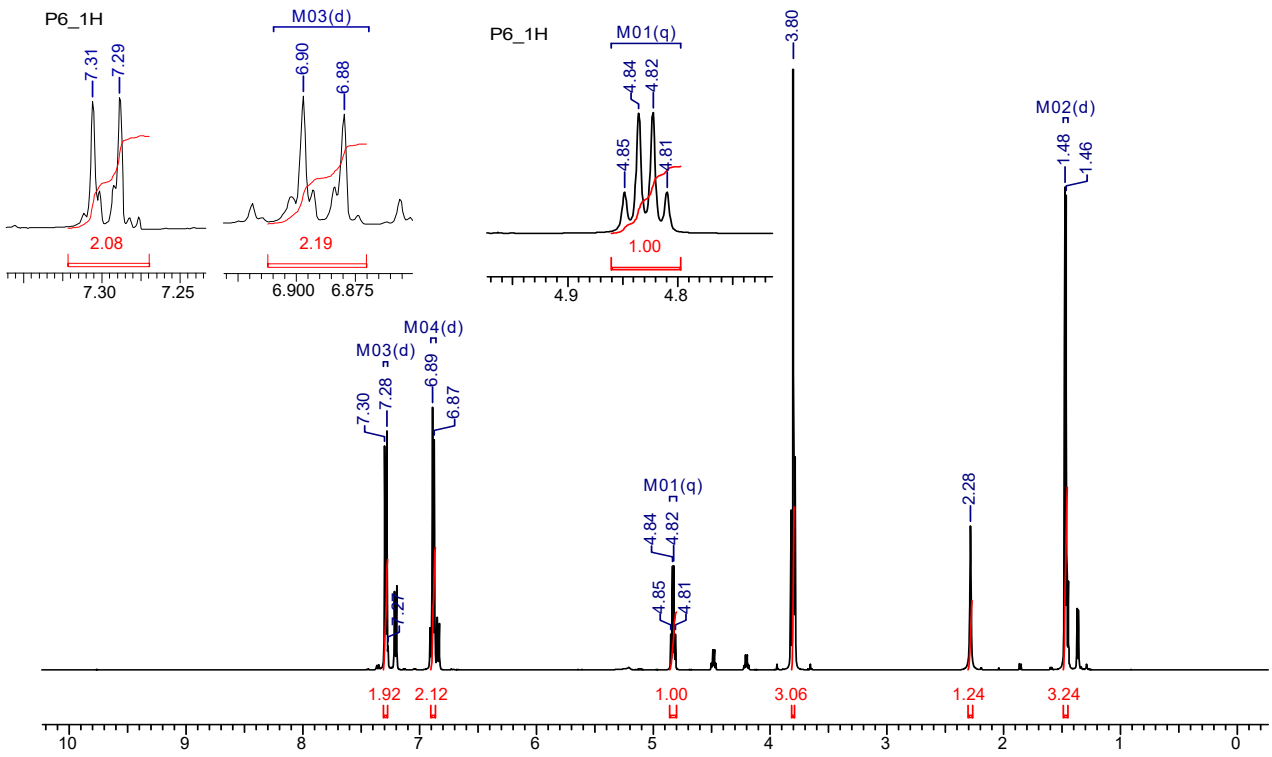


Figure S9. ^{1}H NMR ($CDCl_3$, 500 MHz) of 1-(4′-methoxyphenyl)ethanol (**3a**)

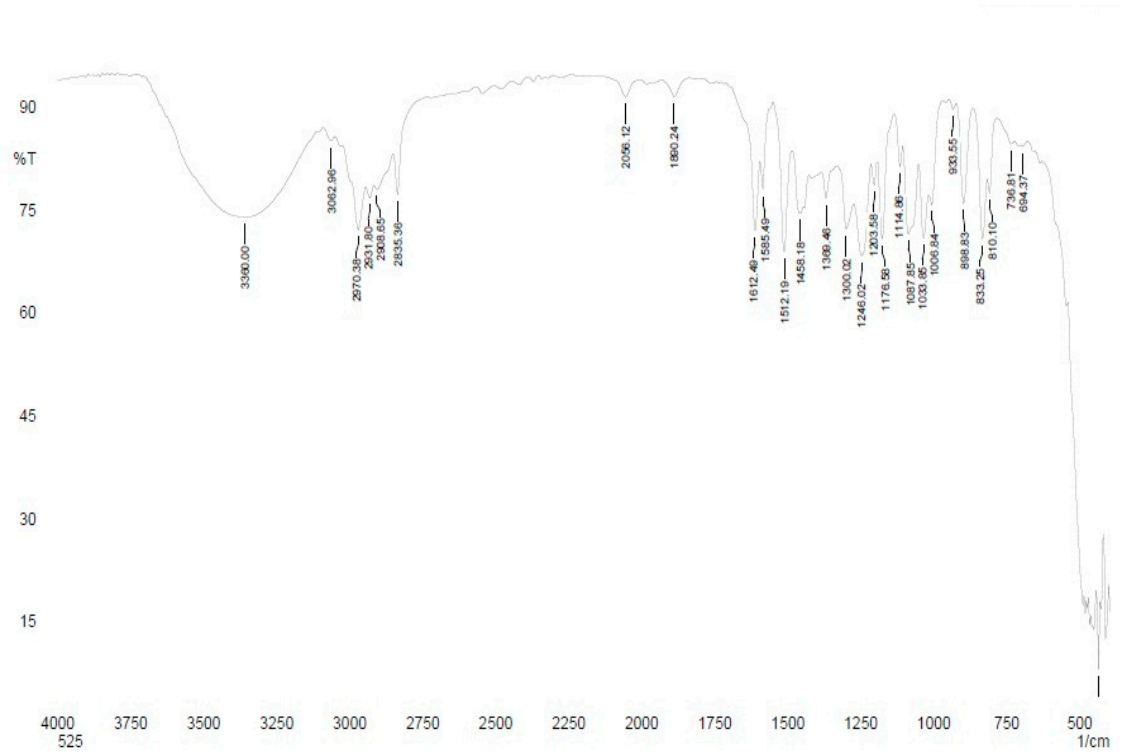
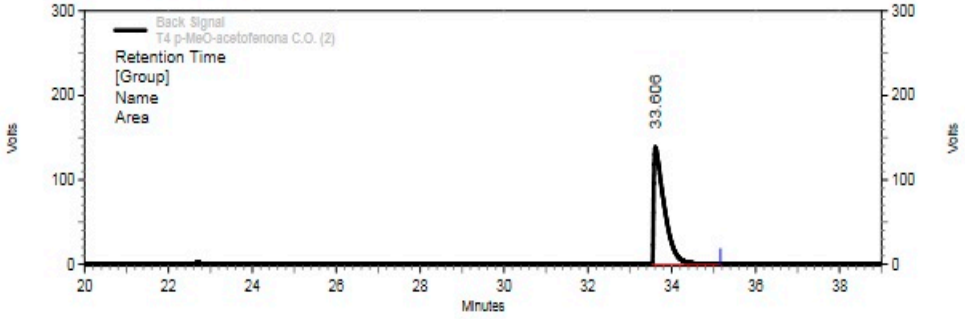


Figure S10. FT-IR (film) of 1-(4′-methoxyphenyl)ethanol (**3a**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 p-MeO-acetofenona
Method: C:\Enterprise\Projects\Method\Novos metodos\PADRAO 14 FENIIL E ACETOFENONA.met
Acquired: 10/19/2018 6:01:32 PM (GMT -03:00)
Printed: 12/10/2019 3:02:25 PM (GMT -03:00)



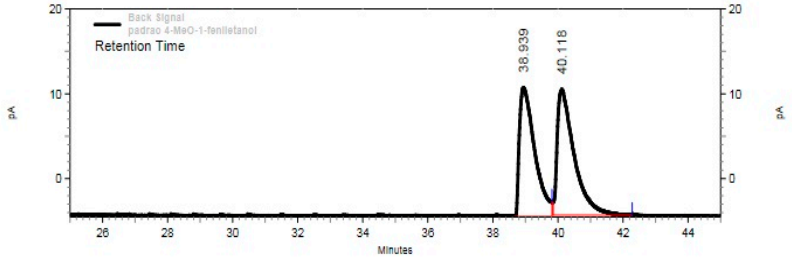
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
33.606	18722444	100.00	1066011	100.00
Totals	18722444	100.00	1066011	100.00

Figure S11. GC-FID of 4′-methoxyacetophenone (**3**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\padrao 4-MeO-1-feniletanol.rslt\padrao 4-MeO-1-feniletanol.dat
Method: C:\Enterprise\Projects\Projects_backup\Eliane\Metodo\PADRAO 13 PARA O METOXI.met
Acquired: 4/3/2019 1:03:09 AM (GMT -03:00)
Printed: 4/3/2019 2:22:26 AM (GMT -03:00)



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
38.939	3809484	48.05	116530	50.57
40.118	4119015	51.95	113913	49.43
Totals	7928499	100.00	230443	100.00

Figure S12. GC-FID of (*R*/*S*)-1-(4′-methoxyphenyl)ethanol (*R*/*S*-**3a**)

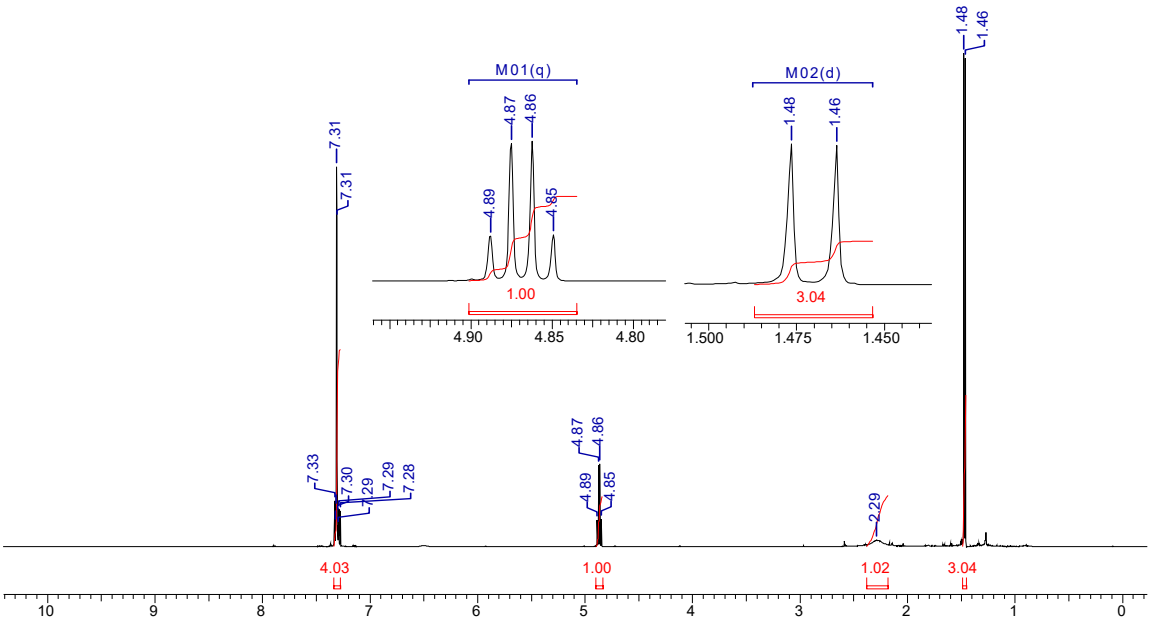


Figure S13. ^{1}H NMR ($CDCl_3$, 500 MHz) of 1-(4′-chlorophenyl)ethanol (**4a**)

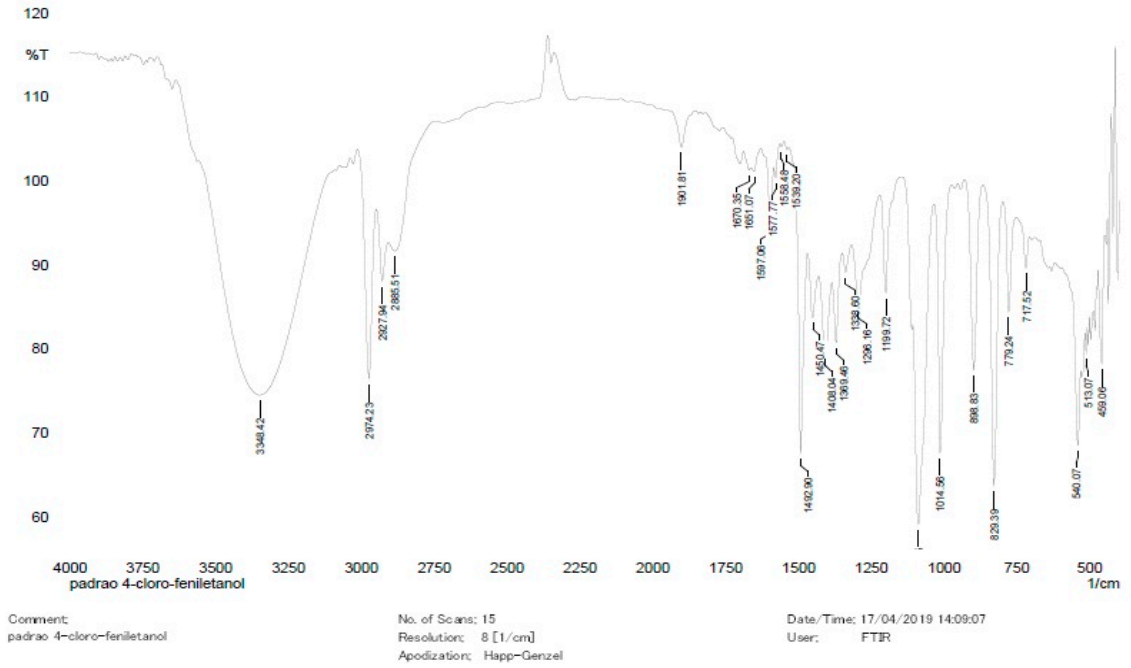
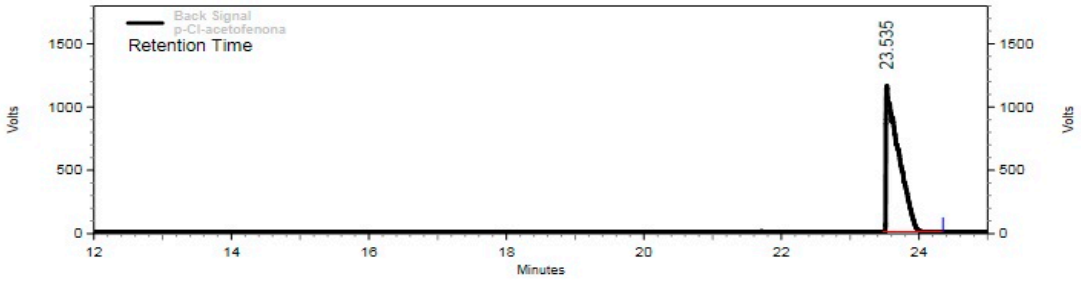


Figure S14. FT-IR (film) of 1-(4′-chlorophenyl)ethanol (**4a**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\p-Cl-acetofenona.rslt\p-Cl-acetofenona.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\metodo teste 301018\teste de 15min\testeAF39min.met
Acquired: 11/1/2018 1:58:31 PM (GMT -08:00)
Printed: 11/1/2018 3:35:11 PM (GMT -08:00)



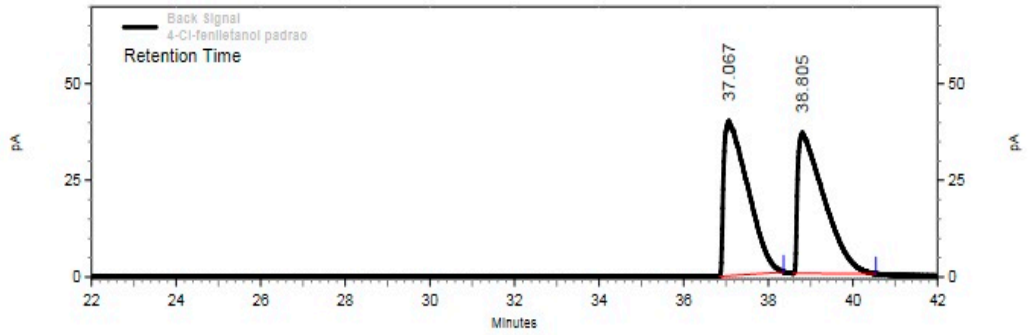
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
23.535	111607203	100.00	8857893	100.00
Totals	111607203	100.00	8857893	100.00

Figure S15. GC-FID of 4-chloroacetophenone (**4**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\4-Cl-feniletanol padrao.rslt\4-Cl-feniletanol padrao.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 13 PARA O METOXI.met
Acquired: 11/12/2018 3:30:31 PM (GMT -08:00)
Printed: 11/12/2018 4:23:54 PM (GMT -08:00)



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
37.067	12140597	50.06	307597	52.38
38.805	12113455	49.94	279670	47.62
Totals	24254052	100.00	587267	100.00

Figure S16. GC-FID of (*R*/*S*)-1-(4′-chlorophenyl)ethanol (*R*/*S*-**4a**)

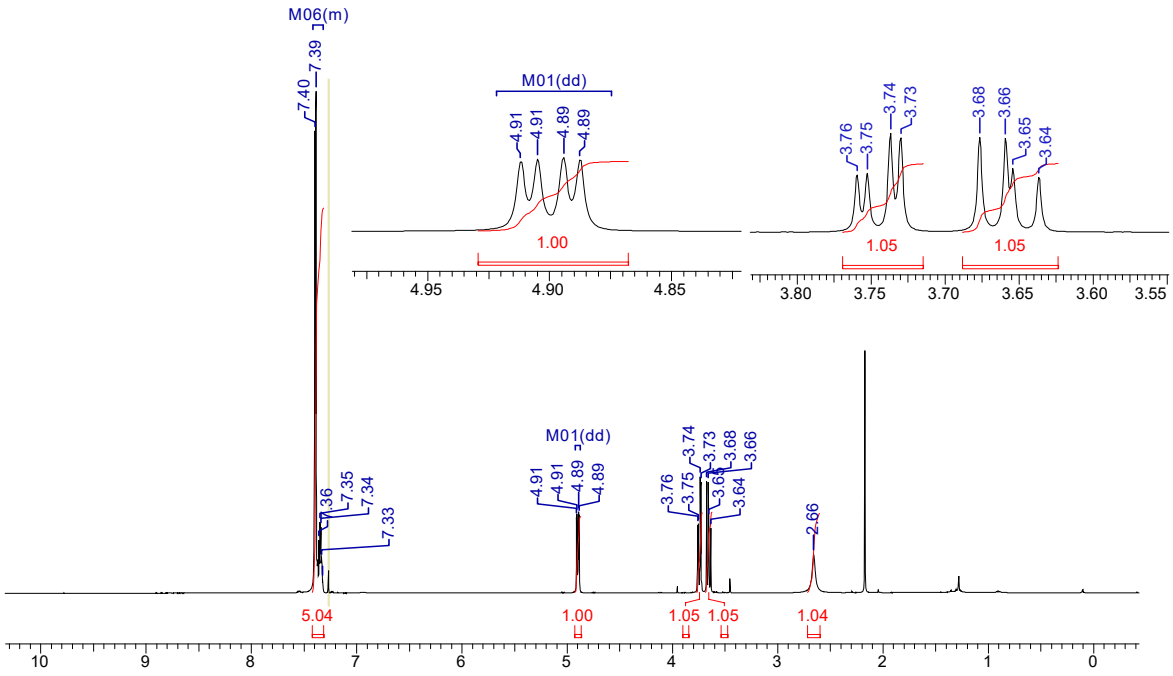


Figure S17. ^{1}H NMR ($CDCl_3$, 500 MHz) of 1-(2-chlorophenyl)ethanol (**5a**)

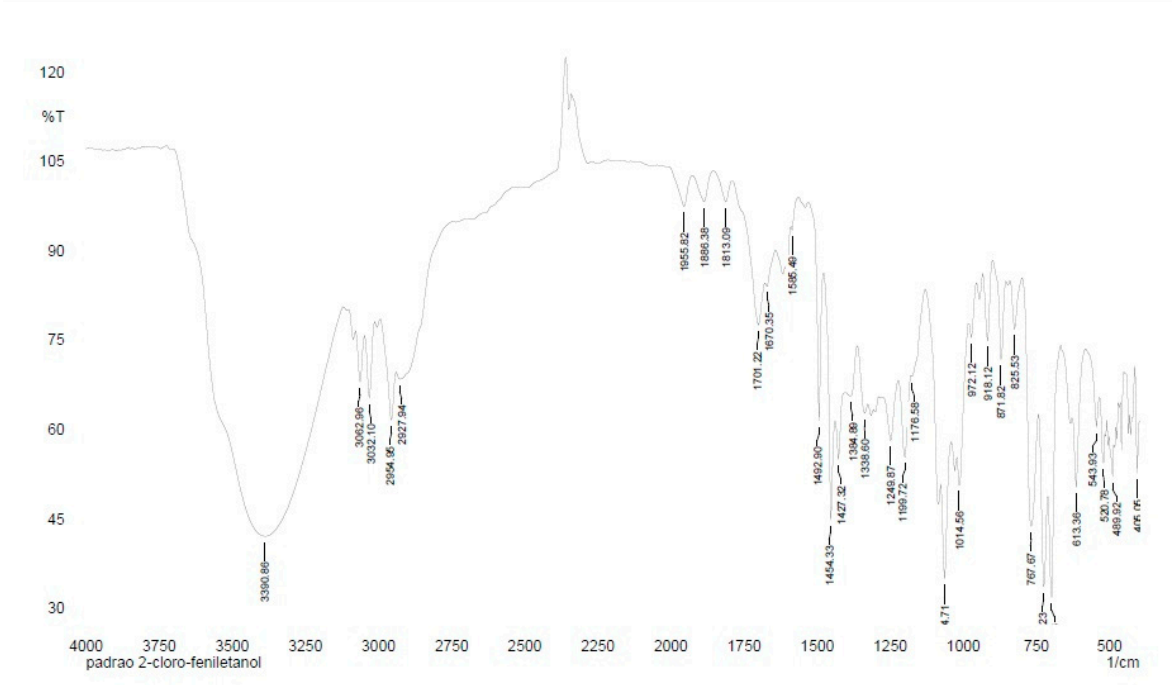
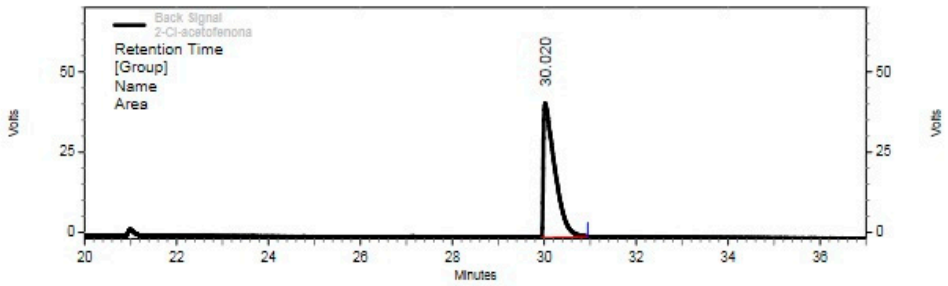


Figure S18. FT-IR (film) of 1-(2-chlorophenyl)ethanol (**5a**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\2-Cl-acetofenona

Method: C:\Enterprise\Projects\Method\Novos metodos\PADRAO 14 FENIIL E ACETOFENONA.met
Acquired: 11/20/2018 6:40:06 PM (GMT -03:00)
Printed: 12/10/2019 2:56:28 PM (GMT -03:00)



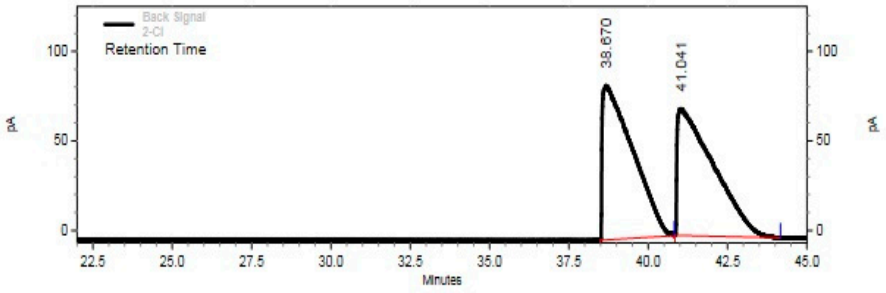
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
30.020	5558853	100.00	321521	100.00
Totals	5558853	100.00	321521	100.00

Figure S19. GC-FID of 2-chloroacetophenone (**5**)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\2-Cl.rslt\2-Cl
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 13 PARA O METOXI.met
Acquired: 11/12/2018 2:11:27 PM (GMT -08:00)
Printed: 11/12/2018 3:27:11 PM (GMT -08:00)



Back Signal
Results

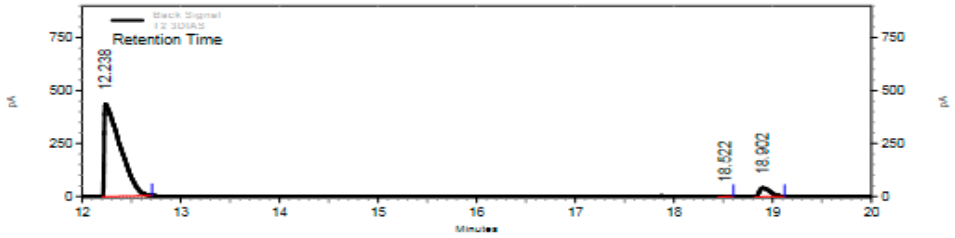
Retention Time	Area	Area %	Height	Height %
38.670	43932889	50.42	660969	54.90
41.041	43204615	49.58	542883	45.10
Totals	87137504	100.00	1203852	100.00

Figure S20. GC-FID of (*R*/*S*)-1-(2-chlorophenyl)ethanol (*R*/*S*-**5a**)

*2. Chromatograms of bioreduction of acetophenone (**1**) by endophytic fungi*

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Resultados\T2 T4 T5 e T7.1 3dias\T2 3DIAS.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 2/6/2018 12:08:09 PM (GMT -08:00)
Printed: 10/3/2018 10:23:07 AM (GMT -08:00)



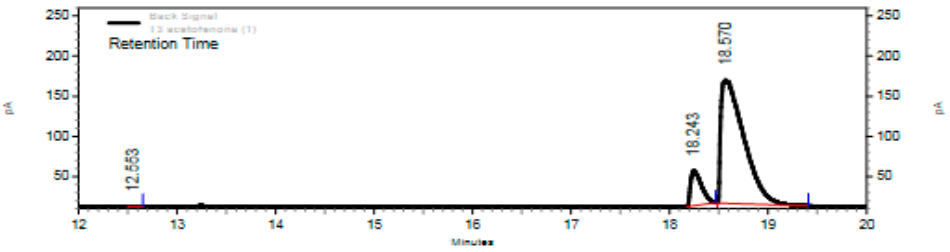
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.238	37739307	93.71	3363300	90.75
18.522	127704	0.32	25598	0.69
18.902	2403533	5.97	317307	8.56
Totals	40270544	100.00	3706205	100.00

Figure S21. GC-FID of bioreduction of acetophenone (**1**) by endophyte H2

Area % Report

Data File: C:\ProgramData\ChromatographySystem\Recovery Data\InstClient_ON.46\166FC406-EA4E-4F9F-B334-B90EB9EA871D\T3 acetofenona (1).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 10/1/2018 5:04:18 PM (GMT -08:00)
Printed: 10/1/2018 5:49:14 PM (GMT -08:00)



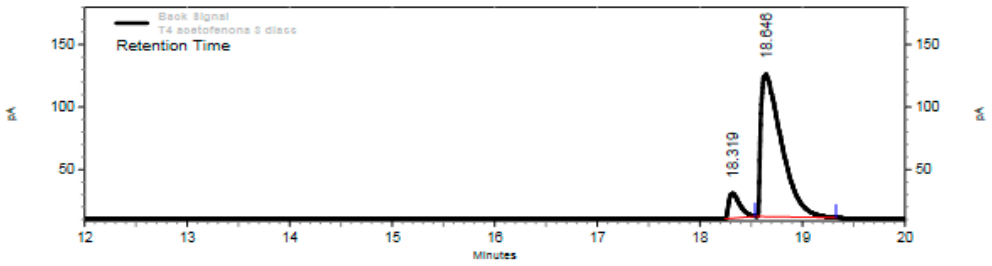
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.553	9563	0.04	2036	0.13
18.243	2581569	11.88	334395	22.03
18.570	19143482	88.08	1181442	77.84
Totals	21734614	100.00	1517873	100.00

Figure S22. GC-FID of bioreduction of acetophenone (**1**) by endophyte H3

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



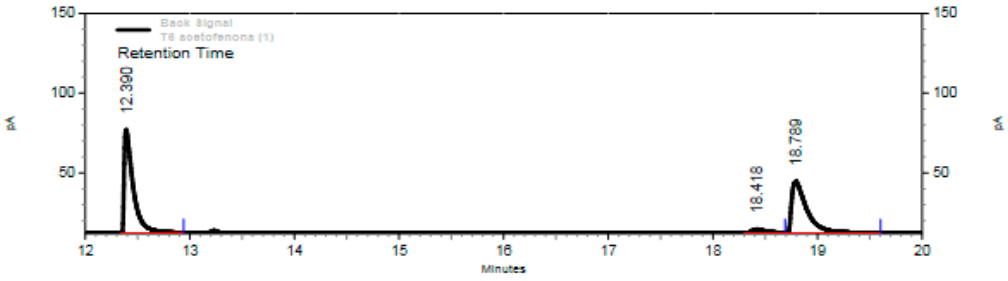
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S23. GC-FID of bioreduction of acetophenone (**1**) by endophyte *Talaromyces* sp. H4

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Resultados\T6 acetofenona (1).rslt\T6 acetofenona (1).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 10/2/2018 9:23:47 AM (GMT -08:00)
Printed: 10/2/2018 10:07:37 AM (GMT -08:00)



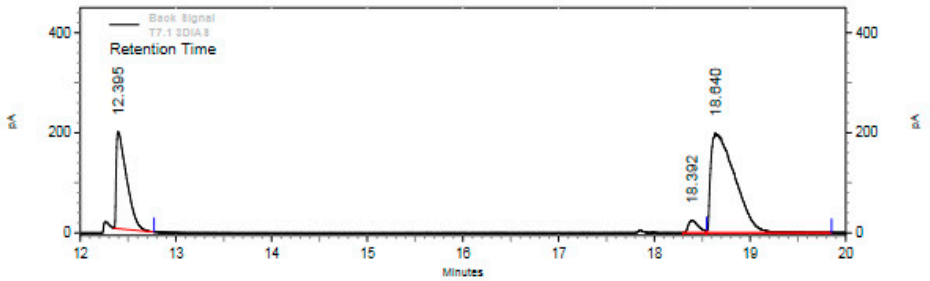
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.390	2961308	52.98	496835	65.29
18.418	167589	3.00	18602	2.44
18.789	2460247	44.02	245486	32.26
Totals	5589144	100.00	760923	100.00

Figure S24. GC-FID of bioreduction of acetophenone (**1**) by endophyte H6

Area % Report

Data File: C:\Enterprise\Projects\Result\ELIANE\AMOSTRAS EM 6.2.18\SYSTEM.rslt\T7.1 3DIAS.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE BENZOIL E ISOFORONA (2).met
Acquired: 2/6/2018 2:15:40 PM (GMT -08:00)
Printed: 7/23/2018 12:53:37 PM (GMT -08:00)



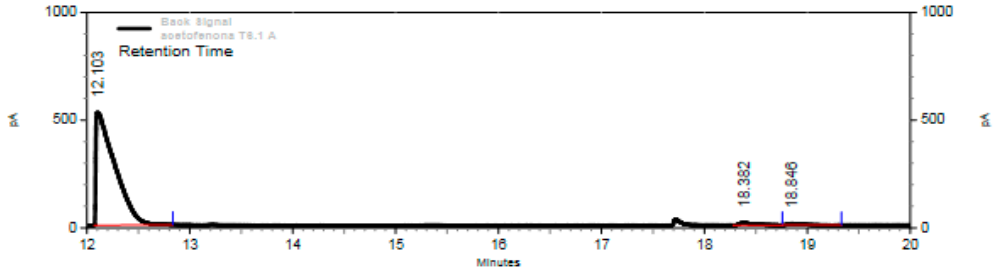
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.395	11259435	28.62	1484495	46.30
18.392	1405935	3.57	192056	5.99
18.640	26677103	67.81	1529597	47.71
Totals	39342473	100.00	3206148	100.00

Figure S25. GC-FID of bioreduction of acetophenone (**1**) by endophyte H7

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\acetofenona T6.1 A.rslt\acetofenona T6.1 A.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 10/2/2018 11:43:11 AM (GMT -08:00)
Printed: 10/2/2018 1:08:20 PM (GMT -08:00)



Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.103	51440190	97.78	4010525	96.73
18.382	712177	1.35	80402	1.94
18.846	455629	0.87	55136	1.33
Totals	52607996	100.00	4146063	100.00

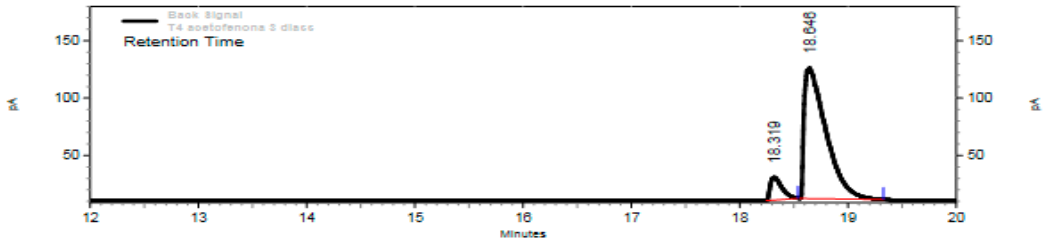
Figure S26. GC-FID of bioreduction of acetophenone (**1**) by endophyte H8

*3. Chromatograms of optimization of bioreduction of acetophenone (**1**) by Talaromyces sp. H4*

3.1 Co-solvent effect

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



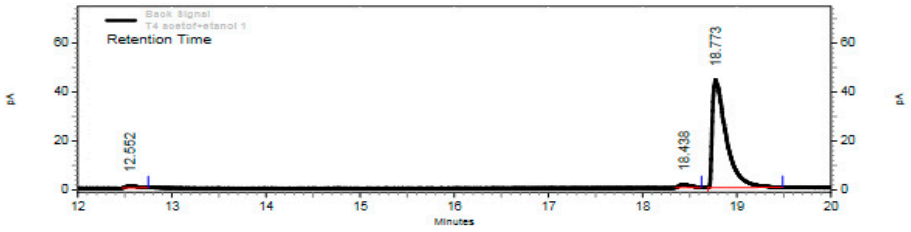
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S27. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in DMSO as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof+etanol 1.rslt\T4 acetof+etanol 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/22/2018 4:42:19 PM (GMT -08:00)
Printed: 8/23/2018 3:58:24 PM (GMT -08:00)



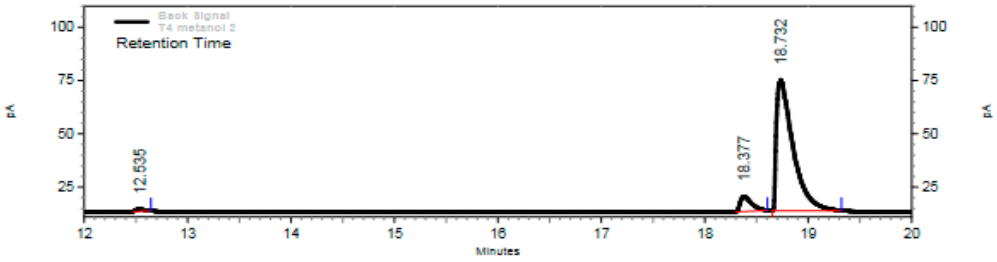
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.552	55070	1.53	7251	2.03
18.438	83002	2.31	10933	3.07
18.773	3459105	96.16	338396	94.90
Totals	3597177	100.00	356580	100.00

Figure S28. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in ethanol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 metanol 2.rslt\T4 metanol 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/23/2018 3:41:23 PM (GMT -08:00)
Printed: 8/23/2018 4:25:18 PM (GMT -08:00)



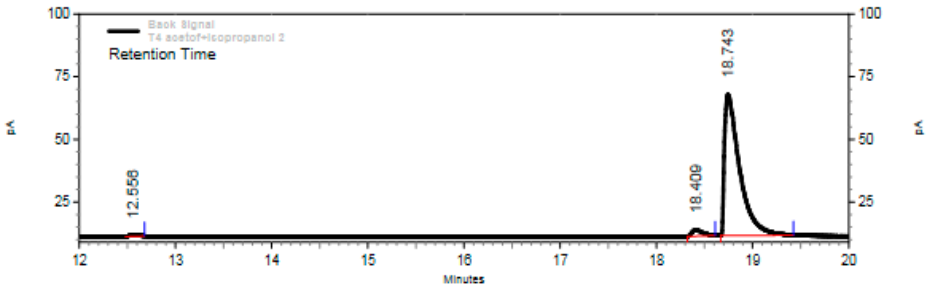
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.535	51267	0.89	8780	1.64
18.377	421563	7.34	55052	10.26
18.732	5270361	91.77	472559	88.10
Totals	5743191	100.00	536391	100.00

Figure S29. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in methanol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof+isopropanol 2.rslt\T4 acetof+isopropanol 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/24/2018 12:27:06 PM (GMT -08:00)
Printed: 8/24/2018 1:09:49 PM (GMT -08:00)



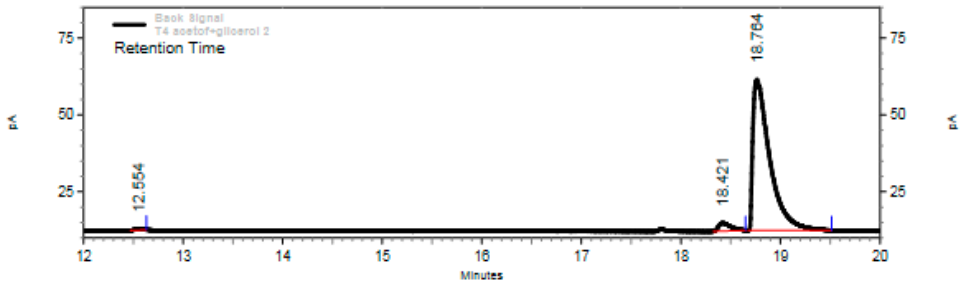
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.556	27087	0.55	4328	0.95
18.409	149698	3.05	19137	4.19
18.743	4723329	96.39	432947	94.86
Totals	4900114	100.00	456412	100.00

Figure S30. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in isopropanol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof+glicerol 2.rslt\T4 acetof+glicerol 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/24/2018 9:29:21 AM (GMT -08:00)
Printed: 8/24/2018 10:12:02 AM (GMT -08:00)



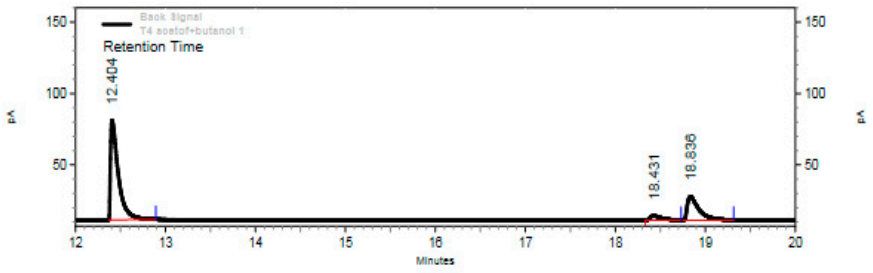
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.554	13387	0.29	2549	0.64
18.421	174029	3.74	20607	5.15
18.764	4463700	95.97	376888	94.21
Totals	4651116	100.00	400044	100.00

Figure S31. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in glycerol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\Co-solvente\T4 acetof+butanol 1.rslt\T4 acetof+butanol 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/24/2018 10:12:28 AM (GMT -08:00)
Printed: 8/24/2018 11:23:58 AM (GMT -08:00)



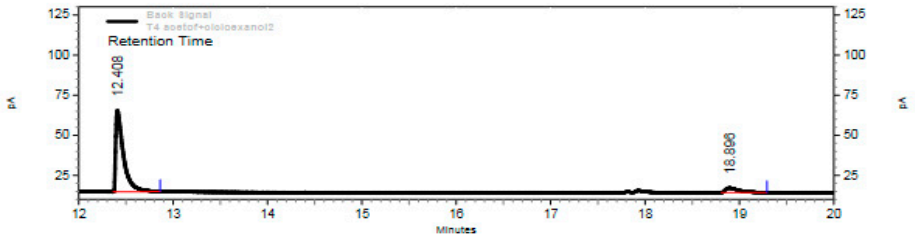
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.404	3241999	70.16	535035	77.79
18.431	227719	4.93	24962	3.63
18.836	1151249	24.91	127766	18.58
Totals	4620967	100.00	687763	100.00

Figure S32. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in butanol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof+cicloexanol2.rslt\T4 acetof+cicloexanol2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/23/2018 11:09:35 AM (GMT -08:00)
Printed: 8/23/2018 4:08:20 PM (GMT -08:00)



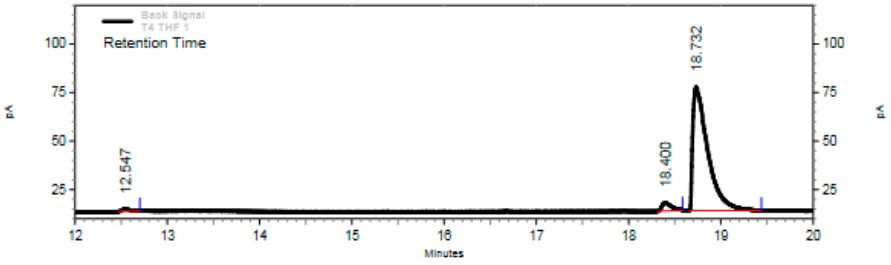
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.408	2238941	90.94	389791	94.48
18.896	222966	9.06	22778	5.52
Totals	2461907	100.00	412569	100.00

Figure S33. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in cyclohexanol as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 THF 1.rslt\T4 THF 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/23/2018 1:25:16 PM (GMT -08:00)
Printed: 8/23/2018 4:15:36 PM (GMT -08:00)



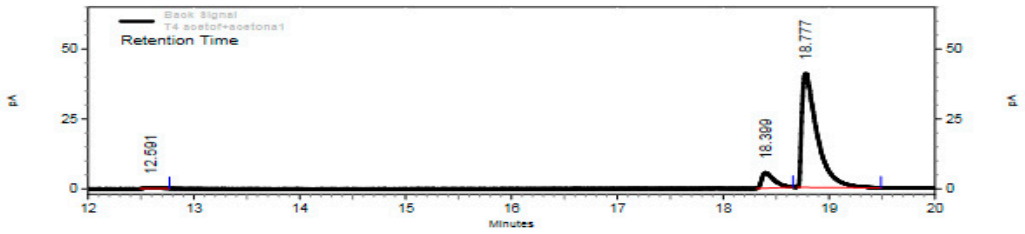
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.547	57185	0.98	8414	1.59
18.400	233657	4.02	31985	6.05
18.732	5514767	94.99	488631	92.36
Totals	5805609	100.00	529030	100.00

Figure S34. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in THF as co-solvent

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof+acetona1.rslt\T4 acetof+acetona1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/22/2018 6:13:15 PM (GMT -08:00)
Printed: 8/23/2018 4:13:03 PM (GMT -08:00)



Back Signal Results

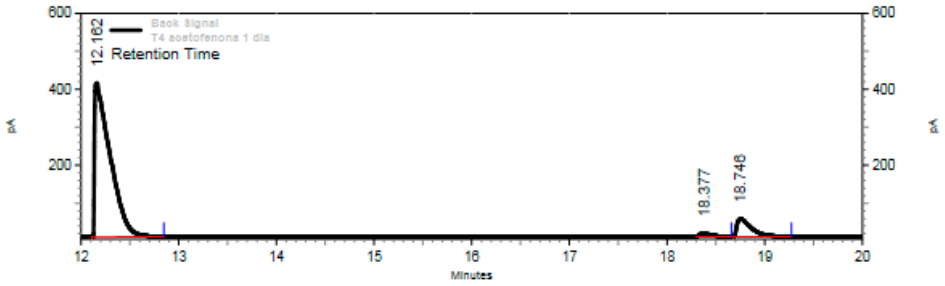
Retention Time	Area	Area %	Height	Height %
12.591	17097	0.49	2749	0.77
18.399	347998	9.88	42993	11.99
18.777	3156159	89.63	312914	87.25
Totals	3521254	100.00	358656	100.00

Figure S35. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 in acetone as co-solvent

3.2 Time effect

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 1 dia.rslt\T4 acetofenona 1 dia.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 1:15:58 PM (GMT -08:00)
Printed: 9/12/2018 2:00:33 PM (GMT -08:00)



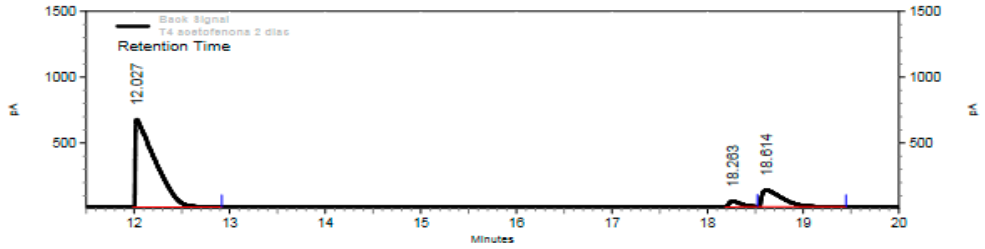
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.162	34420296	88.92	3106795	87.94
18.377	594347	1.54	71796	2.03
18.746	3695000	9.55	354252	10.03
Totals	38709643	100.00	3532843	100.00

Figure S36. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 for 1 day

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 2 dias.rslt\T4 acetofenona 2 dias.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\MT\LIMPEZA DA COLUNA COM SOLVENTE.met
Acquired: 9/4/2018 4:11:28 PM (GMT -08:00)
Printed: 9/4/2018 5:04:14 PM (GMT -08:00)



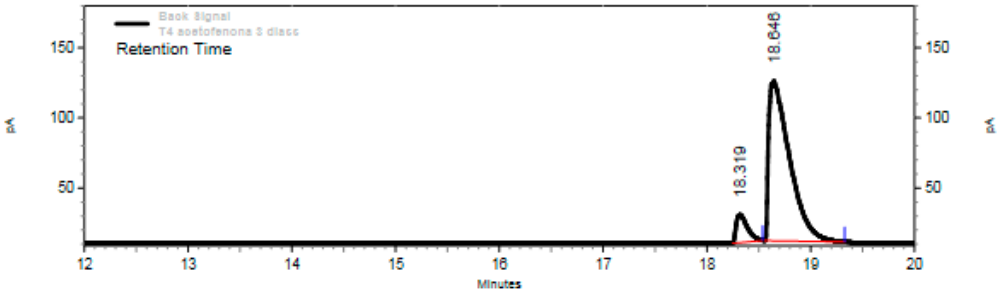
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.027	73168821	81.44	5107734	79.76
18.263	2761048	3.07	328129	5.12
18.614	13917306	15.49	967986	15.12
Totals	89847175	100.00	6403849	100.00

Figure S37. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 for 2 days

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



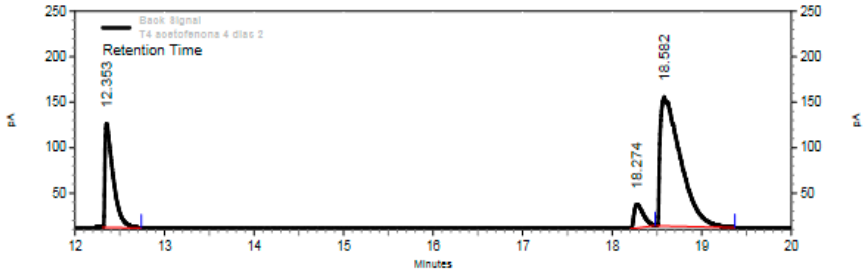
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S38. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 for 3 days

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Resultados\T4 acetofenona 4 dias 2.rslt\T4 acetofenona 4 dias 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 9/6/2018 9:45:01 AM (GMT -08:00)
Printed: 9/6/2018 10:28:55 AM (GMT -08:00)



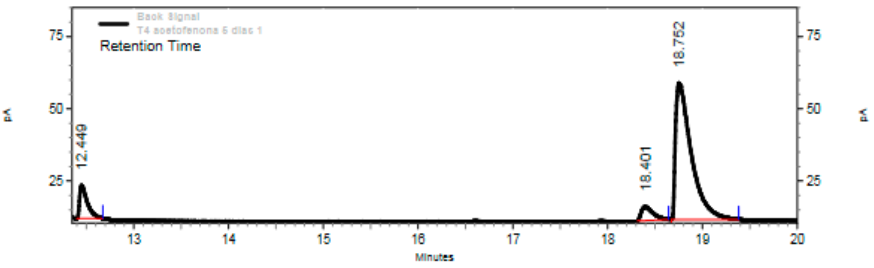
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.353	5587248	23.04	875948	40.49
18.274	1440019	5.94	197519	9.13
18.582	17224012	71.02	1090008	50.38
Totals	24251279	100.00	2163475	100.00

Figure S39. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 for 4 days

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Resultados\T4 acetofenona 5 dias 1.rslt\T4 acetofenona 5 dias 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 9/6/2018 8:53:12 AM (GMT -08:00)
Printed: 9/6/2018 9:38:28 AM (GMT -08:00)

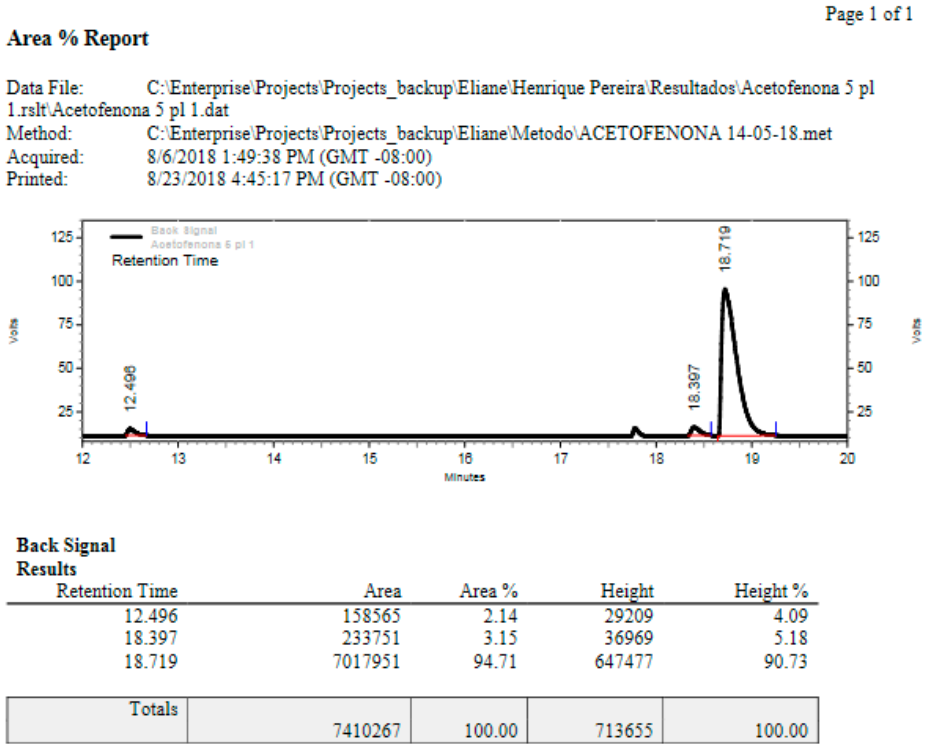


Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.449	501306	9.98	87924	18.04
18.401	317453	6.32	36667	7.52
18.752	4202236	83.69	362882	74.44
Totals	5020995	100.00	487473	100.00

Figure S40. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 for 5 days

3.3 Inoculum charge effect



Page 1 of 1

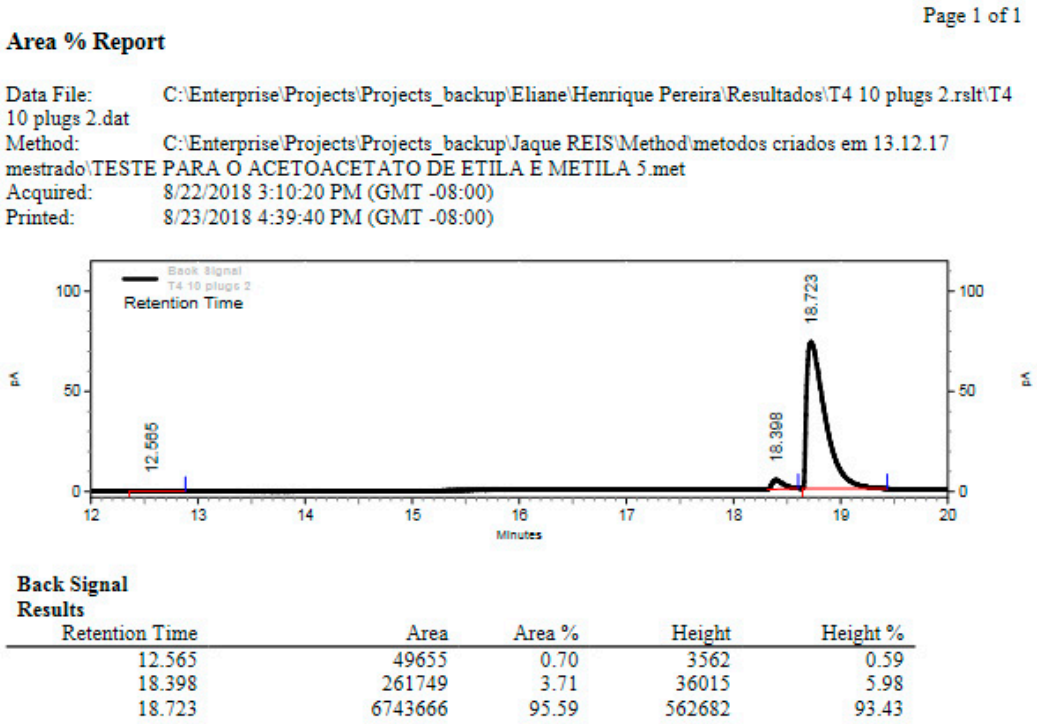
Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\Acetofenona 5 pl 1.rslt\Acetofenona 5 pl 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Eliane\Metodo\ACETOFENONA 14-05-18.met
Acquired: 8/6/2018 1:49:38 PM (GMT -08:00)
Printed: 8/23/2018 4:45:17 PM (GMT -08:00)

Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.496	158565	2.14	29209	4.09
18.397	233751	3.15	36969	5.18
18.719	7017951	94.71	647477	90.73
Totals	7410267	100.00	713655	100.00

Figure S41. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 (0.619 g of mycelium/mmol acetophenone)



Page 1 of 1

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 10 plugs 2.rslt\T4 10 plugs 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/22/2018 3:10:20 PM (GMT -08:00)
Printed: 8/23/2018 4:39:40 PM (GMT -08:00)

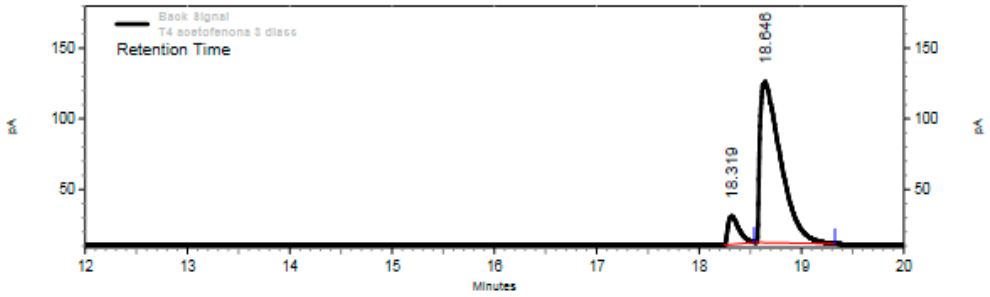
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.565	49655	0.70	3562	0.59
18.398	261749	3.71	36015	5.98
18.723	6743666	95.59	562682	93.43

Figure S42. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 (1.186 g of mycelium/mmol acetophenone)

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



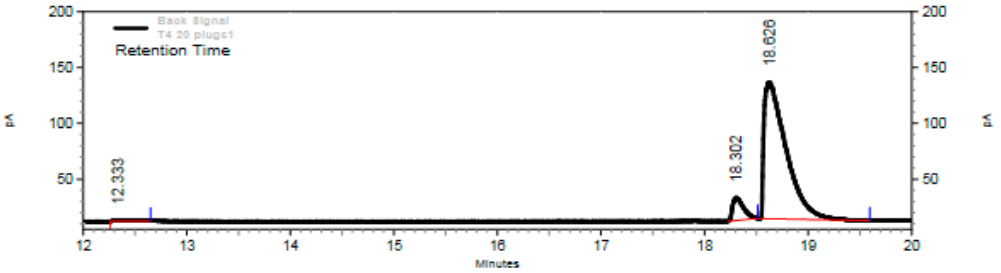
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S43. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 (1.816 g of mycelium/mmol acetophenone

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 20 plugs1.rslt\T4 20 plugs1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 8/23/2018 5:18:46 PM (GMT -08:00)
Printed: 8/23/2018 6:04:52 PM (GMT -08:00)



Back Signal Results

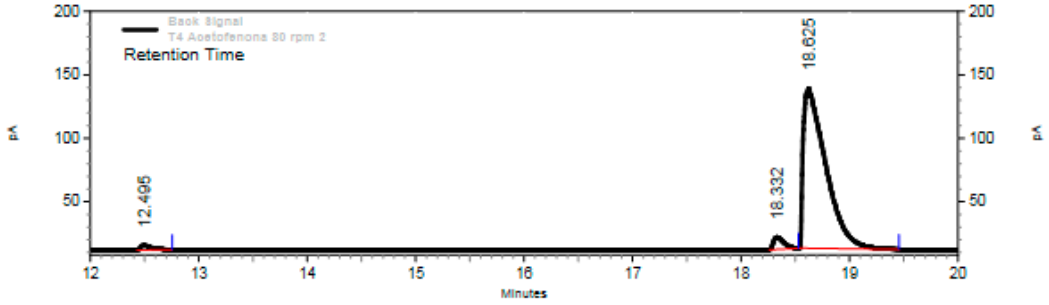
Retention Time	Area	Area %	Height	Height %
12.333	62966	0.41	5279	0.48
18.302	1146301	7.54	155931	14.16
18.626	13995469	92.05	940344	85.37
Totals	15204736	100.00	1101554	100.00

Figure S44. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 (2.732 g of mycelium/mmol acetophenone)

3.4 Shaking speed effect

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 Acetofenona 80 rpm 2.rslt\T4 Acetofenona 80 rpm 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\MT\LIMPEZA DA COLUNA COM SOLVENTE.met
Acquired: 9/4/2018 1:59:13 PM (GMT -08:00)
Printed: 9/4/2018 3:13:04 PM (GMT -08:00)



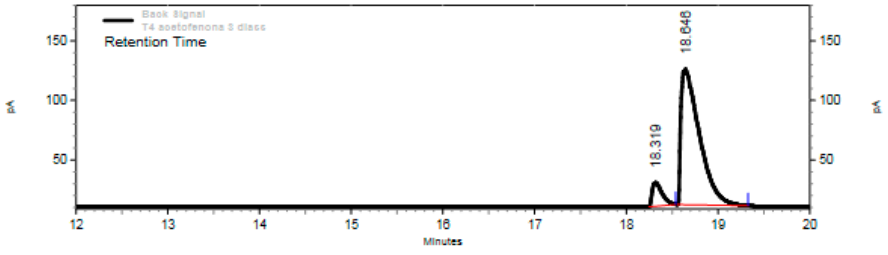
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.495	196448	1.34	28543	2.66
18.332	499241	3.41	74666	6.97
18.625	13932466	95.24	968568	90.37
Totals	14628155	100.00	1071777	100.00

Figure S45. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 80 rpm

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



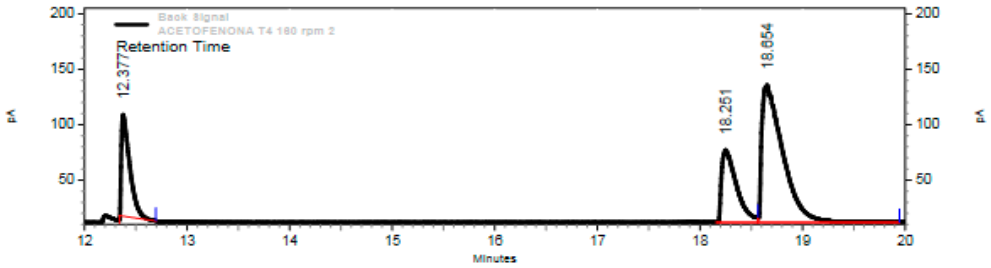
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S46. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 120 rpm

Area % Report

Data File: C:\Enterprise\Projects\Result\ELIANE\ACETOFENONA T4 160 rpm 2.rslt\ACETOFENONA T4 160 rpm 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 7/23/2018 2:37:48 PM (GMT -08:00)
Printed: 8/24/2018 10:18:44 AM (GMT -08:00)



Back Signal Results

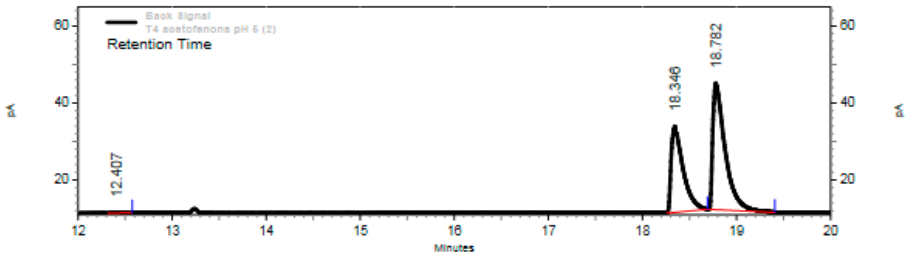
Retention Time	Area	Area %	Height	Height %
12.377	3981600	17.66	703035	32.59
18.251	5068698	22.48	501899	23.27
18.654	13499173	59.86	952368	44.15
Totals	22549471	100.00	2157302	100.00

Figure S47. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 160 rpm

3.5 pH effect

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona pH 5 (2).rslt\T4 acetofenona pH 5 (2).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/24/2018 3:20:24 PM (GMT -08:00)
Printed: 9/24/2018 4:01:58 PM (GMT -08:00)



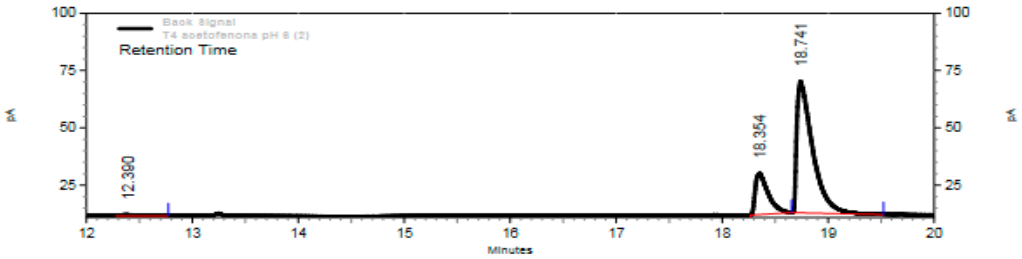
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.407	14577	0.38	2065	0.48
18.346	1509801	39.47	171976	40.30
18.782	2300676	60.15	252652	59.21
Totals	3825054	100.00	426693	100.00

Figure S48. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at pH 5

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona pH 6 (2).rslt\T4 acetofenona pH 6 (2).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/24/2018 4:04:34 PM (GMT -08:00)
Printed: 9/24/2018 4:47:31 PM (GMT -08:00)



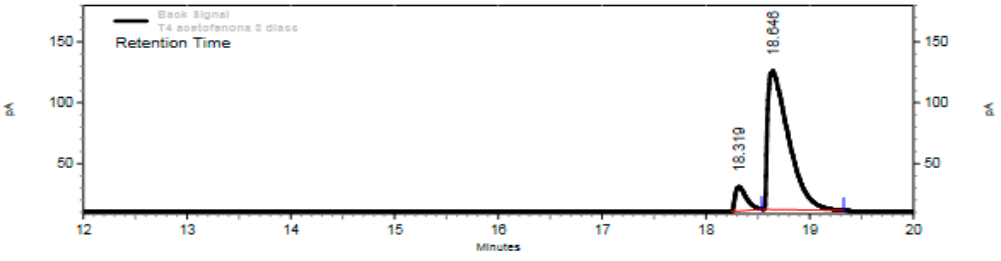
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.390	62709	1.08	4886	0.84
18.354	1159596	19.99	137885	23.62
18.741	4578849	78.93	441060	75.55
Totals	5801154	100.00	583831	100.00

Figure S49. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at pH 6

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



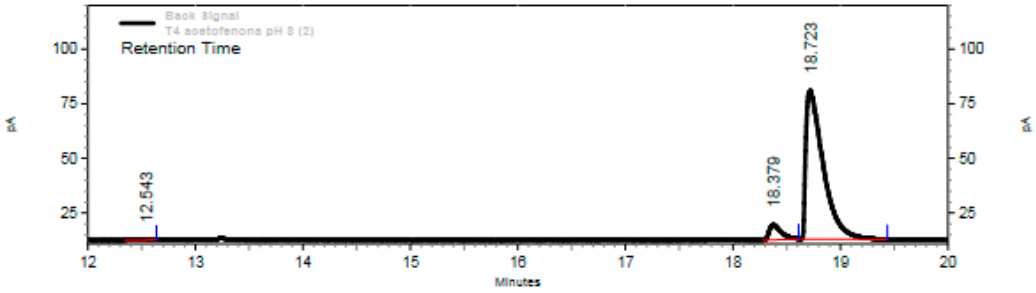
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S50. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at pH 7

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona pH 8 (2).rslt\T4 acetofenona pH 8 (2).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/24/2018 4:49:57 PM (GMT -08:00)
Printed: 9/24/2018 5:31:58 PM (GMT -08:00)



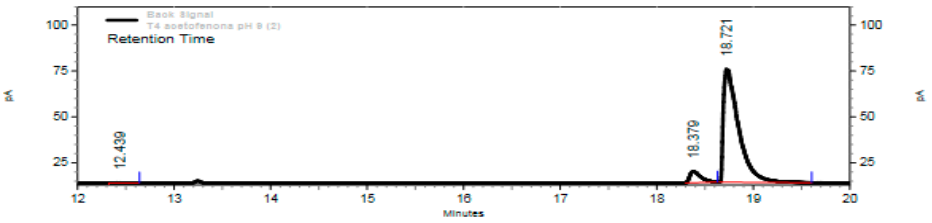
Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.543	16253	0.26	1374	0.24
18.379	408650	6.48	53659	9.30
18.723	5877530	93.26	521749	90.46
Totals	6302433	100.00	576782	100.00

Figure S51. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at pH 8

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona pH 9 (2).rslt\T4 acetofenona pH 9 (2).dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/24/2018 5:33:00 PM (GMT -08:00)
Printed: 9/24/2018 6:15:31 PM (GMT -08:00)



Back Signal Results

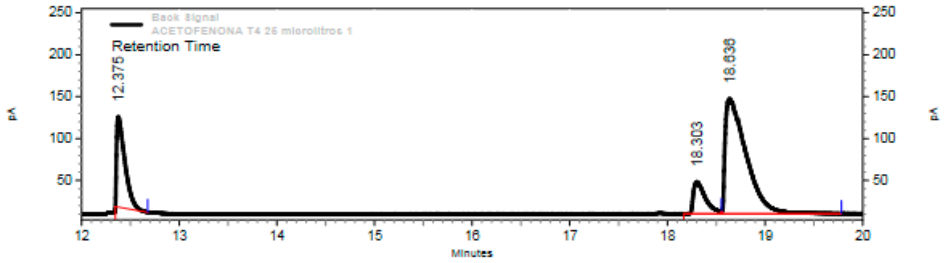
Retention Time	Area	Area %	Height	Height %
12.439	27033	0.48	2572	0.49
18.379	372751	6.68	48036	9.18
18.721	5184032	92.84	472876	90.33
Totals	5583816	100.00	523484	100.00

Figure S52. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at pH 9

3.6 Acetophenone (**1**) concentration effect

Area % Report

Data File: C:\Enterprise\Projects\Result\ELIANE\ACETOFENONA T4 25 microlitros 1.rslt\ACETOFENONA T4 25 microlitros 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\TESTE PARA O ACETOACETATO DE ETILA E METILA 5.met
Acquired: 7/23/2018 12:00:01 PM (GMT -08:00)
Printed: 8/23/2018 5:03:03 PM (GMT -08:00)



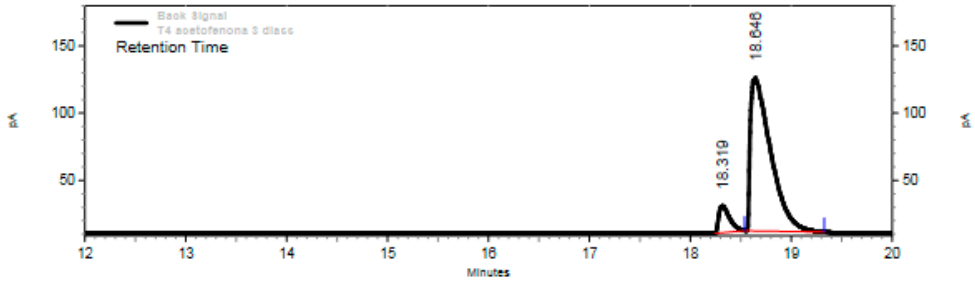
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
12.375	4895874	21.33	826650	38.06
18.303	2478537	10.80	291468	13.42
18.636	15583344	67.88	1053647	48.52
Totals	22957755	100.00	2171765	100.00

Figure S53. GC-FID of bioreduction of 0.22 mmol of acetophenone (**1**) by *Talaromyces* sp. H4

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



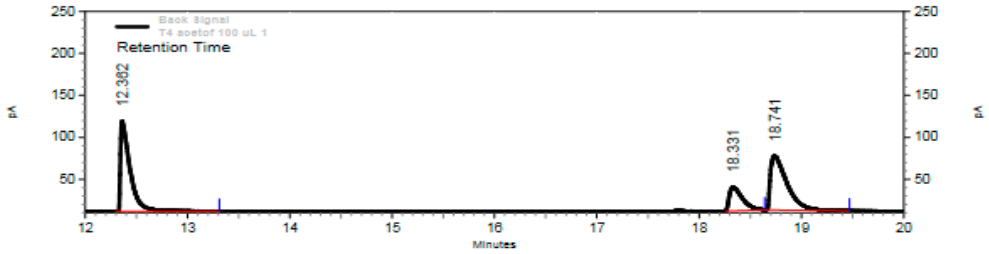
Back Signal
Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S54. GC-FID of bioreduction of 0.44 mmol of acetophenone (**1**) by *Talaromyces* sp. H4

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetof 100 uL 1.rslt\T4 acetof 100 uL 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\MT\LIMPEZA DA COLUNA COM SOLVENTE.met
Acquired: 9/4/2018 11:05:23 AM (GMT -08:00)
Printed: 9/4/2018 11:49:17 AM (GMT -08:00)



Back Signal Results

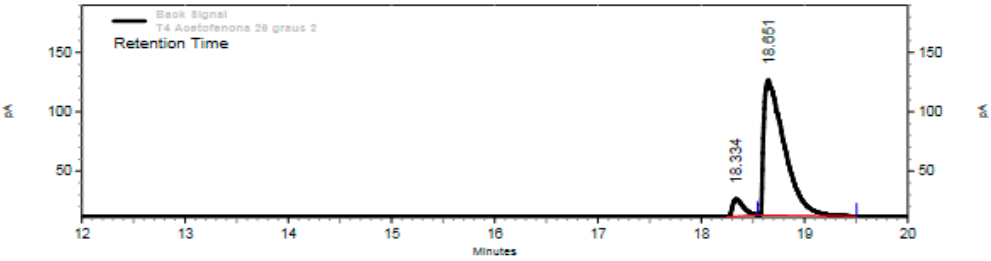
Retention Time	Area	Area %	Height	Height %
12.362	5358252	41.77	826958	53.67
18.331	1931254	15.06	218938	14.21
18.741	5537988	43.17	494906	32.12
Totals	12827494	100.00	1540802	100.00

Figure S55. GC-FID of bioreduction of 0.88 mmol of acetophenone (**1**) by *Talaromyces* sp. H4

3.7 Temperature effect

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 Acetofenona 26 graus 2.rslt\T4 Acetofenona 26 graus 2.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/14/2018 3:04:35 PM (GMT -08:00)
Printed: 9/14/2018 3:46:54 PM (GMT -08:00)



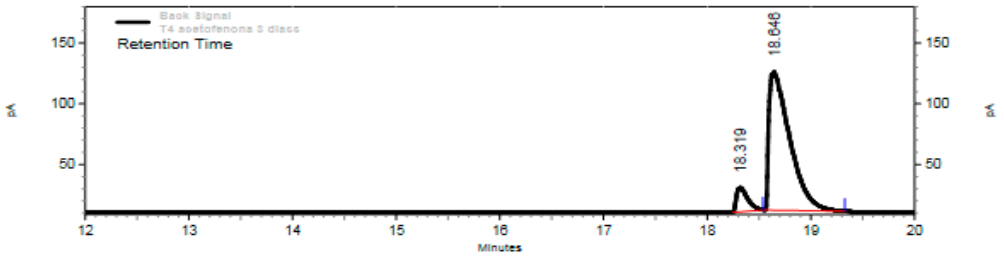
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.334	799944	6.21	111439	11.29
18.651	12079966	93.79	875385	88.71
Totals	12879910	100.00	986824	100.00

Figure S56. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 26°C

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Henrique Pereira\Resultados\T4 acetofenona 3 diass.rslt\T4 acetofenona 3 diass.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 11:25:42 AM (GMT -08:00)
Printed: 9/12/2018 12:03:52 PM (GMT -08:00)



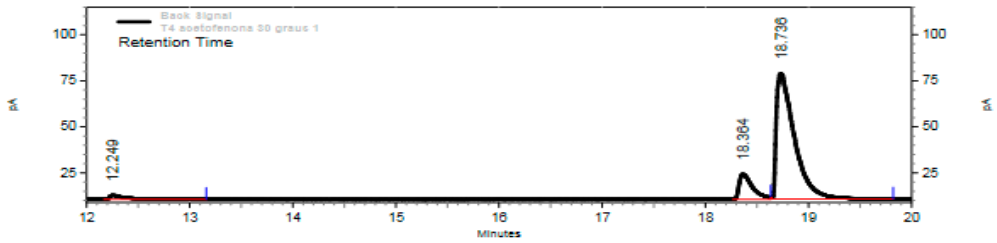
Back Signal Results

Retention Time	Area	Area %	Height	Height %
18.319	1145815	8.56	152575	14.84
18.646	12245560	91.44	875633	85.16
Totals	13391375	100.00	1028208	100.00

Figure S57. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 28°C

Area % Report

Data File: C:\Enterprise\Projects\Projects_backup\Eliane\Resultados\T4 acetofenona 30 graus 1.rslt\T4 acetofenona 30 graus 1.dat
Method: C:\Enterprise\Projects\Projects_backup\Jaque REIS\Method\metodos criados em 13.12.17 mestrado\PADRAO 14 FENIL E ACETOFENONA.met
Acquired: 9/12/2018 9:41:14 AM (GMT -08:00)
Printed: 9/12/2018 10:26:39 AM (GMT -08:00)

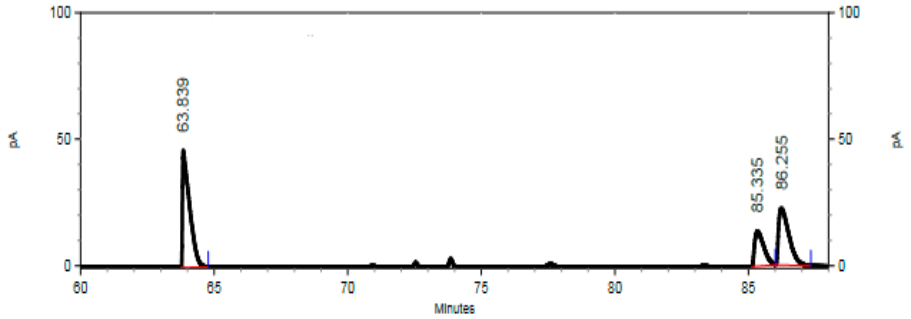


Back Signal Results

Retention Time	Area	Area %	Height	Height %
12.249	223177	2.94	17460	2.70
18.364	962141	12.66	105692	16.32
18.736	6415648	84.41	524442	80.98
Totals	7600966	100.00	647594	100.00

Figure S58. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 at 30°C

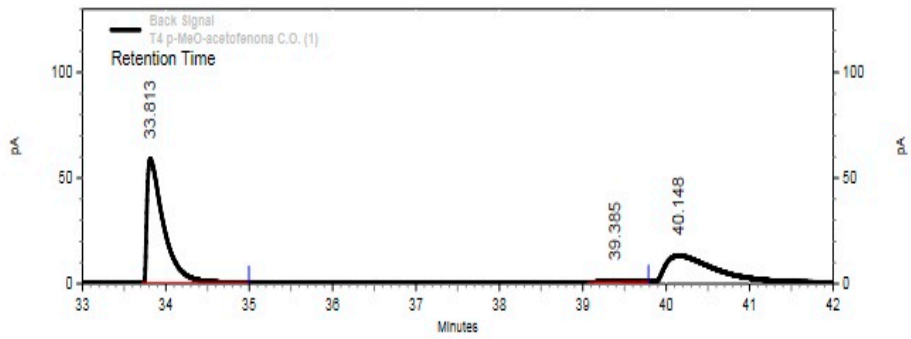
*4. Chromatograms of the bioreductions of acetophenone (**1**), 4´-nitroacetophenone (**2**), 4´-methoxyacetophenone (**3**), 4-chloroacetophenone (**4**), and 2-chloroacetophenone (**5**) into 1-phenylethanol (**1a**), 1-(4´-nitrophenyl)ethanol (**2a**), 1-(4´-methoxyphenyl)ethanol (**3a**), 1-(4´-chlorophenyl)ethanol (**4a**), and 1-(2-chlorophenyl)ethanol (**5a**) by Talaromyces sp. H4 under the optimized conditions.*



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
63.839	6546691	47.78	353620	56.00
85.335	2528045	18.45	106840	16.92
86.255	4625779	33.76	170969	27.08
Totals	13700515	100.00	631429	100.00

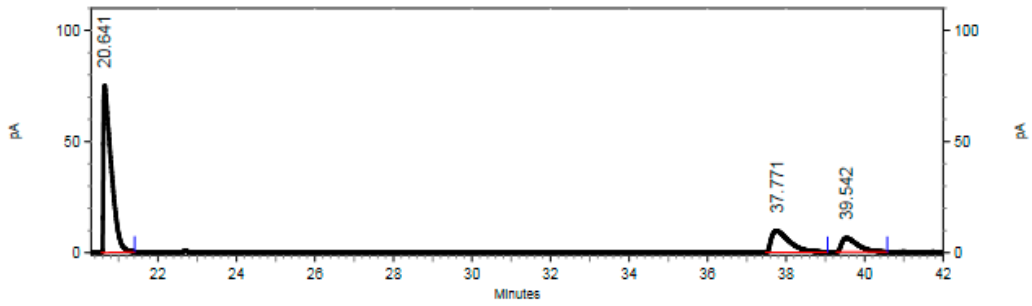
Figure S59. GC-FID of bioreduction of 4´-nitroacetophenone (**2**) by *Talaromyces* sp. H4



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
33.813	6288131	59.98	452329	81.20
39.385	190405	1.82	7981	1.43
40.148	4004556	38.20	96775	17.37
Totals	10483092	100.00	557085	100.00

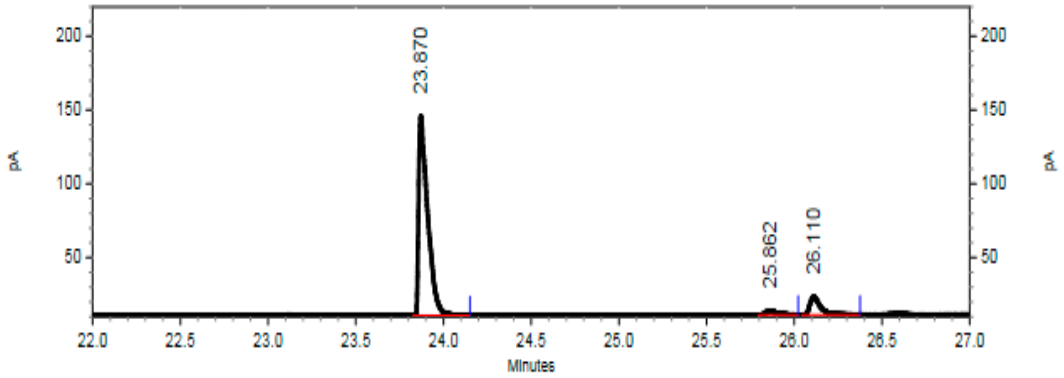
Figure S60. GC-FID of bioreduction of 4´-methoxyacetophenone (**4**) by *Talaromyces* sp. H4



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
20.641	7930683	67.68	576207	82.35
37.771	2402974	20.51	74756	10.68
39.542	1383686	11.81	48742	6.97
Totals	11717343	100.00	699705	100.00

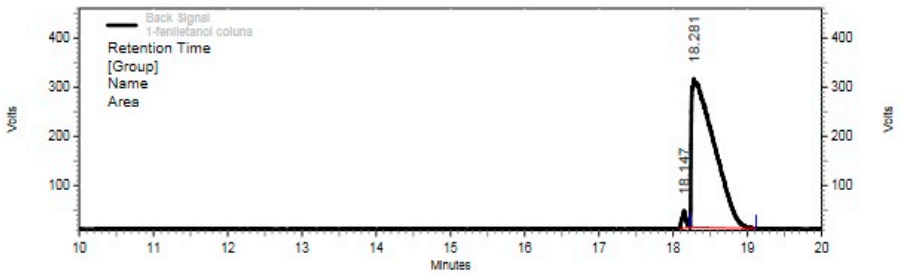
Figure S61. GC-FID of bioreduction of 4-chloroacetophenone (**4**) by *Talaromyces* sp. H4



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
23.870	3703117	88.34	1037071	89.91
25.862	94308	2.25	22204	1.93
26.110	394606	9.41	94145	8.16
Totals	4192031	100.00	1153420	100.00

Figure S62. GC-FID of bioreduction of 2-chloroacetophenone (**5**) by *Talaromyces* sp. H4



Back Signal
Results

Retention Time	Area	Area %	Height	Height %
18.147	980219	1.97	272453	10.54
18.281	48772667	98.03	2311893	89.46
Totals	49752886	100.00	2584346	100.00

Figure S63. GC-FID of bioreduction of acetophenone (**1**) by *Talaromyces* sp. H4 under the optimized conditions

5. Phylogenetic tree

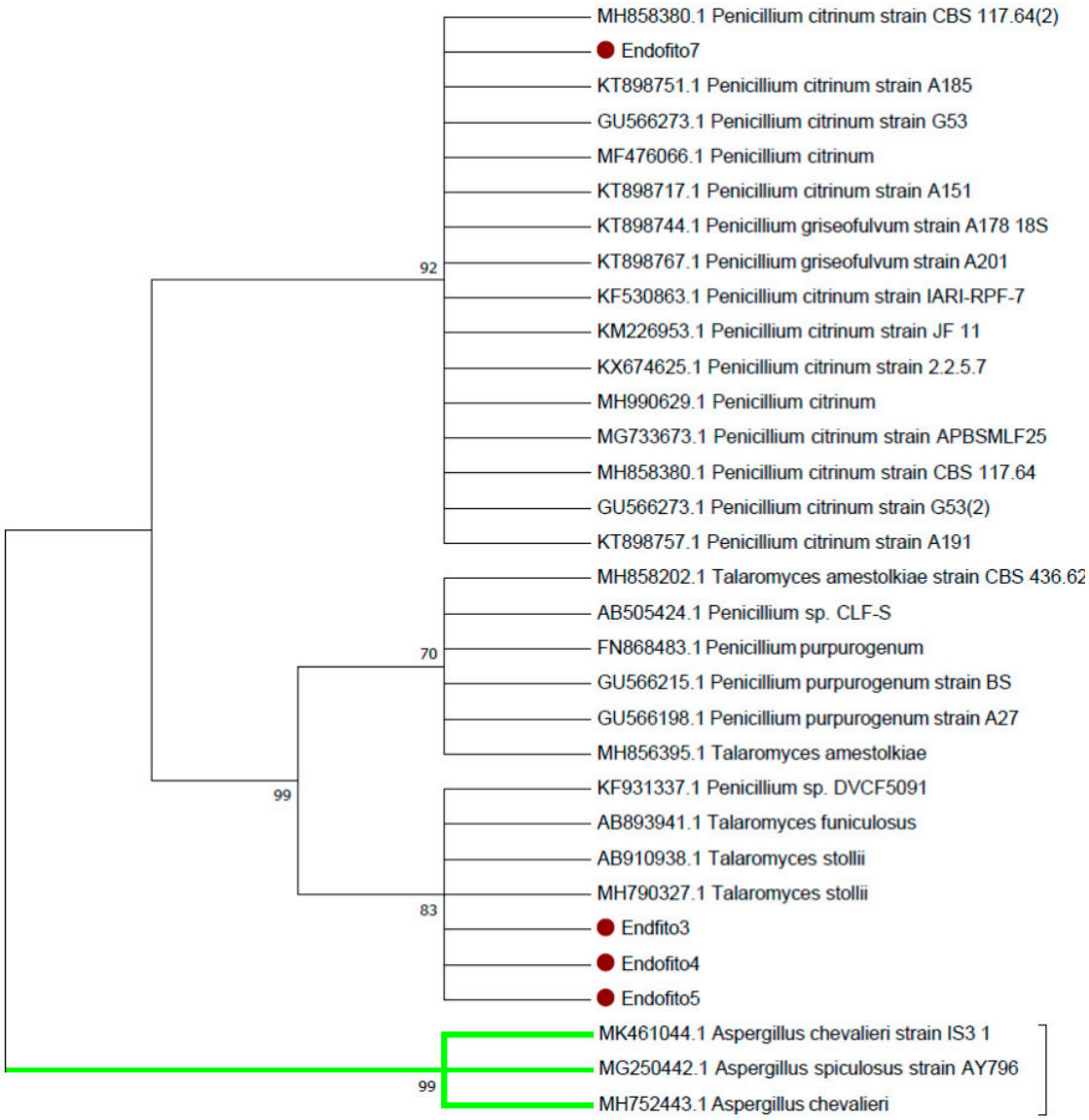


Figure S64. Neighbor-joining phylogenetic tree of endophytic fungus selected based on their ITS1-5.8S-ITS2 rDNA sequences. The optimal tree with the sum of branch length = 0.41458023 is shown. The percentage of replicate trees in which the associated taxa clustered together in the bootstrap test (1000 replicates) are shown next to the branches. The "Endofito 4" was identified as *Talaromyces* sp. H4.

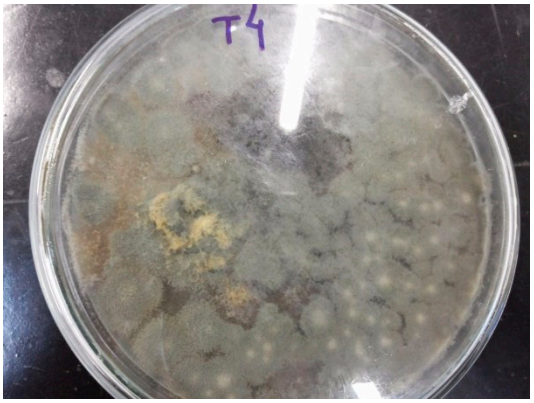
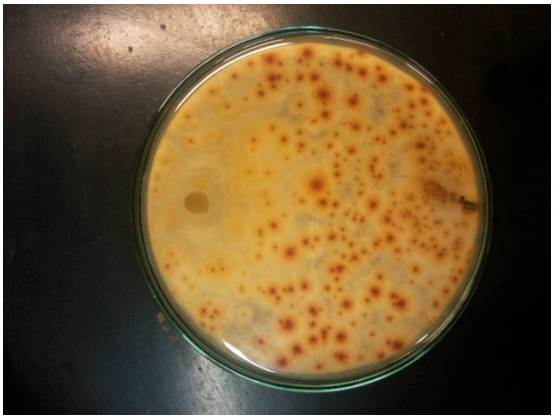
A	B
	

Figure S65. Macroscopic morphology of 7-day culture of *Talaromyces* sp. H4 isolated as an endophytic fungus from *Handroanthus impetiginosus*. **A** and **B**: front and back sides of the Petri dish, respectively.