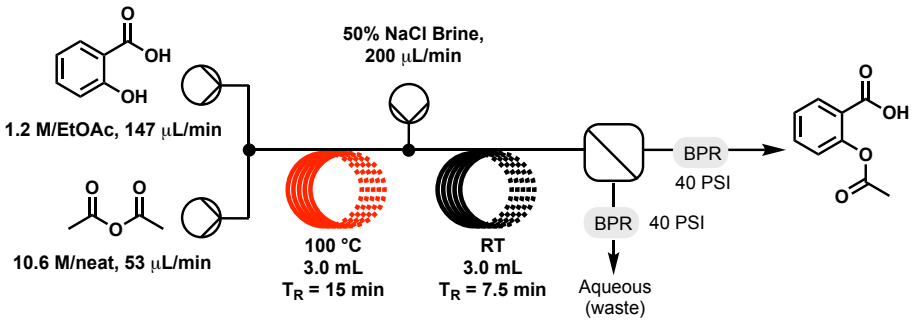
Aspirin

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)
Salicylic Acid	1.2000	1	146.6
H2SO4	0.1200	0.1	
Acetic Anhydride	10.6000	3.21157344	53.3
Brine (50%)	N/A		200

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Salicylic Acid (g)	8.29	138.12	0.06		
H2SO4 (mL)	0.30	98.08	0.006	1.84	
EtOAc (mL)	up to 50 mL				Sigma HPLC grade
Total Volume	50				

Stream 2					
Reagent	**Amount (mL)**	**MW**	**mmol**	**Density**	**Notes**
Acetic Anhydride (mL)	20.0399	102.09	212		Neat
Total Volume	20				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mmol**	**Density**	**Notes**
Brine (50%) (mL)					1:1 Distilled water to brine
Total Volume	100				

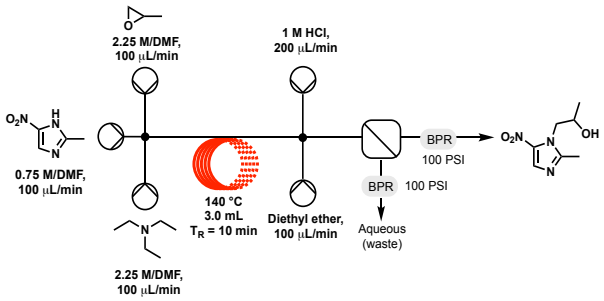
Reactor 1	
Volume	3 ml
Tubing Inner D	0.03"
Tubing L	658 cm
Res Time	15 min
Temp.	100 °C

Reactor 2	
Volume	3 ml
Tubing Inner D	0.03"
Tubing L	658 cm
Res Time	7.5 min
Temp.	RT

BPR	
Pressure	40 psi

Secnidazole

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
Propylene oxide	2.25	3.00	100.0	1.67	36
2-methyl-5nitroimidazole	0.75	1.00	100.0	1.67	36
Triethylamine	2.25	3.00	100	1.67	36
HCl	1.00	2.67	200	3.33	72
Diethyl Ether	9.62	12.83	100	1.67	36

Run Time (h) 6

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Propylene oxide (mL)	7.8723	58.08	0.11250	0.83	
DMF (mL)	up to 50 mL	73.09		0.944	
Total Volume	50				up to 50 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
2-methyl-5nitroimidazole (g)	4.7663	127.10	0.03750		
DMF (mL)	up to 50 mL	73.09		0.944	
Total Volume	50				up to 50 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Triethylamine (mL)	15.6803	101.19	0.1125	0.726	
DMF (mL)	up to 50 mL	73.09		0.944	
Total Volume	50				up to 50 mL in volumetric flask

Stream 4					
Reagent	**Amount (g or mL)**	**Conc**	**mol**	**Density**	**Notes**
HCl (mL)	8.2102	12.18	0.10	1.2	ACS reagent grade, 37%
water (mL)	up to 100 mL				
Total Volume	100				up to 100 mL in volumetric flask

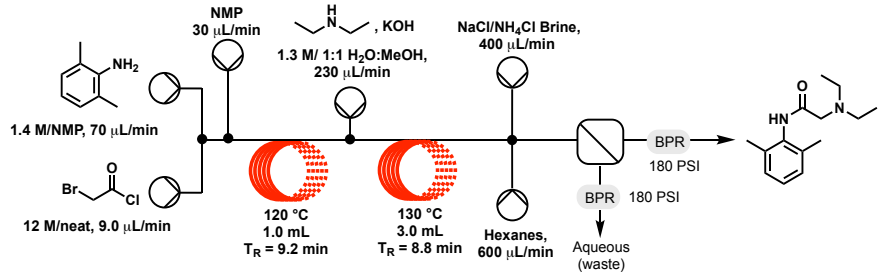
Stream 5					
Reagent	**Amount (g or mL)**	**Conc**	**mol**	**Density**	**Notes**
Diethyl Ether (mL)	50.0000	9.62	0.481	0.713	
Total Volume	50				

Reactor 1	
Volume	3 ml
Res Time	10 min
Temp.	140 °C

BPR	
Pressure	100 psig

Lidocaine

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
Xylidine	1.40	1.00	70.0	1.17	33.6
Bromoroacetyl chloride	12.01	1.10	9.0	0.15	4.32
NMP	10.37	3.17	30	0.50	14.4
Diehtylamine	1.28	3.00	230	3.83	110.4
Hexanes	7.80	47.74	600	10.00	288
NaCl/NH4Cl	3.42	13.96	400	6.67	192

Run Time (h) 8

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
xylidene (g)	8.48	121.18	0.07		
NMP (mL)	up to 50 mL				SPS but not rigorous anhydrous technique
Total Volume	50				up to 50 mL in volumetric flask

Stream 2					
Reagent	**Amount (mL)**	**MW**	**mol**	**Density**	**Notes**
Bromoacetyl chloride (mL)	10.0013	157.39	0.1201	1.89	Sigma (neat)
Total Volume	10				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
NMP (mL)	19.9996	99.13	0.2074	1.028	SPS but not rigoursly anhydrous in handling
Total Volume	20				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Diethylamine (mL)	18.5385	73.14	0.18	0.707	dissolve amine in MeOH
Methanol (mL)	60.68	32.04		0.791	Reagent grade nothing special
KOH (g)	3.35	56.11	0.06		dissolve KOH in DI water
DI water (mL)	60.68	18.02		1	
Total Volume	140				mix the two components together slowly (divide into 3 vials)

Stream 5					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Hexanes (mL)	368.0795	88.11	2.80728	0.672	Reagent grade nothing special
Total Volume	360				Need 6 full vials

Stream 6					
Reagent	**Amount (g or mL)**	**MW**	**mmol**	**Density**	**Notes**
NaCl (g)	50.0000	58.44	#REF!		
NH4Cl (g)	50.0000	53.49			
DI Water (mL)	500.0000	18.02			
Total Volume	500				Need 4 full vials

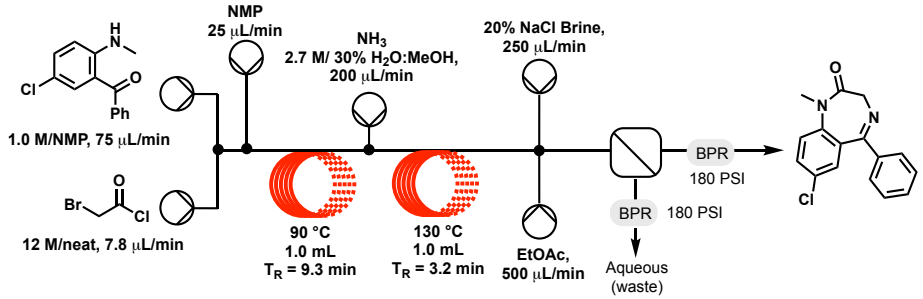
Reactor 1	
Volume	1 ml
Res Time	9.2 min
Temp.	120 °C

Reactor 2	
Volume	3 ml
Res Time	8.8 min
Temp.	130 °C

BPR	
Pressure	180 psig

Diazepam

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
Benzophenone	1.00	1.00	75.0	1.25	36
Bromoroacetyl chloride	12.01	1.25	7.8	0.13	3.744
NMP	10.37	3.46	25	0.42	12
Ammonia	2.70	7.20	200	3.33	96
Ethylacetate	10.24	68.27	500	8.33	240
NaCl	4.62	15.40	250	4.17	120

Run Time (h) 8

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Benzophenone (g)	12.29	245.70	0.05		
NMP (mL)	up to 50 mL				SPS but not rigorous anhydrous technique
Total Volume	50				up to 50 mL in volumetric flask

Stream 2					
Reagent	**Amount (mL)**	**MW**	**mol**	**Density**	**Notes**
Bromoacetyl chloride (mL)	10.0013	157.39	0.1201	1.89	Sigma (neat)
Total Volume	10				Unnecessary if we are doing back to back with lidocaine

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
NMP (mL)	19.9996	99.13	0.2074	1.028	SPS but not rigoursly anhydrous in handling
Total Volume	20				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ammonium Hydroxide (mL)	22.00	73.14	0.33	0.707	28-30% ACS grade from BDH, add to water
DI water (mL)	22.00	18.02		1	
Methanol (mL)	77.00	32.04		0.791	add to diluted ammonium hydroxide solution
Total Volume	121				divide into 2 vials

Stream 5					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ethylacetate (mL)	300.0000	88.11	3.072	0.902	Reagent grade nothing special
Total Volume	300				Need 5 full vials

Stream 6					
Reagent	**Amount (g or mL)**	**MW**	**mmol**	**Density**	**Notes**
NaCl (g)	40.5000	58.44	#REF!		
DI Water (mL)	150.0000	18.02			
Total Volume	150				Divide into 3 vials

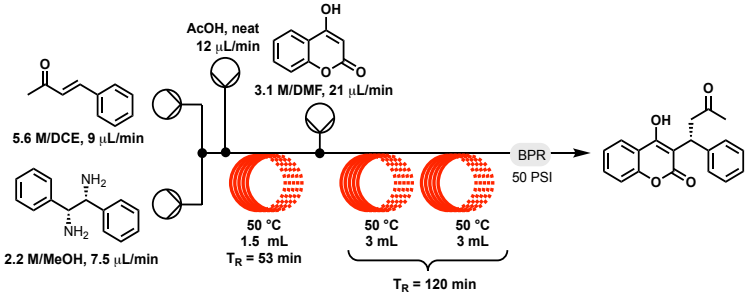
Reactor 1	
Volume	1 ml
Res Time	9.3 min
Temp.	90 °C

Reactor 2	
Volume	1 ml
Res Time	3.2 min
Temp.	130 °C

BPR	
Pressure	180 psig

Warfarin

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
Benzylacetone	5.60	1.00	9.0	0.15	12.96
(S,S)-DPEN	2.20	0.33	7.5	0.13	10.8
Acetic Acid	17.50	4.17	12	0.20	17.28
4-Hydroxycoumarin	3.10	1.29	21	0.35	30.24

Run Time (h) 24

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Benzylacetone (g)	20.4666	146.19	0.14000		
DCE	up to 25 mL	98.96		1.25	
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
(S,S)-DPEN (g)	11.6760	212.29	0.05500		
MeOH (mL)	up to 25 mL	32.04		0.792	
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Acetic Acid (mL)	25.0447	60.05	0.4375	1.049	
Total Volume	25				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4-Hydroxycoumarin (g)	25.1317	162.14	0.16		
DMF (mL)	up to 50 mL	73.09		0.944	
Total Volume	50				up to 50 mL in volumetric flask

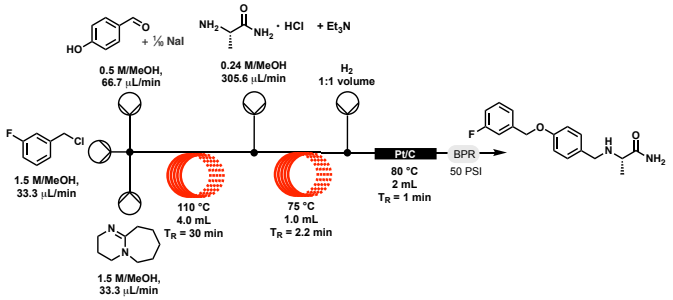
Reactor 1 + 2	
Volume	0.5 mL+ 1.0 mL
Res Time	53 min
Temp.	50 °C

Reactor 3 + 4	
Volume	3 ml + 3 mL
Res Time	120 min
Temp.	50 °C

BPR	
Pressure	50 psig

Safinamide

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Volume
4-hydoxybenzaldehyde	0.5000	1	66.7	40.0
Sodium iodide	0.0500	0.1		
3-Fluorobenyzl chloride	1.5000	1.49775112	33.3	40.0
DBU	1.5000	1.49775112	33.3	19.98
Alaninamide	0.2400	2.2	305.6	183.36

Time 10

Stream 1					
Reagent	**Amount (g /mL)**	**MW**	**mmol**	**Density**	**Notes**
4-hydroxybenzaldehyde (g)	3.053	122.12	0.025	/	
Sodium iodide (g)	0.374725	149.89	0.0025	/	
MeOH (mL)	up to 50 mL	/	/	/	
Total Volume	50	/	/	/	

Stream 2					
Reagent	**Amount (mL)**	**MW**	**mmol**	**Density**	**Notes**
3-Fluorobenzyl chloride (mL)	9.081030151	144.57	0.075	1.194	
MeOH (mL)	up to 50 mL				
Total Volume	50				

Stream 3					
Reagent	**Amount (mL)**	**MW**	**mmol**	**Density**	**Notes**
DBU (mL)	11.19411765	152.24	0.075	1.02	
MeOH (mL)	up to 50 mL				
Total Volume	50				

Stream 4					
Reagent	**Amount (g/mL)**	**MW**	**mmol**	**Density**	**Notes**
Alaninamide (g)	7.4742	124.57	0.06	/	
NEt3 (mL)	8.362809917	101.19	0.06	0.726	
MeOH (mL)	up to 250 mL				
Total Volume	250				

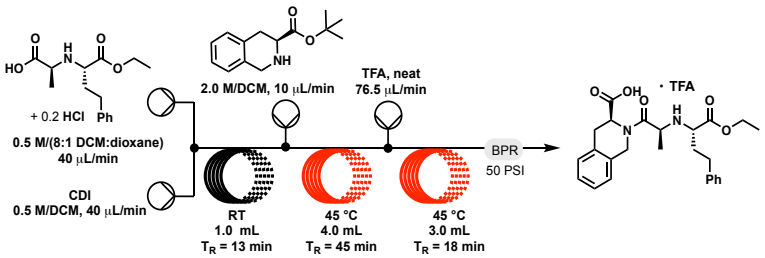
Reactor 1	
Volume	4 ml
Tubing Inner D	0.03"
Tubing L	880 cm
Res Time	30 min
Temp.	110 °C

Reactor 2	
Volume	1 ml
Tubing Inner D	0.03"
Tubing L	220
Res Time	2.3 min
Temp.	75

BPR	
Pressure	150 psi

Quinapril

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine	0.50	1.00	40.0	0.67	28.8
CDI	0.50	1.00	40.0	0.67	28.8
tert-butyl (S)-1,2,3,4-tetrahydroisoquinoline-3-carboxylate	2.00	1.00	10	0.17	7.2
TFA	13.06	49.95	76.5	1.28	55.08

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine (g)	3.4918	279.34	0.01250		
HCl (mL)	0.63	36.46	0.00250		4 M in 1,4-dioxane
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
CDI (g)	2.0269	162.15	0.0125		
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
TFA (mL)	49.9698	114	0.653	1.49	Neat
Total Volume	50				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
tert-butyl (S)-1,2,3,4-tetrahydroisoquinoline-3-carboxylate (g)	4.6662	233.31	0.02		
DCM (mL)	up to 10 mL				SPS but not rigorous anhydrous technique
Total Volume	10				up to 10 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	13 min
Temp.	rt

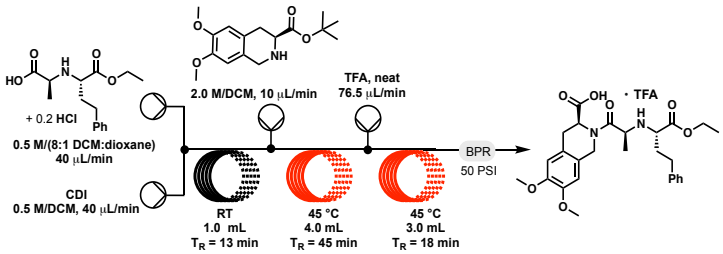
Reactor 2	
Volume	1 ml
Res Time	11 min
Temp.	45 °C

Reactor 3	
Volume	3 ml
Res Time	18 min
Temp.	45 °C

BPR	
Pressure	50 psig

Moexipril

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine	0.50	1.00	40.0	0.67	28.8
CDI	0.50	1.00	40.0	0.67	28.8
tert-butyl (S)-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline-3-carboxylate	2.00	1.00	10	0.17	7.2
TFA	13.06	49.95	76.5	1.28	55.08

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine (g)	3.4918	279.34	0.01250		
HCl (mL)	0.63	36.46	0.00250		4 M in 1,4-dioxane
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
CDI (g)	2.0269	162.15	0.0125		
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
TFA (mL)	49.9698	114	0.653	1.49	Neat
Total Volume	50				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
tert-butyl (S)-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline-3-carboxylate (g)	5.8672	293.36	0.02		
DCM (mL)	up to 10 mL				SPS but not rigorous anhydrous technique
Total Volume	10				up to 10 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	13 min
Temp.	rt

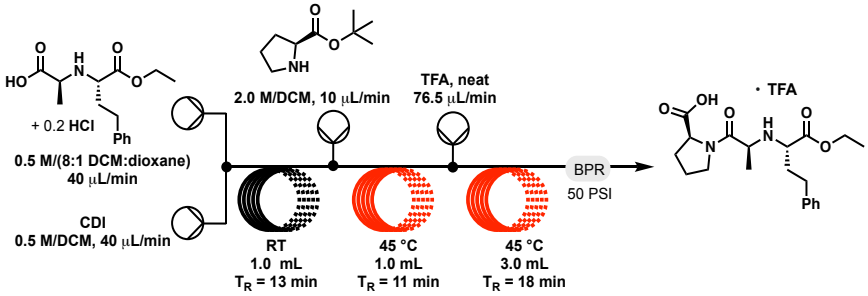
Reactor 2	
Volume	1 ml
Res Time	11 min
Temp.	45 °C

Reactor 3	
Volume	3 ml
Res Time	18 min
Temp.	45 °C

BPR	
Pressure	50 psig

Enalapril

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
N-Substituted Alanine	0.50	1.00	40.0	0.67	28.8
CDI	0.50	1.00	40.0	0.67	28.8
tert-Butyl L-Prolinate	2.00	1.00	10	0.17	7.2
TFA	13.06	49.95	76.5	1.28	55.08

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
N-Substituted Alanine (g)	3.4918	279.34	0.01250		
HCl (mL)	0.63	36.46	0.00250		4 M in 1,4-dioxane
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
CDI (g)	2.0269	162.15	0.0125		
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
TFA (mL)	49.9698	114.02	0.653	1.49	Neat
Total Volume	50				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
tert-Butyl L-Prolinate (g)	3.4248	171.24	0.02		
DCM (mL)	up to 10 mL				SPS but not rigorous anhydrous technique
Total Volume	10				up to 10 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	13 min
Temp.	rt

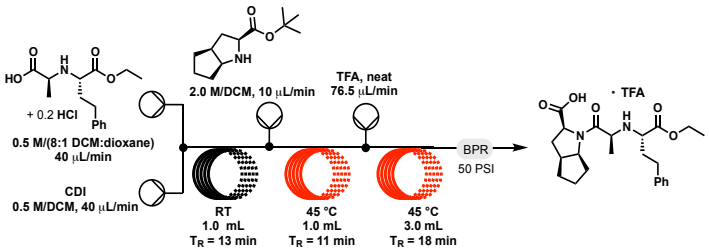
Reactor 2	
Volume	1 ml
Res Time	11 min
Temp.	45 °C

Reactor 3	
Volume	3 ml
Res Time	18 min
Temp.	45 °C

BPR	
Pressure	50 psig

Ramipril

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine	0.50	1.00	40.0	0.67	28.8
CDI	0.50	1.00	40.0	0.67	28.8
tert-butyl (2S,3aS,6aS)-octahydrocyclopenta[b]pyrrole-2-carboxylate	2.00	1.00	10	0.17	7.2
TFA	13.06	49.95	76.5	1.28	55.08

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine (g)	3.4918	279.34	0.01250		
HCl (mL)	0.63	36.46	0.00250		4 M in 1,4-dioxane
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
CDI (g)	2.0269	162.15	0.0125		
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
TFA (mL)	49.9698	114	0.653	1.49	Neat
Total Volume	50				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
tert-butyl (2S,3aS,6aS)-octahydrocyclopenta[b]pyrrole-2-carboxylate (g)	4.2262	211.31	0.02		
DCM (mL)	up to 10 mL				SPS but not rigorous anhydrous technique
Total Volume	10				up to 10 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	13 min
Temp.	rt

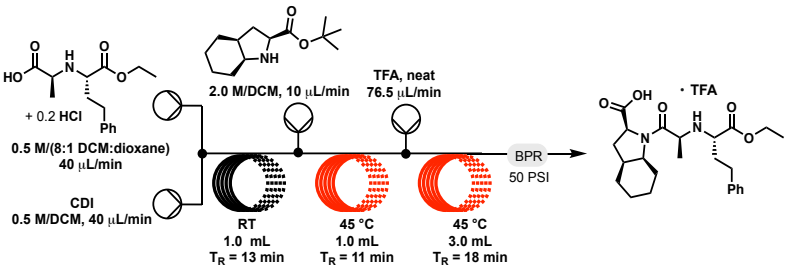
Reactor 2	
Volume	1 ml
Res Time	11 min
Temp.	45 °C

Reactor 3	
Volume	3 ml
Res Time	18 min
Temp.	45 °C

BPR	
Pressure	50 psig

Indolapril

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine	0.50	1.00	40.0	0.67	28.8
CDI	0.50	1.00	40.0	0.67	28.8
tert-butyl (2S,3aS,7aS)-octahydro-1H-indole-2-carboxylate	2.00	1.00	10	0.17	7.2
TFA	13.06	49.95	76.5	1.28	55.08

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
N-[(S)-1-Ethoxycarbonyl-3-phenylpropyl]-L-alanine (g)	3.4918	279.34	0.01250		
HCl (mL)	0.63	36.46	0.00250		4 M in 1,4-dioxane
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
CDI (g)	2.0269	162.15	0.0125		
DCM (mL)	up to 25 mL				SPS but not rigorous anhydrous technique
Total Volume	25				up to 25 mL in volumetric flask

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
TFA (mL)	49.9698	114	0.653	1.49	Neat
Total Volume	50				

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
tert-butyl (2S,3aS,7aS)-octahydro-1H-indole-2-carboxylate (g)	4.2262	211.31	0.02		
DCM (mL)	up to 10 mL				SPS but not rigorous anhydrous technique
Total Volume	10				up to 10 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	13 min
Temp.	rt

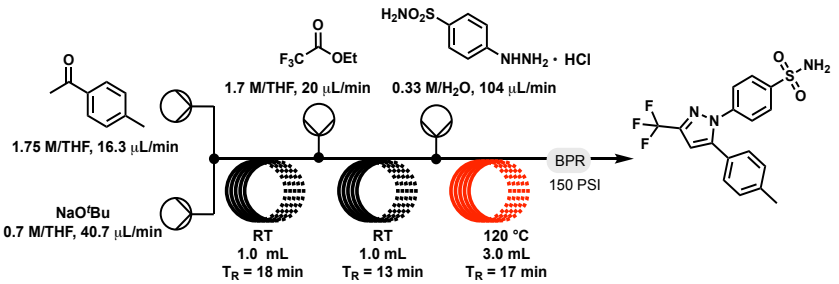
Reactor 2	
Volume	1 ml
Res Time	11 min
Temp.	45 °C

Reactor 3	
Volume	3 ml
Res Time	18 min
Temp.	45 °C

BPR	
Pressure	50 psig

Celebrex

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
4'-Methylacetophenone	1.75	1.00	16.3	0.27	11.736
Sodium *tert*-butoxide	0.70	1.00	40.7	0.68	29.304
Ethyl trifluoroacetate	1.70	1.19	20	0.33	14.4
4-sulfonamidophenylhydrazine	0.33	1.20	104	1.73	74.88

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4'-Methylacetophenone (mL)	5.8412	134.18	0.04375	1.005	
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
Sodium tert-butoxide (g)	4.0362	96.10	0.04200		
THF (mL)	60 mL	72.11		0.889	SPS, prepared in glovebox, filtered
Total Volume	60				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ethyl trifluoroacetate (g)	6.0384	142.08	0.0425		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4-sulfonamidophenylhydrazine (g	7.3814	223.68	0.03		
Water (mL)	up to 100 mL	18.02		1	
Total Volume	100				up to 100 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	18 min
Temp.	rt

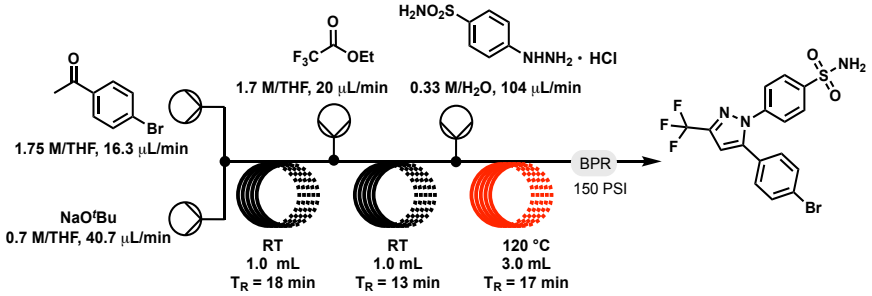
Reactor 2	
Volume	1 ml
Res Time	13 min
Temp.	rt

Reactor 3	
Volume	3 ml
Res Time	17 min
Temp.	120 °C

BPR	
Pressure	150 psig

170569-93-4

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
4'-Bromoacetophenone	1.75	1.00	16.3	0.27	11.736
Sodium *tert*-butoxide	0.70	1.00	40.7	0.68	29.304
Ethyl trifluoroacetate	1.70	1.19	20	0.33	14.4
4-sulfonamidophenylhydrazine	0.33	1.20	104	1.73	74.88

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4'-Bromoacetophenone (g)	8.7080	199.04	0.04375		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
Sodium tert-butoxide (g)	4.0362	96.10	0.04200		
THF (mL)	60 mL	72.11		0.889	SPS, prepared in glovebox, filtered
Total Volume	60				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ethyl trifluoroacetate (g)	6.0384	142.08	0.0425		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4-sulfonamidophenylhydrazine (g	7.3814	223.68	0.03		
Water (mL)	up to 100 mL	18.02		1	
Total Volume	100				up to 100 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	18 min
Temp.	rt

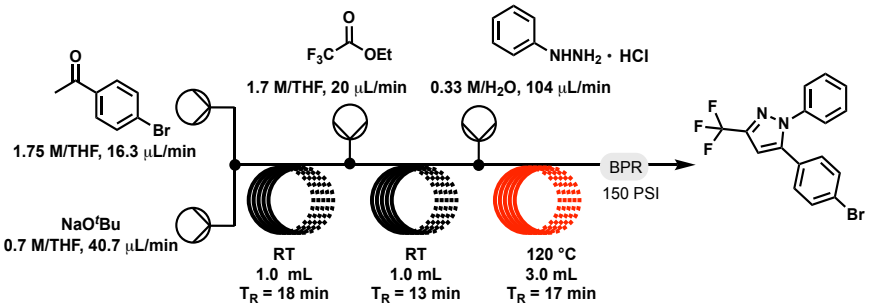
Reactor 2	
Volume	1 ml
Res Time	13 min
Temp.	rt

Reactor 3	
Volume	3 ml
Res Time	17 min
Temp.	120 °C

BPR	
Pressure	150 psig

586333-33-7

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
4'-Bromoacetophenone	1.75	1.00	16.3	0.27	11.736
Sodium *tert*-butoxide	0.70	1.00	40.7	0.68	29.304
Ethyl trifluoroacetate	1.70	1.19	20	0.33	14.4
4-sulfonamidophenylhydrazine	0.33	1.20	104	1.73	74.88

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4'-Bromoacetophenone (g)	8.7080	199.04	0.04375		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
Sodium tert-butoxide (g)	4.0362	96.10	0.04200		
THF (mL)	60 mL	72.11		0.889	SPS, prepared in glovebox, filtered
Total Volume	60				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ethyl trifluoroacetate (g)	6.0384	142.08	0.0425		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Phenylhydrazine•HCl (g)	4.7718	144.60	0.03		
Water (mL)	up to 100 mL	18.02		1	
Total Volume	100				up to 100 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	18 min
Temp.	rt

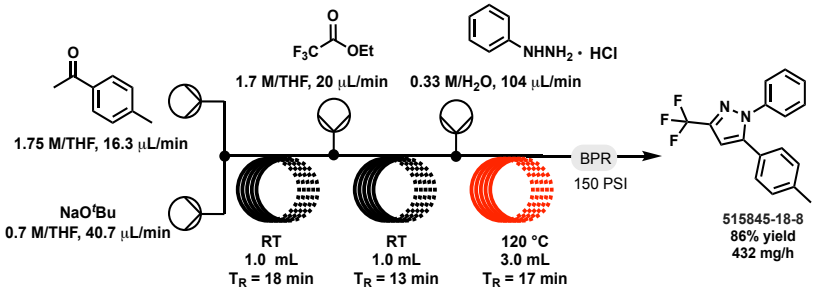
Reactor 2	
Volume	1 ml
Res Time	13 min
Temp.	rt

Reactor 3	
Volume	3 ml
Res Time	17 min
Temp.	120 °C

BPR	
Pressure	150 psig

515845-18-8

Date:	
Reference:	



Stream	Conc (mol/L)	Equiv	Flow (uL/min)	Flow (uL/s)	Volume Required For Run (mL)
4'-Methylacetophenone	1.75	1.00	16.3	0.27	11.736
Sodium *tert*-butoxide	0.70	1.00	40.7	0.68	29.304
Ethyl trifluoroacetate	1.70	1.19	20	0.33	14.4
Phenylhydrazine•HCl	0.33	1.20	104	1.73	74.88

Run Time (h) 12

Stream 1					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
4'-Methylacetophenone (mL)	5.8412	134.18	0.04375	1.005	
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 2					
Reagent	**Amount (g)**	**MW**	**mol**	**Density**	**Notes**
Sodium tert-butoxide (g)	4.0362	96.10	0.04200		
THF (mL)	60 mL	72.11		0.889	SPS, prepared in glovebox, filtered
Total Volume	60				

Stream 3					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Ethyl trifluoroacetate (g)	6.0384	142.08	0.0425		
THF (mL)	up to 25 mL	72.11		0.889	
Total Volume	25				up to 25 mL in volumetric flask

Stream 4					
Reagent	**Amount (g or mL)**	**MW**	**mol**	**Density**	**Notes**
Phenylhydrazine•HCl (g)	4.7718	144.60	0.03		
Water (mL)	up to 100 mL	18.02		1	
Total Volume	100				up to 100 mL in volumetric flask

Reactor 1	
Volume	1 ml
Res Time	18 min
Temp.	rt

Reactor 2	
Volume	1 ml
Res Time	13 min
Temp.	rt

Reactor 3	
Volume	3 ml
Res Time	17 min
Temp.	120 °C

BPR	
Pressure	150 psig