

Supporting Information

A Continuous Flow Protocol for Light-Induced Benzylic Fluorinations

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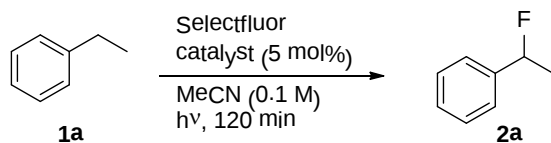
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Table S1. Detailed Data on the Preliminary Batch Optimization of the Reaction Conditions for the Light-Induced Fluorination of Ethylbenzene (1a).^{a,b}



Entry	Solvent	Catalyst	Selectfluor (equiv)	conversion (%) ^c	Temperature (°C)	Light source ^d
1 ^e	MeCN	Fluorenone	2	<1	25	W
2	MeCN	Fluorenone	2	53	25	W
3	MeCN	Xanthone	2	60	25	W
4	MeCN	Anthraquinone	2	52	25	W
5	MeCN	Eosin Y	2	<1	25	W
6	MeCN	Eosin B	2	<1	25	W
7	MeCN	Rose Bengal	2	<1	25	W
8	MeOH	Fluorenone	2	<1	25	W
9	THF	Fluorenone	2	<1	25	W
10	THF ^f	Fluorenone	2	<1	25	W
11	iPrOH	Fluorenone	2	<1	25	W
12	DMC	Fluorenone	2	<1	25	W
13	Acetone	Fluorenone	2	4	25	W
14	THF/water 1:1	Fluorenone	2	<1	25	W
15	MeCN/water 3:1	Fluorenone	2	<1	25	W
16	MeCN	Fluorenone (10 mol%)	2	42	25	W
17	MeCN	Fluorenone (3 mol%)	2	38	25	W

(Table S1, continued)

18	MeCN	Fluorenone (1 mol%)	2	20	25	W
19	MeCN	Xanthone (10 mol%)	2	50	25	W
20	MeCN	Xanthone (3 mol%)	2	47	25	W
21	MeCN	Xanthone (1 mol%)	2	30	25	W
22	MeCN	Fluorenone	2	59	40	W
23	MeCN	Xanthone	2	85	40	W
24 ^g	MeCN	Fluorenone	2	63	60	W
25 ^g	MeCN	Xanthone	2	69	60	W
26 ^h	MeCN	Xanthone	2	80	60, 1h	W
27 ^h	MeCN	Xanthone	1.2	73	60, 1h	W
28	MeCN	Fluorenone	1.2	30	25	B
29 ^h	MeCN	Xanthone	1.2	92	25, 1h	B
30 ^h	MeCN	Xanthone	1.1	90	25, 1h	B
31 ^h	MeCN	Xanthone	1.2	94	40, 1h	B
32 ⁱ	MeCN	Xanthone	1.2	<1	25	-

^a Conditions: 0.2 mmol ethylbenzene (**1a**), 2 mL MeCN, 5 mol% catalyst. ^b Selected data results are shown in Table 1. ^c Measured by GC-FID. ^d W: 30W cool-white lamp; B: 25W black-light lamp. ^e Reaction mixture not degassed. ^f Inhibitor-free THF. ^g Side products observed by GC-MS. ^h 60 min reaction. ⁱ The reaction mixture was placed in a sealed vial covered with aluminum foil, degassed and kept at room temperature for two hours.

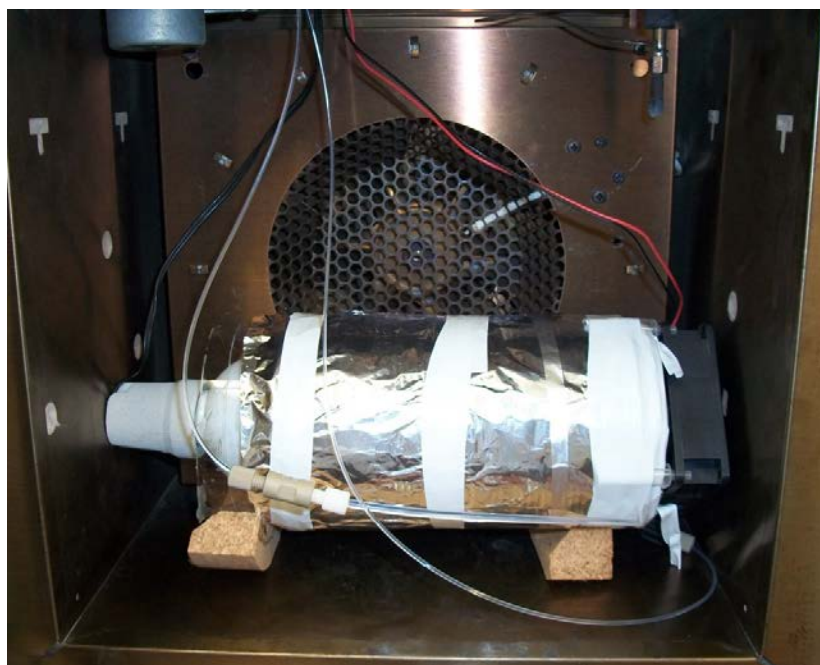
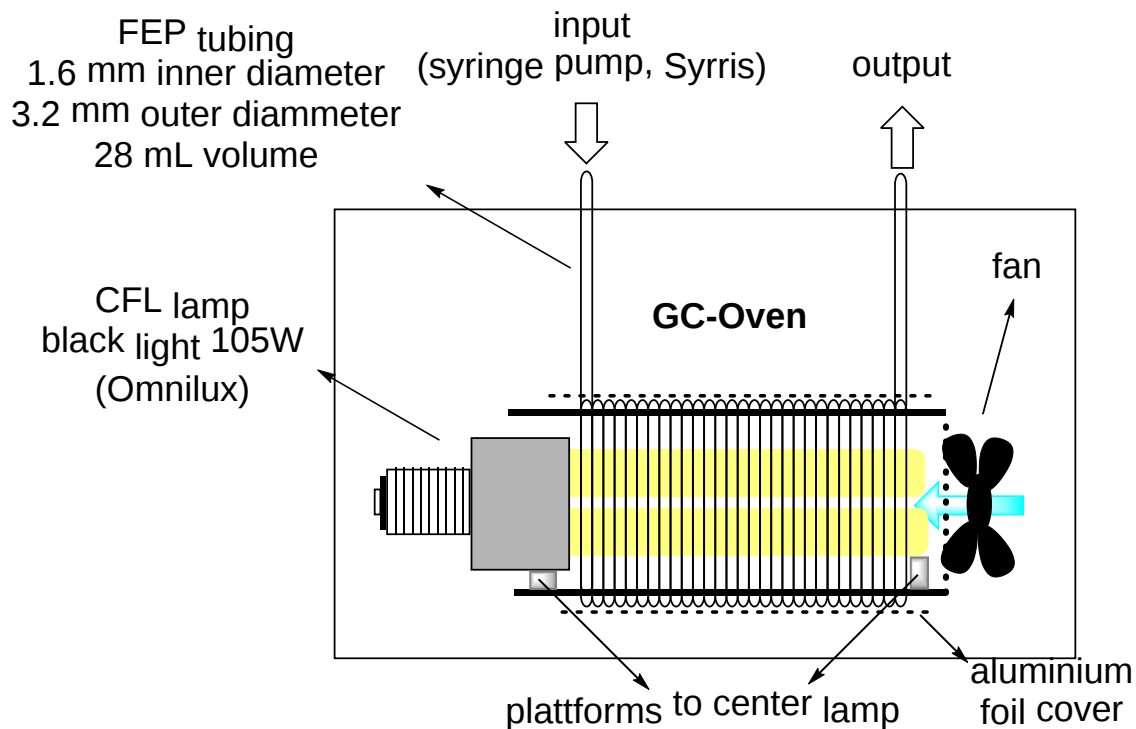


Figure S1. Continuous flow photoreactor employed for the fluorination of benzylic compounds.

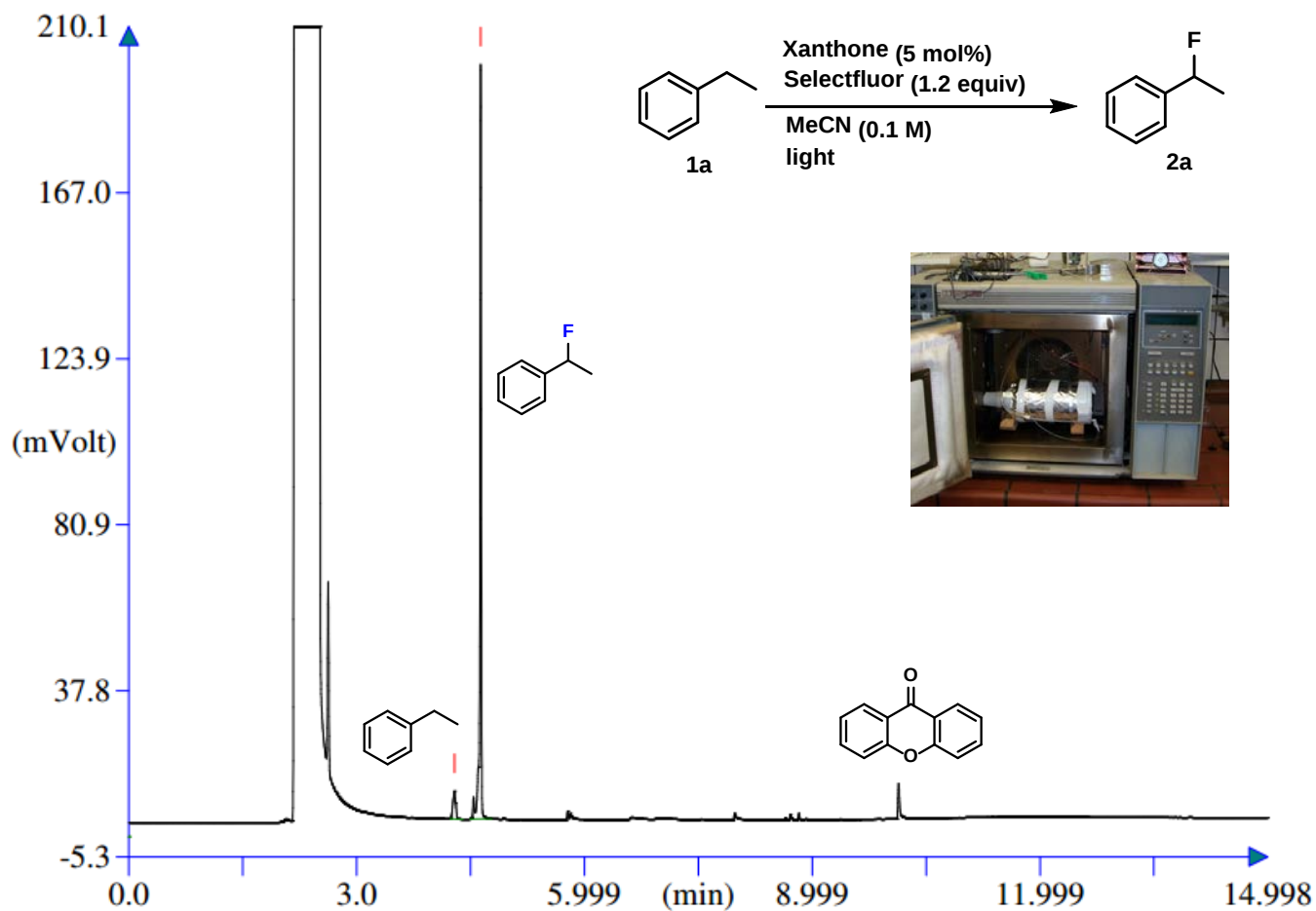


Figure S2. GC-FID chromatogram of the crude reaction mixture for the fluorination of ethylbenzene after processing with our continuous flow procedure at 25 °C.

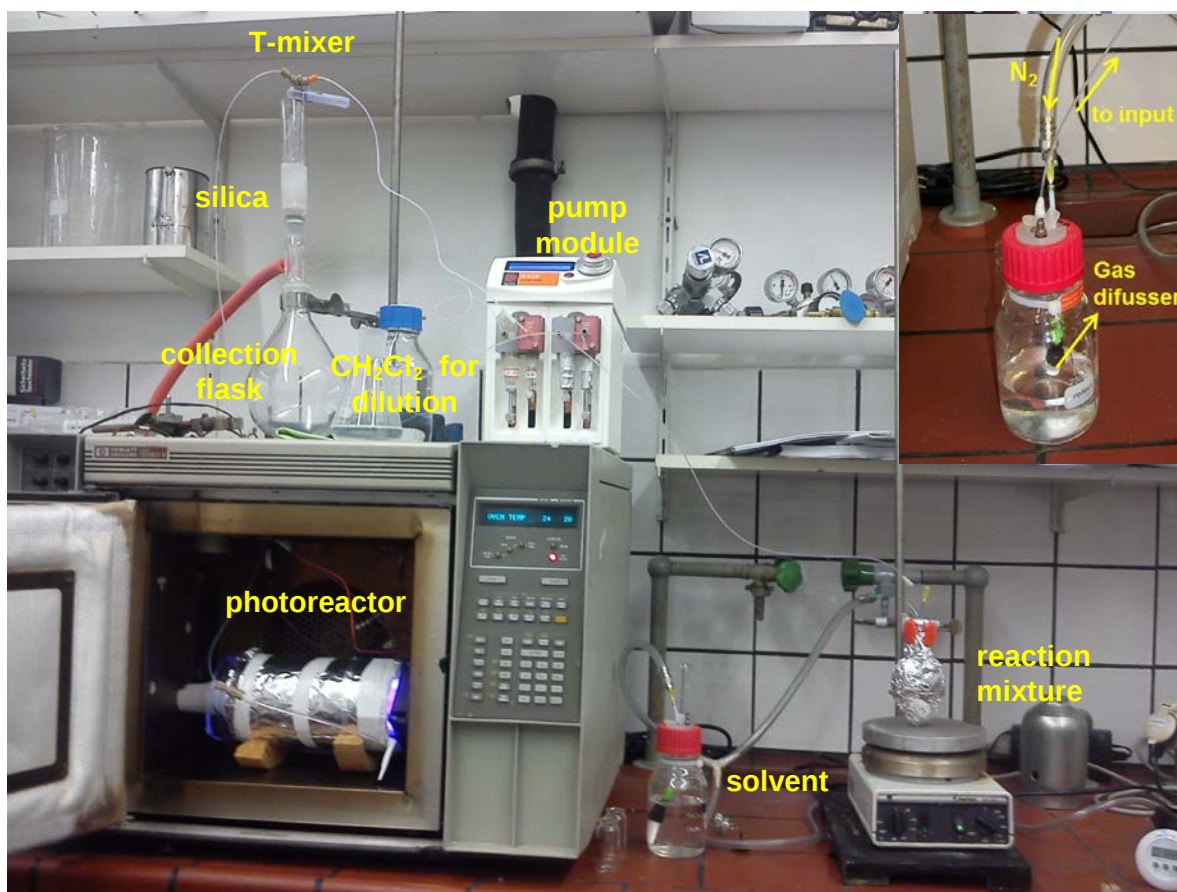
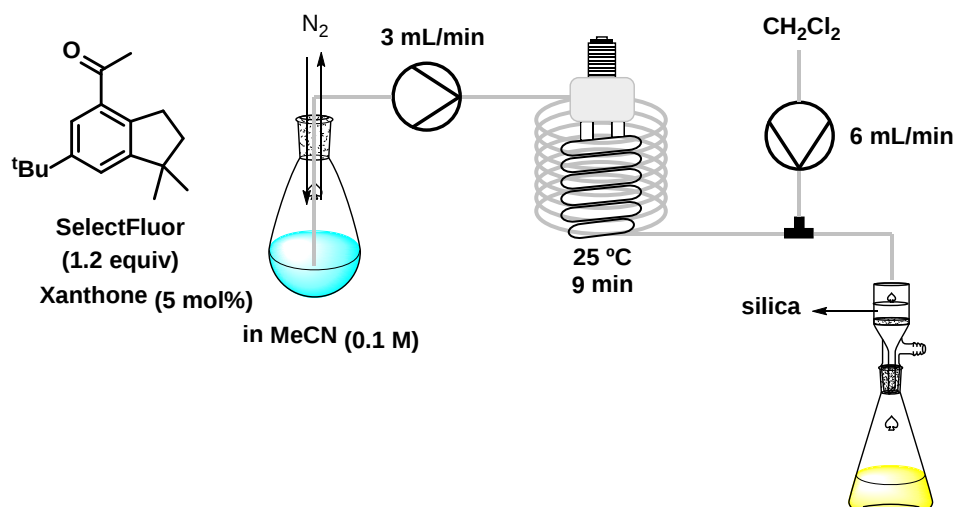


Figure S3. Modified flow setup for the continuous fluorination of celestolide.

