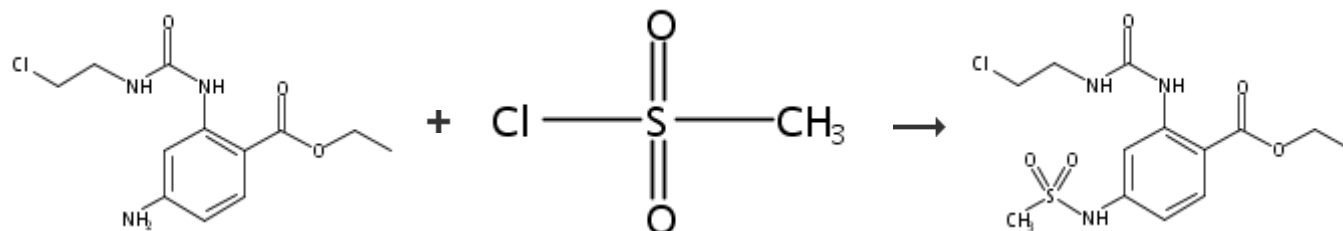


## 1. 9 Steps (Converging)

Sequence 1 | Sequence 2

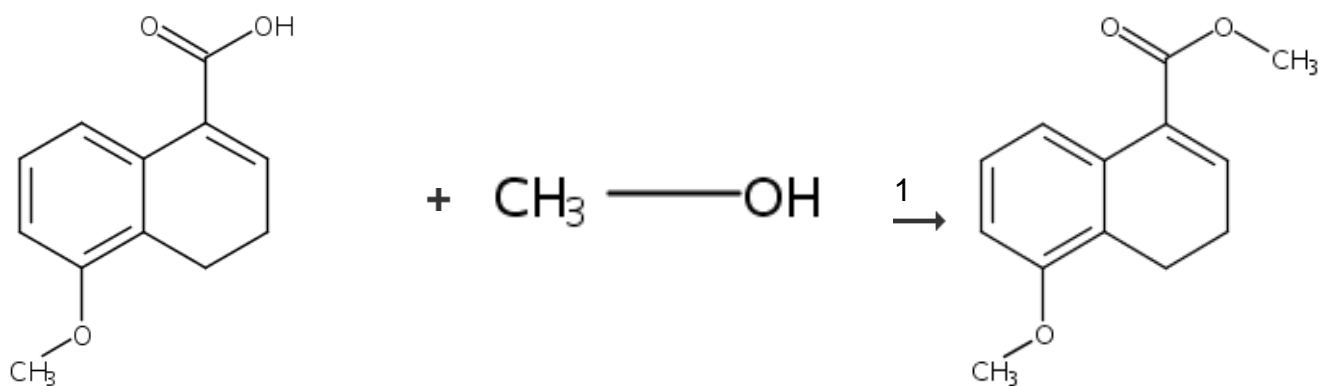
## Single Step



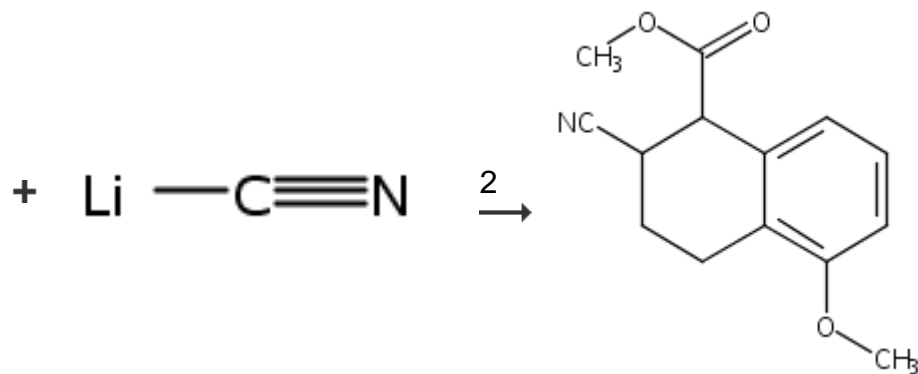
Step	Stages	Notes	Yield
1	1.1	R:C <sub>5</sub> H <sub>5</sub> N, S:CH <sub>2</sub> Cl <sub>2</sub> , 0°C; overnight, rt	Reactants: 2, Reagents: 2, Solvents: 1, Steps: 1, Stages: 2
	1.2	R:H <sub>2</sub> O	60%

Sequence 1 | **Sequence 2**

## 8 Steps

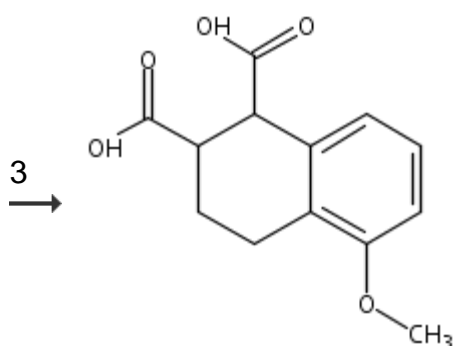


Step	Stages	Notes	Yield
1	1.1	R:H <sub>2</sub> SO <sub>4</sub> , S:H <sub>2</sub> O, S:MeOH, 18 h, reflux; cooled	Reactants: 2, Reagents: 2, Solvents: 2, Steps: 1, Stages: 2
	1.2	R:H <sub>2</sub> O, cooled	94%

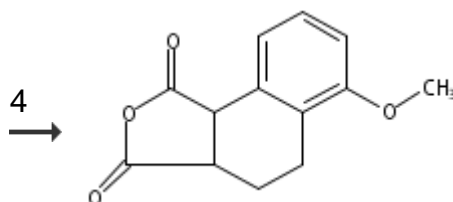
SciFinder®  
Rxn1

[Reactant]

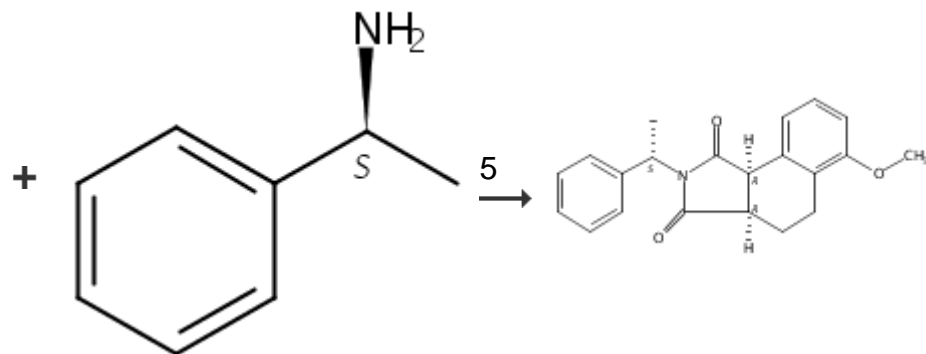
Step	Stages	Notes	Yield
2	2.1 R:AcOH, S:DMF, 15 min, rt; 3.5 h, 25°C 2.2 R:H <sub>2</sub> O, cooled	Reactants: 2, Reagents: 2, Solvents: 1, Steps: 1, Stages: 2	92%



Step	Stages	Notes	Yield
3	3.1 R:KOH, S:H <sub>2</sub> O, S:EtOH, 10 h, reflux 3.2 R:HCl, S:H <sub>2</sub> O, cooled, pH 1	Reactants: 1, Reagents: 2, Solvents: 2, Steps: 1, Stages: 2	62%

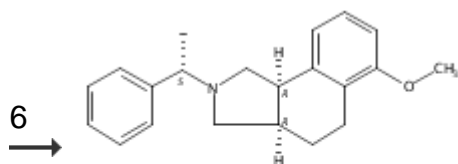


Step	Stages	Notes	Yield
4	4.1 S:Ac <sub>2</sub> O, 4 h, reflux	Reactants: 1, Solvents: 1, Steps: 1, Stages: 1	81%



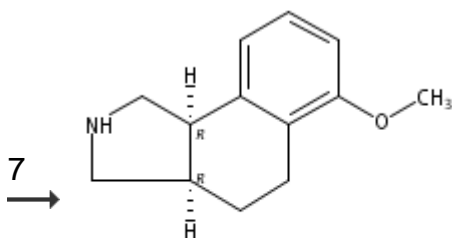
[Reactant]

Step	Stages	Notes	Yield
5	5.1 S:Xylene, rt → reflux <b>Additional Product(s):</b>	Dean-Stark trap used, stereoselective, Reactants: 2, Solvents: 1, Steps: 1, Stages: 1	81% / 48%
			48%



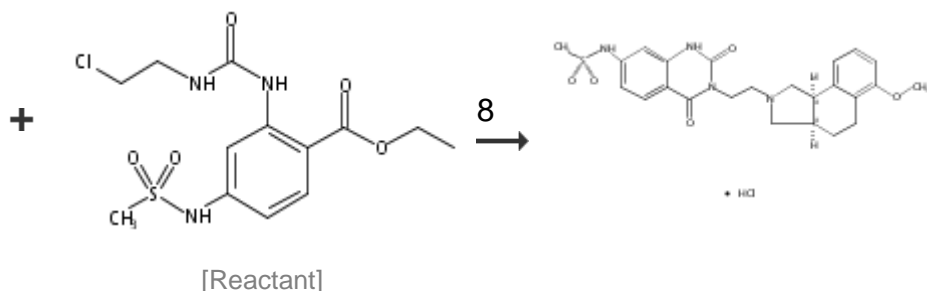
• HCl

Step	Stages	Notes	Yield
6	6.1 R: $\text{BH}_3$ , S: THF, 5 min, rt; 2 h, reflux; reflux → 25°C 6.2 R: MeOH, 25°C 6.3 R: HCl, S: MeOH, S: $\text{Me}_2\text{CHOH}$ , 3 h, reflux	HCl gas used in stage 3, Reactants: 1, Reagents: 3, Solvents: 3, Steps: 1, Stages: 3	90%



• HCl

Step	Stages	Notes	Yield
7	7.1	R:H <sub>2</sub> , C: Pd, S: MeOH, 24 h, rt, 4 atm	Reactants: 1, Reagents: 1, Catalysts: 1, Solvents: 1, Steps: 1, Stages: 1 89%



Step	Stages	Notes	Yield
8	8.1	R: EtN(Pr- <i>i</i> ) <sub>2</sub> , S: MeCN, 48 h, reflux	Reactants: 2, Reagents: 2, Solvents: 1, Steps: 1, Stages: 2 32%
	8.2	R: HCl	

**Source****Preparation of bicyclic-substituted hexahydrobenz[e]isoindoles as  $\alpha$ 1 adrenergic antagonists**

Meyer, Michael D.; Altenbach, Robert J.; Basha, Fatima Z.; Carroll, William A.; Drizin, Irene; Kerwin, James F., Jr.; Lebold, Suzanne A.; Lee, Edmund L.; Pratt, John K.; Sippy, Kevin B.; Tietje, Karin R.; Yamamoto, Diane M. Assignee Abbott Laboratories, USA 1998

**Patent Information**

Aug 11, 1998  
US 5792767  
A

**Number of Steps**

9

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