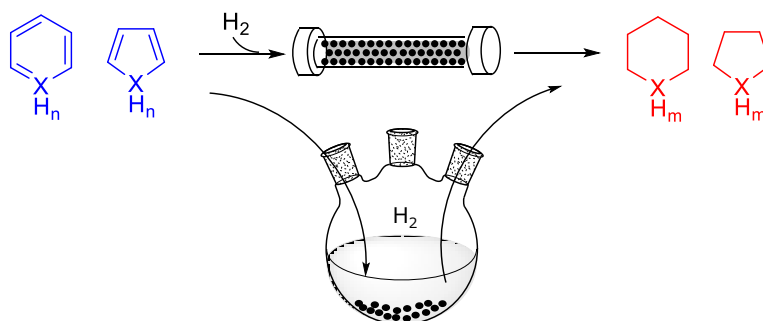


Catalyst

Catalyst for hydrogenation of aromatic rings Rh-Pt/(DMPSi-Al₂O₃)

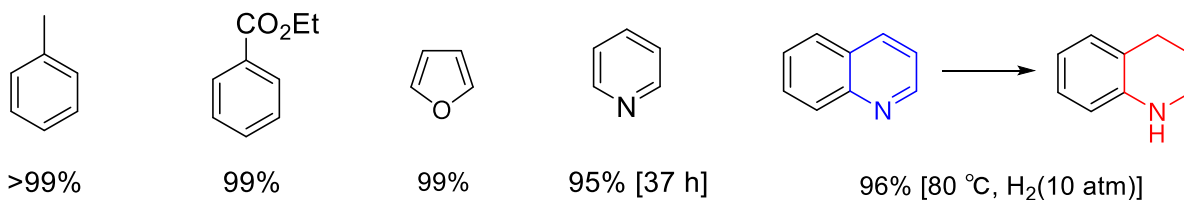
Feature

- Hydrogenation of aromatic rings under mild conditions (50-80 °C, 1 atm)
- Applicable to various substrates
- Maintains catalytic activity in continuous operation for 50 days or more with the continuous-flow method
- The continuous-flow method has maximum 27 times TOF (turnover frequency) than the batch method.



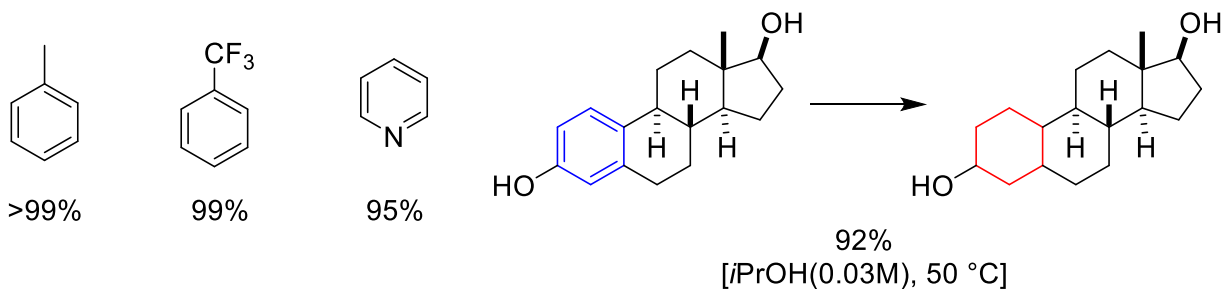
Reaction in the Batch System

aromatic compounds $\xrightarrow[\text{50 } ^\circ\text{C, H}_2(1 \text{ atm}), 24 \text{ h, neat or solvent}]{\text{Rh-Pt}/(\text{DMPSi-Al}_2\text{O}_3) (0.1 \text{ mol\% as Rh})}$ saturated compounds



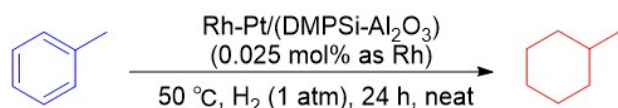
Reaction in the Flow System

aromatic compounds (0.025-0.05 ml/min) $\xrightarrow[\text{70 } ^\circ\text{C, H}_2 (1 \text{ atm}), 32\text{-}63 \text{ ml/min, neat}]{\text{Rh-Pt}/(\text{DMPSi-Al}_2\text{O}_3) (600\text{-}800 \text{ mg})}$ saturated compounds



Catalytic Activity and Durability

< recovery and reuse of the catalyst >



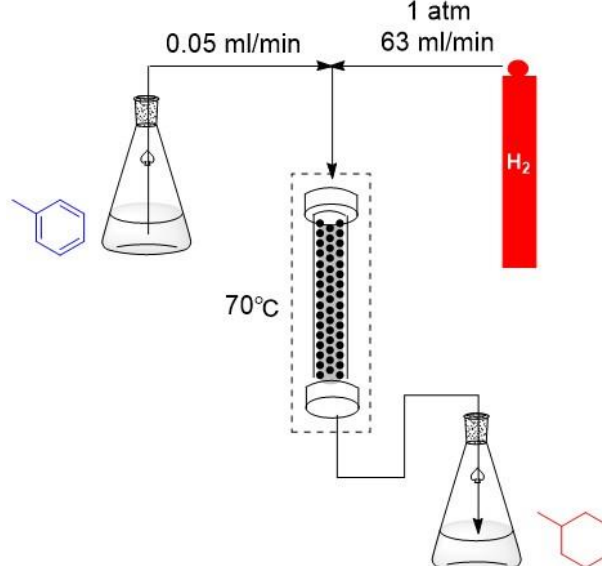
Entry	Yield (%) ^{a)}	Leaching (%) ^{b)} Rh / Pt
1 st Run	99	UDL / UDL
2 nd Run	100	UDL / UDL
3 rd Run	97	UDL / UDL
4 th Run	88	UDL / UDL
5 th Run	96 ^{c)}	UDL / UDL
⋮	⋮	⋮
10 th Run	96 ^{c)}	UDL / UDL

a) GC analysis. b) ICP-AES analysis.

c) After 4th run the catalyst was heated under argon before use at 100 °C for 7 h.

*UDL: under detection limit (<0.038%)

< continuous-flow reaction >

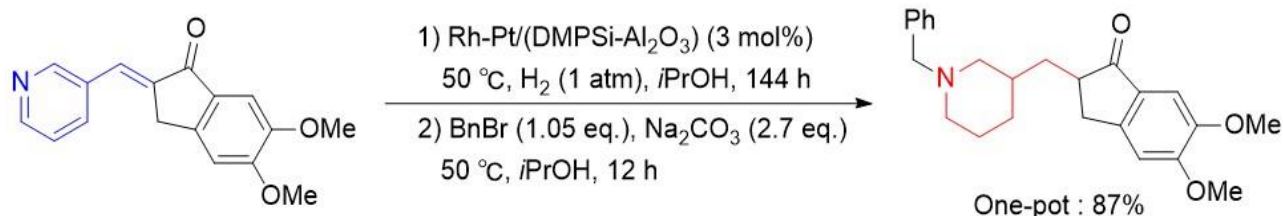


99% conversion

Catalytic activity could be maintained for more than 50 days.

no measurable leaching of either of the metals

One-Pot Synthesis of Donepezil



<Reference>

Miyamura, H., Suzuki, A., Yasukawa, T., Kobayashi, S. : *J. Am. Chem. Soc.*, **140**, 11325 (2018).

Code No.	Product Name	Package Size	Price
186-03451	Rh-Pt/(DMPSi-Al ₂ O ₃) ^{Ref}	1g	165.00 USD
182-03453		5g	550.00 USD

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