A SYNTHESIS OF (±)-1- AND (±)-3-HYDROXY-(C)-HOMOAPORPHINES VIA
META-BRIDGED AROMATIC LACTAMS

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Abstract—The title (C)-homoaporphines (4) were synthesized starting with
meta-bridged aromatic lactams (2) readily obtained by photolysis of phenolic
N-phenethylbromophenylpropionamides (1).

Previously, we have reported that photolysis$^1$ of phenolic N-phenethylbromophenylpropionamides (1)
gives rise to meta-bridged aromatic lactams (2). The lactams (2) seemed to be useful key compounds
for synthesis of (C)-homoaporphines.$^{2,3}$ The present paper deals with a synthesis of (C)-homo-
aporphines by a new synthetic route.

In a typical example, a mixture of $2a^1$ (107.1 mg) and POCl$_3$ (0.75 ml) in CH$_3$CN (10 ml) was refluxed
for 1 h. Usual work-up of the reaction mixture gave an oil, which was reduced with NaBH$_4$
(23 mg) in MeOH (10 ml) at room temperature for 30 min. Usual work-up of the reaction
mixture gave an oil, which was crystallized on trituration in n-hexane to afford a solid (3a)$^4$ (99 mg,
97%), mp 215-217°C (MeOH). N-Methylation (1. 35%aq.HCHO; 2. NaBH$_4$) of 3a afforded an oil, which
was purified on preparative thin-layer chromatography (SiO$_2$; developing solvent: CHCl$_3$;MeOH=10:1)
to afford $3a^4$ (46 mg, 87%), mp 209-211°C (i-PrOH)(lit.$^3$, 199-200°C). It was identical with

# Dedicated to Professor G. Stork on the occasion of his sixty-fifth birthday.
an authentic sample by comparison of their spectral data. Similarly, reaction of 2b-d afforded 4b-d via 3b-d.

Thus, a synthesis of (±)-1- and (±)-3-hydroxy-(C)-homoaporphines was accomplished by a new synthetic route starting with meta-bridged aromatic lactams.

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REFERENCES AND NOTES

4. 1H-Nmr spectra were taken with a JEOL-JNM-FX-100 (100MHz) or Hitachi R24B (60MHz) instrument in CDCl₃ solution using TMS as internal standard. 3a; δ (60MHz): 3.85 (9H, s, 3xOMe), 6.60, 6.62, 6.70 (3H, each s, 3xAr-H), 4a; δ (60MHz): 2.31 (3H, s, NMe), 6.81 (9H, s, 3xOMe), 6.58, 6.60, 6.68 (3H, each s, 3xAr-H), 3b (80%), mp 216-218°C (dec.) (MeOH); δ (100MHz): 3.98 (3H, s, 2xMe), 5.92 (2H, s, OCH₂O), 6.67, 6.69, 6.78 (3H, each s, 3xAr-H), 4b (81%), mp 181-183°C (MeOH) (lit., 188-190°C); δ (100MHz): 2.40 (3H, s, NMe), 3.90 (3H, s, 2xMe), 5.94 (2H, s, OCH₂O), 6.68, 6.70, 6.78 (3H, each s, 3xAr-H), 3c (94%), mp 198-199.5°C (dec.) (MeOH); δ (100MHz) (CDCl₃-CD₃OD): 3.91 (3H, s, 2xMe), 6.78 (1H, s, 1-H), 7.10-7.30 (4H, m, 4xAr-H), 4c (82%), mp 200.5-201.5°C (dec.) (MeOH); δ (100MHz): 2.45 (3H, s, NMe), 3.94 (3H, s, 2xMe), 6.83 (1H, s, 1-H), 7.20-7.30 (4H, m, 4xAr-H), 3d (94%) (amorphous mass); δ (60MHz): 3.76 (3H, s, OMe), 3.82 (6H, s, 2xMe), 6.42, 6.59, 6.90 (3H, each s, 3xAr-H), 4d (96%), mp 199-200°C (i-ProOH) (lit., 199-200°C); δ (60MHz): 2.34 (3H, s, NMe), 3.79 (3H, OMe), 3.84 (6H, s, 2xMe), 6.46, 6.60, 6.92 (3H, each s, 3xAr-H).

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