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LETTERS TO THE EDITOR

4H,8H-BIS(1,2,5-OXADIAZOLO)[3,4-*b*:3′,4′-*e*]PYRAZINE

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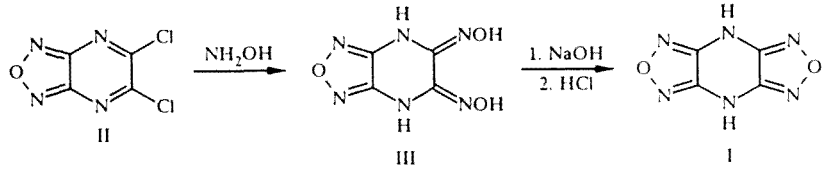
An unsuccessful attempt to synthesize 4H,8H-bis(1,2,5-oxadiazolo)[3,4-*b*:3′,4′-*e*]pyrazine (I) by the catalytic hydrogenolysis of its dibenzyl derivative has been described earlier [1]. The authors suggested that compound I is unstable and that it may not be possible to isolate it from the reaction mixture. On the contrary, we have shown the extremely high thermal and chemical stability of this compound which does not decompose in solutions of concentrated acids and bases.

Compound I was synthesized in two steps: by nucleophilic substitution on 5,6-dichloro-1,2,5-oxadiazolo[3,4-*b*]pyrazine (II) the dioxime (III) was obtained, dehydration of which gave the desired compound I.



The structure of compound I was confirmed from its spectroscopic characteristics and by x-ray crystallography.

5,6-Dioximino-1,2,5-oxadiazolo[3,4-*b*]pyrazine (III, $C_4H_4N_6O_3$). Yield 92%. M.p. 320°C (dec.) (DMF–water). ^{1}H NMR spectrum (DMSO-D_6): 10.89 ppm (4 H, s, NH, OH). IR spectrum: 842, 1000, 3295, 3360 cm^{-1}. Mass spectrum, *m/z*: 184 (M^+), 166 ($M-H_2O$), 153 ($M-NOH$), 136 ($M-H_2O-NO)^+$, 123 ($M-NOH-NO$).

4H,8H-Bis(1,2,5-oxadiazolo)[3,4-*b*:3′,4′-*e*]pyrazine (I, $C_4H_2N_6O_2$). Yield 82%. M.p. 294°C (water). ^{1}H NMR spectrum (DMSO-D_6): 11.78 pm (2 H, s, NH). ^{13}C NMR spectrum: 146.3 ppm. IR spectrum: 1000, 3300 cm^{-1}. Mass spectrum, *m/z*: 166 (M^+), 136 $(M-NO)^+$.

REFERENCES

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