

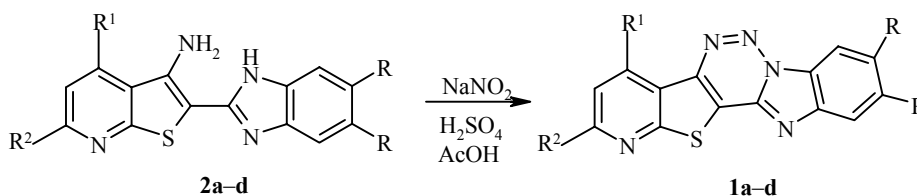
BENZO[4,5]IMIDAZO[1,2-*c*]PYRIDO- [3',2':4,5]THIENO[2,3-*e*][1,2,3]TRIAZINE, A NEW HETEROAROMATIC SYSTEM

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Keywords: benzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine, thienopyridine.

In a continuation of our study of the synthesis of polycyclic heteroaromatic systems using 3-aminothieno[2,3-*b*]pyridines [1], we obtained a new 22- π -electron heteroaromatic system, namely, benzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine (**1**).

Diazotization of the amino group in thieno[2,3-*b*]pyridines **2a-d** in glacial acetic acid by sodium nitrite in the presence of concentrated sulfuric acid at 0-5°C did not lead to the corresponding diazonium salts. The diazonium cation formed during the reaction probably attacks the nucleophilic nitrogen atom of the imidazole ring to give **1a-d**.



1, 2 a R = H, R¹ = CH₂OMe, R² = Me; **b** R = NO₂, R¹ = CH₂OMe, R² = Me;
c R = H, R¹ = Me, R² = CH₂OMe; **d** R = H, R¹ = R² = Me

Triazines **1a-d** are yellow crystalline compounds with different hues and high melting point.

4-Methoxymethyl-2-methylbenzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine (1a) was obtained in 92% yield; mp 272-273°C (toluene). ¹H NMR spectrum (DMSO-*d*₆, 200 MHz), δ , ppm, *J* (Hz): 2.75 (3H, s, CH₃); 3.61 (3H, s, OCH₃); 5.40 (2H, s, OCH₂); 7.71 (1H, s, H_{py}); 7.67-8.52 (4H, asym m, H_{arom}). Found, %: C 60.95; H 3.95; N 20.84. C₁₇H₁₃N₅OS. Calculated, %: C 60.88; H 3.91; N 20.88.

4-Methoxymethyl-2-methyl-9,10-dinitrobenzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine (1b) was obtained in 87% yield; mp >300°C (toluene). ¹H NMR spectrum (DMSO-*d*₆, 200 MHz), δ , ppm, *J* (Hz): 2.79 (3H, s, CH₃); 3.63 (3H, s, OCH₃); 5.41 (2H, s, OCH₂); 7.80 (1H, s, H_{py}); 8.87 (1H, s, H_{arom}); 9.40 (1H, s, H_{arom}). Found, %: C 47.91; H 2.59; N 23.10. C₁₇H₁₁N₇O₅S. Calculated, %: C 48.00; H 2.61; N 23.05.

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2-Methoxymethyl-4-methylbenzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine (1a) was obtained in 89% yield; mp >300°C (toluene). ¹H NMR spectrum (DMSO-*d*₆, 200 MHz), δ, ppm, *J* (Hz): 2.52 (3H, s, CH₃); 3.48 (3H, s, OCH₃); 4.71 (2H, s, OCH₂); 7.68 (1H, s, H_{Py}); 7.70-8.54 (4H, asym m, H_{arom}). Found, %: C 60.93; H 3.94; N 20.82. C₁₇H₁₃N₅OS. Calculated, %: C 60.88; H 3.91; N 20.88.

2,4-Dimethylbenzo[4,5]imidazo[1,2-*c*]pyrido[3',2':4,5]thieno[2,3-*e*][1,2,3]triazine (1a) was obtained in 97% yield; mp >300°C (toluene). ¹H NMR spectrum (DMSO-*d*₆, 200 MHz), δ, ppm, *J* (Hz): 2.60 (3H, s, 2-CH₃); 3.15 (3H, s, 4-CH₃); 7.49 (1H, s, H_{Py}); 7.65-8.50 (4H, asym m, H_{arom}). Found, %: C 62.97; H 3.65; N 22.90. C₁₆H₁₁N₅S. Calculated, %: C 62.93; H 3.63; N 22.93.

REFERENCES

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