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Title: **Synthesis of novel 9-(2-alkylthio-1-benzyl-5-imidazolyl)hexahydro-1,8-acridinedione as potassium channel modulators**

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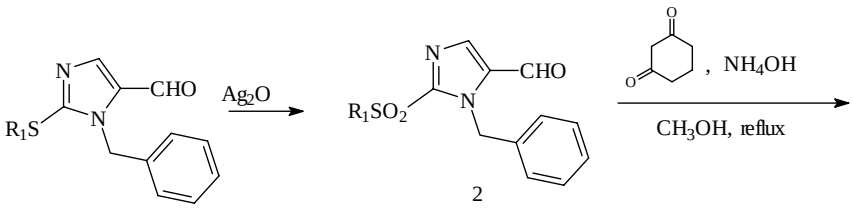
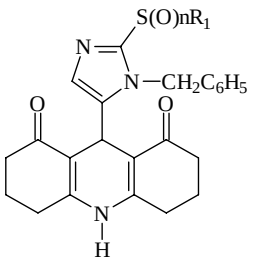
Of particular interest are 1,4-dihydropyridines that serve as activators at the ATP-sensitive K+ channel where glibenclamide and related agents serve as clinically useful antagonists [1]. ZM244085 9-(3-cyanophenyl)hexahydro-1,8-acridinedione is more potent on these channels in both binding and pharmacological assays with an EC_{50} value of approximately micromolar than it is on L-type Ca^{2+} channels in the same smooth muscle preparations[1]. Following our previous work on synthesizing 1,4-dihydropyridines with 2-alkylthio-1-benzyl-5-imidazolyl substituent at 4-position of dihydropyridine nucleus as calcium channel blockers[2]. We synthesized novel analogues of ZM244085 with bioisoesteric replacement of 3-cyanophenyl substitute with 2-alkylthio-1-benzyl-5-imidazolyl one.

2-Alkylthio-1-benzyl-5-formylimidazole (**1**) was synthesized as we reported previously [2]. It was further oxidized with silver oxide to give 2-alkylsulfonyl-1-benzyl-5-formylimidazole (**2**). Aldehydes **1** and **2** were refluxed with 1,3-cyclohexanedione and ammonium hydroxide in methanol, while protected from light , according to Hantzch synthesis [2] to give the title acridinediones (**3**). We hope potassium channel activator activity for the title compounds.



1 2



3

R_1 = CH_3, C_2H_5, $CH_2C_6H_5$

n = 0 , 1

1. D.J. Triggle; *Mini Rev Med Chem;* **2003**; 3(3); 215-223.
2. F. Hadizadeh, A Shafiee, R. Kazemi; *Indian J. Chem;* **2002**;41B; 2679-2682.