

Short Note

## 2-[(2-Hydroxy-naphthalen-1-ylmethylene)-amino]-5,6-dihydro-4H-cyclopenta [b] thiophene-3-carboxylic Acid Methyl Ester

Abdullah Mohamed Asiri \*

Chemistry Department, Faculty of Science, King Abdul-Aziz University, Jeddah 21413, P.O. Box 9028, Saudi Arabia.

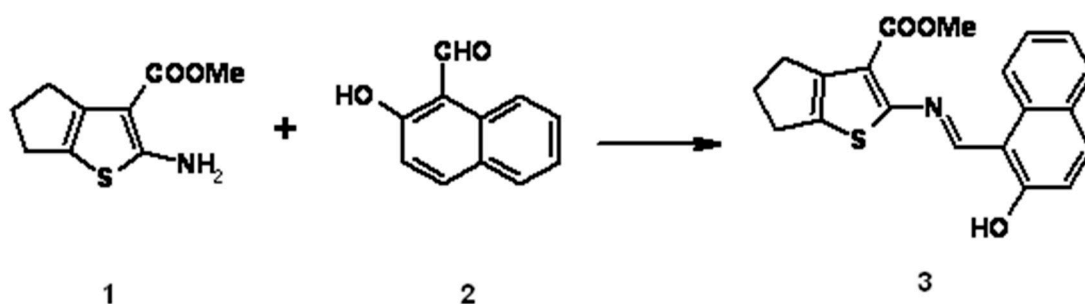
\* Author to whom correspondence should be addressed. Tel: +966-2-6952293; Fax: +966-2-6952293; E-mail: [asiri2@kaau.edu.sa](mailto:asiri2@kaau.edu.sa)

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**Abstract:** Chitooligosaccharide with one 2,5-anhydro-D-mannofuranose unit at the reducing end (COSamf) was prepared by nitrous acid depolymerization of chitosan. The reducing-end functionalization of COSamf by reductive amination with octanoic hydrazide in the presence of  $\text{NaBH}_3\text{CN}$  was achieved in high yield. The chemical structure of the targeted octanoic hydrazide-linked COSamf was fully characterized by NMR spectroscopy and MALDI-TOF mass spectrometry. This synthesis opens the way to a new generation of COSamf derivatives with potential amphiphilic properties.

**Keywords:** 2-Aminothiophen, Anils, 2-hydroxy naphthaline, Schiff base

Schiff bases from 2-hydroxy-1-naphthaldehyde have often been used as chelating ligands in the field coordination chemistry [1]. The Schiff base compounds can be classified by their photochromic and thermochromic characteristics [2].



A solution of 2-Amino-5,6-dihydro-4H-cyclopenta[b]thiophene-3-carboxylic acid methyl ester **1** (5.0g, 0.025mol) and 2-hydroxynaphthaldehyde **2** (4.3g, 0.025 mol) in absolute ethanol (100 mL) was heated under reflux for 5 hrs. Cooling the mixture, filtering the precipitate and recrystallization from ethanol gave the Schiff base **3** as red crystals (6.4g, 72.88%).

Melting Point: 208-210°C (EtOH).

IR (KBr;  $\text{cm}^{-1}$ ): 1701.2 (C=O), 1560.6 (C=N), 1453.4 (C=C), 1308.4 (C-O) and 1046.2 (C-N).

$^1\text{H}$  NMR (400 MHz;  $\text{CDCl}_3$ )  $\delta$ , ppm: 14.93 (s, 1H, OH), 9.44 (s, 1H, =CH), 8.20- 7.27 (m, 6H,  $\text{CH}_{\text{aromatic}}$  6 $\text{H}_{\text{aromatic}}$ ), 3.99 (s, 3H, COOMe), 3.03-2.85 (t, 4H, 2  $\text{CH}_2$ ), 2.46-2.22 (m, 2H,  $\text{CH}_2$ ).

$^{13}\text{C}$  NMR (100 MHz;  $\text{CDCl}_3$ )  $\delta$ , ppm: 27.50, 28.81, 29.78, 30.72, 49.69, 51.14, 54.05, 109.93, 118.92, 120.44, 123.17, 124.79, 127.40, 128.83, 130.32, 136.64, 146.45, 153.55, 158.86, 164.71.

## References

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