Cyclization reaction of *N*-allylbenzothioamide for direct construction of thiazole and thiazoline

Wei Zhou, Shengyang Ni, Haibo Mei, Jianlin Han, Yi Pan

PII: S0040-4039(15)00856-4
DOI: http://dx.doi.org/10.1016/j.tetlet.2015.05.047
Reference: TETL 46319

To appear in: *Tetrahedron Letters*

Received Date: 7 April 2015
Revised Date: 11 May 2015
Accepted Date: 13 May 2015

Please cite this article as: Zhou, W., Ni, S., Mei, H., Han, J., Pan, Y., Cyclization reaction of *N*-allylbenzothioamide for direct construction of thiazole and thiazoline, *Tetrahedron Letters* (2015), doi: http://dx.doi.org/10.1016/j.tetlet.2015.05.047

Cyclization reaction of *N*-allylbenzothioamide for direct construction of thiazole and thiazoline

Wei Zhou,[a] Shengyang Ni,[a] Haibo Mei,[a] Jianlin Han,[a,c]* Yi Pan[a,b]*

[a] *School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, 210093, China*

[b] *State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing, 210093, China*

[c] *Institute for Chemistry & BioMedical Sciences, Nanjing University, Nanjing, 210093, China*

Abstract A facile catalyst-free intramolecular cyclization reaction of *N*-allylbenzothioamide was reported. The reactions with the substrates bearing electron-withdrawing groups afforded thiazoles as products, while thiazolines formed from the reactions with substrates containing electron-donating groups as well as aliphatic substrate. This reaction provides a new access to 2,5-disubstituted thiazoles and thiazolines directly from readily available *N*-allylbenzothioamide.

Keywords: Thiazole; thiazoline; cyclization; *N*-allylbenzothioamide; catalyst-free

Thiazoles and their derivatives represent one of the most important classes of biologically and pharmaceutical active compounds, and have been playing a pivotal role in modern medicinal chemistry. They also exist in numerous natural products and

* Corresponding author. Tel: +86-25-83686133; Fax: +86-25-83686133. *Email address*: hanjl@nju.edu.cn (J. L. Han); yipan@nju.edu.cn (Y. Pan).