



## Mini-Review

## Studies on the bioactivities of 8-mercaptoquinoline sulfide derivatives

Jing-An Zhang<sup>a,b,\*</sup>, Li-Jie Zhang<sup>a,b,1</sup>, Xun-Zhong Zou<sup>a,b</sup>, Ya-Jie Liu<sup>a,b</sup>, Wei Gao<sup>a</sup>, Yu Li<sup>c,\*\*</sup><sup>a</sup> School of Pharmacy, Guangdong Pharmaceutical University, Guangzhou 510006, People's Republic of China<sup>b</sup> College of Traditional Chinese Medicine, Guangdong Pharmaceutical University, Guangzhou 510006, People's Republic of China<sup>c</sup> Department of Environmental Engineering, Guangdong Industry Technical College, Guangzhou 510300, People's Republic of China

## ARTICLE INFO

## Article history:

Received 20 August 2015

Received in revised form 27 November 2015

Accepted 29 November 2015

Available online 1 December 2015

## Keywords:

8-Mercaptoquinoline

Sulfide

Bioactivities

## ABSTRACT

This review gives a brief overview on bioactivities of 8-mercaptoquinoline sulfide derivatives involving antimicrobial activity, anticancer activity, inhibitors as well as other activities. Special emphasis is given to the most recent examples.

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## 1. Introduction

As a simple chemical intermediate, 8-mercaptoquinoline has the vital significance in medical field. To our knowledge, studying the influence of different substituents on 8-mercaptoquinoline can help us to increase the theory of action of organic analytical reagents [1].

Recently, many the structures and properties of 8-mercaptoquinoline and sulfide derivatives have been reported [2–8], not only for the good coordination have abilities, which can be found in Chen et al.'s worked [9–13]; but also for the potential drug values in the field of molecular biology, such as ubiquitin agent inhibitors [14], 11-beta hydroxysteroid

dehydrogenase type I inhibitor [15], JAMM protein inhibitor [16], potential 5-HT<sub>6</sub> receptor [17], CRTh<sub>2</sub> antagonists [18], Keap1–Nrf2 small-molecule inhibitors [19] and many other enzyme inhibitors [14], anti-mycobacterium tuberculosis [20], pesticides activity [21], and potential application in metal-promoted neurodegenerative diseases [22]. The compound containing 8-quinolinethioether group also can bind to SL3 RNA with higher affinity compare to double- and single-stranded RNAs that conserved motifs in different strains of HIV-1, which is the decisive factor for viral packaging in Douglas M. Warui's report [23].

The sulfur ether metal complexes containing quinoline group attract our concern for the different physiological activities when metal category and molecular space conformational are changed. This may lead to much stronger DNA-binding performance.

In this review we summarize a number of interesting examples, in which 8-quinolinethioether compounds display various bioactivities, including antimicrobial activity, anticancer activity, inhibitors as well as other activities in medicinal chemistry.

\* Correspondence to: J.A. Zhang, School of Pharmacy, Guangdong Pharmaceutical University, Guangzhou 510006, People's Republic of China.

\*\* Corresponding author.

E-mail addresses: [zhangja@126.com](mailto:zhangja@126.com) (J.-A. Zhang), [liyuleter@163.com](mailto:liyuleter@163.com) (Y. Li).

<sup>1</sup> These authors equally contributed to this work.



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