

Accepted Manuscript

Novel biologically active series of *N*-acetylglucosamine derivatives for the suppressive activities on GAG release

Tingting Cao, Yong Li, Lijuan Jiang, Li Yuan, Lin Dong, Ying Li, Shufan Yin



PII: S0008-6215(16)30235-X

DOI: [10.1016/j.carres.2016.07.004](https://doi.org/10.1016/j.carres.2016.07.004)

Reference: CAR 7224

To appear in: *Carbohydrate Research*

Received Date: 16 November 2015

Revised Date: 28 June 2016

Accepted Date: 2 July 2016

Please cite this article as: T. Cao, Y. Li, L. Jiang, L. Yuan, L. Dong, Y. Li, S. Yin, Novel biologically active series of *N*-acetylglucosamine derivatives for the suppressive activities on GAG release, *Carbohydrate Research* (2016), doi: 10.1016/j.carres.2016.07.004.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

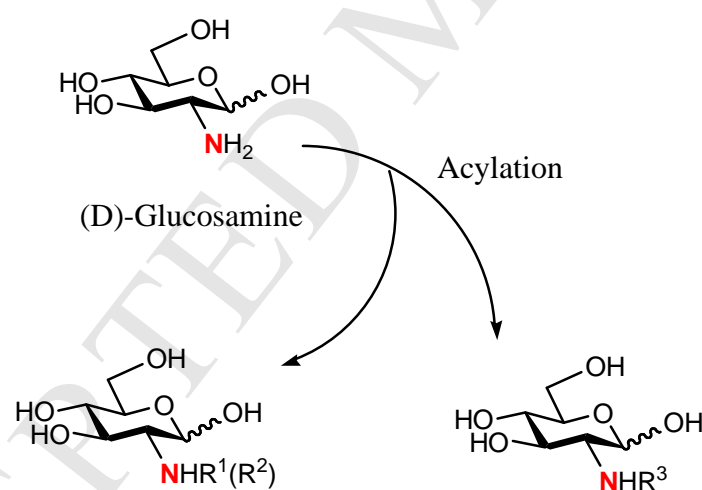
Novel Biologically Active Series of N-Acetylglucosamine Derivatives for the Suppressive Activities on GAG Release

Tingting Cao, Yong Li, Lijuan Jiang, Li Yuan, Lin Dong, Ying Li, Shufan Yin*

College of Chemistry, Sichuan University, 29 Wangjiang Road, Chengdu 610064, Sichuan Province, China.

ABSTRACT

(D)-Glucosamine and other nutritional supplements have emerged as safe alternative therapies for osteoarthritis, a chronic and degenerative articular joint disease. N-acetyl-(D)-glucosamine, a compound that can be modified at the N position, is considered to improve the oral bioavailability of (D)-glucosamine and has been proven to possess greater in vitro chondroprotective activity compared with the parent agent. In this study, to further utilize these properties, we focus on the modification of the N position with a benzenesulfonyl and different isoxazole formyl groups. Among these compounds, the 3-(2-chlorobenzene)-5-methyl-isoxazole formyl chloride and p-methoxybenzenesulfonyl chloride modifying structures proved to be the most active of the series and efficiently processed the chondrocytes in vitro. These novel N-position substitution compounds may represent promising leads for osteoarthritis drug development.



KEYWORDS. Biological Evaluation, Glucosamine, N-Acetylglucosamine Derivatives

1. Introduction

2-Amino-2-deoxy-(D)-glucose ((D)-glucosamine, **Figure 1, (1)**), an amino monosaccharide derivative of (D)-glucose, is found in

Corresponding author. Tel.: +86 13908005096; fax: +86 028 85414832

E-mail address: chuandayouji217@163.com (S.-F. Yin)

Download English Version:

<https://daneshyari.com/en/article/7793922>

Download Persian Version:

<https://daneshyari.com/article/7793922>

[Daneshyari.com](https://daneshyari.com)