## Accepted Manuscript

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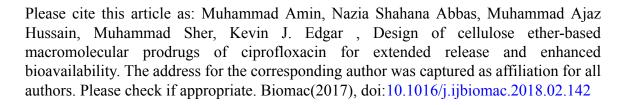
PII: S0141-8130(18)30091-6

DOI: doi:10.1016/j.ijbiomac.2018.02.142

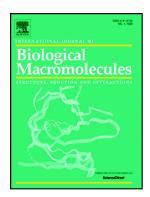
Reference: BIOMAC 9199

To appear in:

Received date: 6 January 2018 Revised date: 13 February 2018 Accepted date: 22 February 2018



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**ACCEPTED MANUSCRIPT** 

Design of cellulose ether-based macromolecular prodrugs of ciprofloxacin for

extended release and enhanced bioavailability

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**ABSTRACT** 

The present study reveals the syntheses of hydroxypropylcellulose- (HPC) and

hydroxyethylcellulose- (HEC) based macromolecular prodrugs (MPDs) of ciprofloxacin (CIP)

using homogeneous reaction methodology. Covalently loaded drug content (DC) of each prodrug

was quantified using UV-Vis spectrophotometry to determine degree of substitution (DS). HPC-

ciprofloxacin (HPC-CIP) conjugates showed DS of CIP in the range 0.87-1.15 whereas HEC-

ciprofloxacin (HEC-CIP) conjugates showed DS range 0.51-0.75. Transmission electron

microscopy revealed that HPC-CIP conjugate 2 and HEC-CIP conjugate 6 self-assembled into

nanoparticles of 150-300 and 180-250 nm, respectively. Size exclusion chromatography revealed

HPC-CIP conjugate 2 and HEC-CIP conjugate 6 as monodisperse systems. In vitro drug release

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