

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
20 June 2019 (20.06.2019)



(10) International Publication Number  
**WO 2019/113645 A1**

(51) International Patent Classification:

*A61K 31/7028* (2006.01) *A61P 39/00* (2006.01)  
*A61P 7/00* (2006.01) *A61P 43/00* (2006.01)  
*A61P 31/00* (2006.01)

(21) International Application Number:

PCT/AU2018/051337

(22) International Filing Date:

14 December 2018 (14.12.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2017905024 15 December 2017 (15.12.2017) AU

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: COMPOUNDS FOR TREATING AND PREVENTING EXTRACELLULAR HISTONE MEDIATED PATHOLOGIES

(57) Abstract: The present invention relates to compounds with high chemical stability and methods for inhibiting the pathological activity of extracellular histones in a subject. In particular, the invention relates to compounds with high chemical stability, uses thereof and methods for inhibiting or ameliorating extracellular histone mediated ailments (such as, for example, sepsis, systemic immune response syndrome (SIRS) and ischemia reperfusion injury (IRI)). More particularly, the invention relates to methods and uses of a polyanionic sulfated cellobioside modified with a small uncharged glycosidically linked substituent at its reducing terminus, wherein the presence of the substituent results in a molecule with high chemical stability without affecting the ability of the molecule to be effective in the therapy of extracellular histone mediated ailments. For example, the present invention relates to methods and uses of  $\beta$ -O-methyl cellobioside sulfate (mCBS) or a pharmaceutically acceptable salt thereof (e.g., mCBS.Na), in the therapy of a range of extracellular histone mediated ailments in subjects.



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