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Of New Pentavalent Antimony Carboxylates

Laiba Saleem, Ataf Ali Altaf, Amin Badshah, Muhammad Khawar Rauf, Amir
Waseem, Muhammad Danish, Syed Sikander Azam, Muhammad Nadeem
Arshad, Abdullah M. Asiria, Sajjad Ahmad, Rukhsana Gul

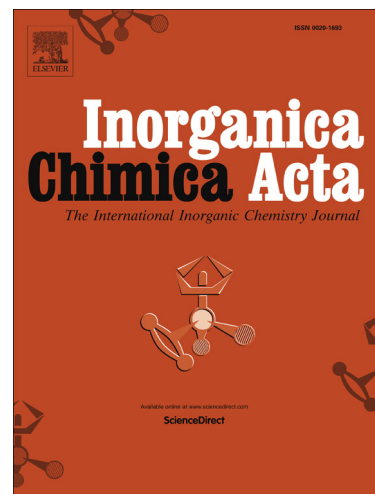
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Structural Investigations, Anti-Leishmanial, Antibacterial and Docking Studies Of New Pentavalent Antimony Carboxylates

Laiba Saleem^a, Ataf Ali Altaf^{b*}, Amin Badshah^{a*}, Muhammad Khawar Rauf^a, Amir Waseem^a, Muhammad Danish^b, Syed Sikander Azam^c, Muhammad Nadeem Arshad^{d,e}, Abdullah M. Asiria^{d,e}, Sajjad Ahmad^c, Rukhsana Gul^f.

^aDepartment of Chemistry, Quaid-i-Azam University, Islamabad-45320, Pakistan.

^bDepartment of Chemistry, University of Gujrat, Hafiz Hayat Campus, Gujrat-50700, Pakistan.

^cComputational Biology Lab, National Center for Bioinformatics, Quaid-i-Azam University, Islamabad-45320, Pakistan.

^dChemistry Department, Faculty of Science, King Abdulaziz University, Jeddah 21589, Saudi Arabia.

^eCenter of Excellence for Advanced Materials Research (CEAMR), Faculty of Science, King Abdulaziz University, Jeddah 21589, Saudi Arabia.

^fDepartment of Chemistry, Kohat University of Science and Technology, Kohat 26000 Pakistan

*corresponding authors e-mails: atafali_ataf@yahoo.com (A. A. Altaf); aminbadshah@yahoo.com (A. Badshah)

Abstract: In order to investigate the new drug candidates for healthy and risk free treatment of parasitic diseases like leishmaniasis, a series of new bioactive pentavalent antimonials (**LS-1** to **LS-8**) of the type $[SbR_3(OOCR')_2]$ ($R = -C_6H_5, -(C_6H_4)CH_3$ and $R' = -(C_6H_4)NO_2, -(C_6H_4)Br, CH(C_6H_5)_2, CH_2CH(C_3H_7)NHSO_2C_6H_5$) were synthesized. All the antimonials have been characterized using melting points, elemental analysis, and multinuclear (1H and ^{13}C) NMR spectroscopy. In addition two compounds (**LS-3** and **LS-5**) were also studied by X-ray crystallography and showed trigonal-bipyramidal geometry around antimony. The leishmanicidal activity was assessed against the *Leishmania tropica* promastigote parasite. It was observed that IC_{50} of the antimonials was many fold superior as compared with the standard antimonial drug used. Antibacterial assay along with docking study proved that the synthesized compounds are highly effective against various human pathogens.

Keywords: Leishmanicidal; antimonial compounds; antibacterial; X-ray crystallography; Molecular docking

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