

## USE OF NITRATO-[N-CYCLOHEXYL-N'-(PYRIDIN-2-YLMETHYLIDENE)- CARBAMOHDRAZONETHIOATOCOPPER AS AN INHIBITOR OF THE REPRODUCTION OF BACTERIA OF THE SPECIES *ACINETOBACTER BAUMANNII*

**PATENT: MD 4761/2021.07.31**

**AUTHORS: Aurelian GULEA , Roman RUSNAC , Greta BĂLAN , Anna RUSNAC , Nicoleta NICOLENCO, Victor ȚAPCOV**

**APPLICATION FIELDS: Medicine and Pharmaceutics**

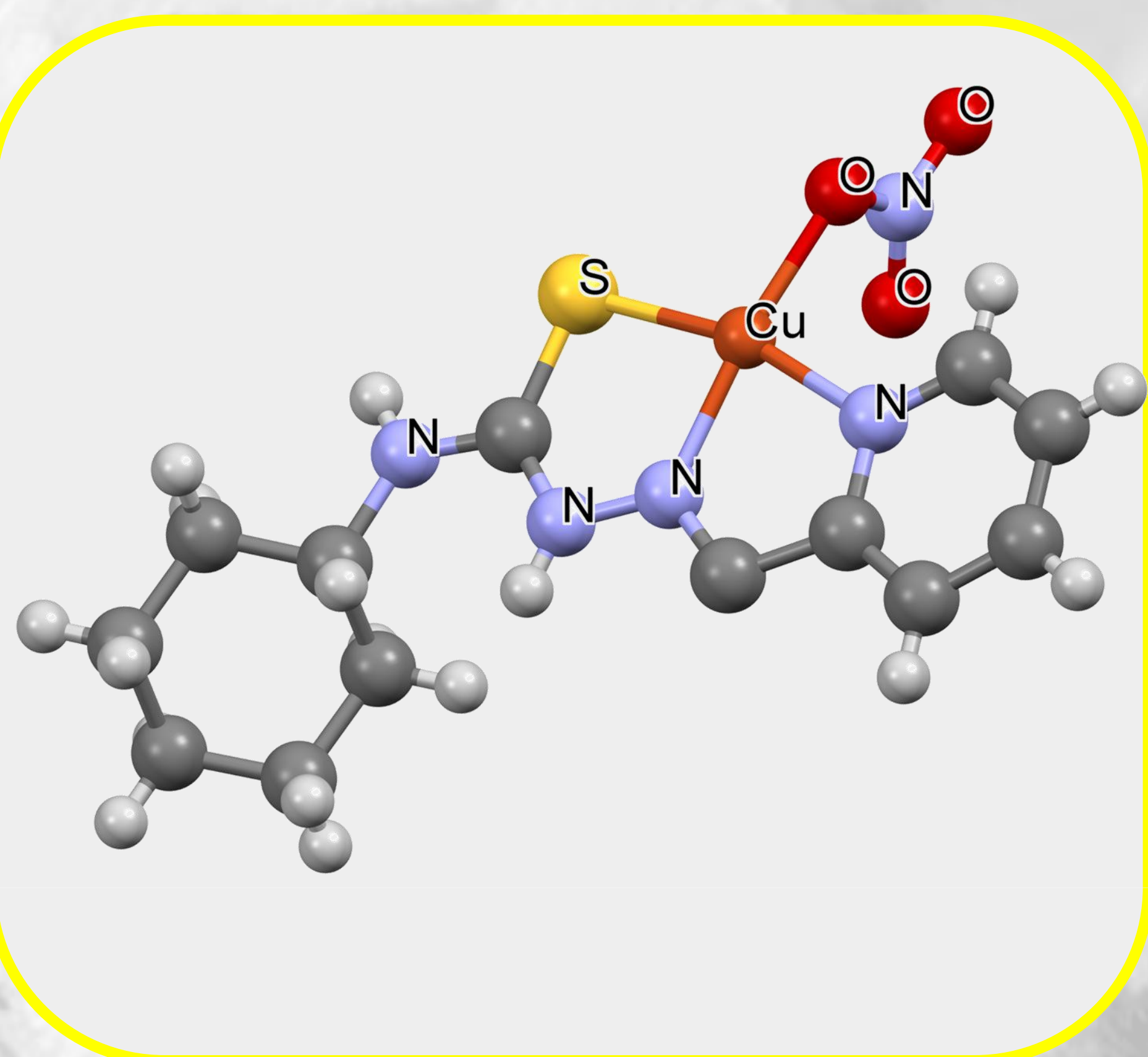
**AIM: the present invention consists in obtaining a novel coordination compound which possesses high bacteriostatic and bactericidal activity compared to *acinetobacter baumannii***

**SOLUTION: for the first time as an inhibitor of the growth and multiplication of bacteria of the species, *Acinetobacter baumannii* a coordination compound of copper (II) which contains a new combination of already known chemical bonds that manifest activity antimicrobial against *Acinetobacter baumannii* bacteria, and which exceeds 3 times the analogous characteristics of Gentamicin.**

**Table**

The bacteriostatic and bactericidal activity

Minimum inhibition concentration (MIC) and minimum bactericidal concentration (CBM) of the declared compound against *Bacillus cereus* bacteria compared to the prototype, ( $\mu\text{g}/\text{mL}$ )



Compound	MIC	MBC
Initial compounds <sup>a)</sup>	> 10 000,0	> 10 000,0
Gentamicin	16.0	32.0
Nitrato-[N-cyclohexyl-N'-(pyridin-2-ylmethylidene)- carbamohydrazonethioatocopper (II)	7.81	7.81

- Note: a) Initial compounds -  $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$  and  
• N-cyclohexyl-2-[(pyridin-2-yl)methylidene]-hydrazine-1-carbothioamide

**Figure.** Crystalline structure of nitrato-[N-cyclohexyl-N'-(pyridin-2-ylmethylidene)carbamohydrazonethioatocopper(II)

**ADVANTAGES: the compounds exhibit antimicrobial activity against *Acinetobacter baumannii*, they can be used in medicine and veterinary medicine for the prevention and treatment of disease causing microbes.**

**IMPLEMENTATION STAGE: Prototype.**

**ACKNOWLEDGMENTS: This research was supported by the project 20.80009.5007.10 of the Ministry of Education, Culture and Research of the Republic of Moldova**