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# NOVEL Cr(III) COMPLEXES OF D-AMINOACID-SCHIFF AS ANTIMİCROBIAL AGENTS

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The aim of this work was to assess the antibacterial of novel Schiff bases-Cr(III) complexes: $[Cr(5F\text{-}Gly)Cl(H_2O)_2]$, $[Cr(5F\text{-}Ala)Cl(H_2O)_2]$, $[Cr(5F\text{-}3Cl\text{-}Gly)Cl(H_2O)_2]$, $[Cr(5F\text{-}3Cl\text{-}Ala)Cl(H_2O)_2]$ (Figure 1) [1].

All these complexes have been examined for antibacterial activity against pathogenic strains *Listeria monocytogenes 4b* ATCC19115, *Staphylococcus aureus* ATCC25923, *Escherichia coli* ATCC1280, *Salmonella typhi H* NCTC 901.8394, *Staphylococcus epidermidis sp., Shigella dysenteria typ* 10 NCTC 9351 and antifungal activity against *Candida albicans* Y-1200-NIH, Tokyo. Concentrations of Cr(III) complexes were prepared to be 0.25 μg/μL in DMF against the tested bacterial species (Table 1) [2].

Table 1

| | Compound | | | |
|---|---|---|---|---|
| Microorg. | [Cr(5F-Gly)A] | [Cr(5F-Ala)A] | [Cr(5F-3Cl-Gly)A] | [Cr(5F-3Cl-Ala)A] |
| *Sh.dys. typ 10* | 8 | - | 10 | - |
| *L.monocytogenes* | 8.5 | 9 | 10 | - |
| *S.typhi H* | 12 | 13.5 | 11.5 | 11.5 |
| *S.aureus* | 7 | 10 | 10 | - |
| *S.epidermidis* | 8.5 | 8.5 | - | 7 |
| *E.coli* | 12.5 | - | 8.5 | - |
| *C.albians* | 13.5 | 10 | 15.5 | 15.5 |

A: $Cl(H_2O)_2$

References

[1] Nurşen Sarı, Perihan Gürkan (2004). Some Novel Amino AcidSchiff Basestheir Complexes Synthesis, Characterization, Solid State Conductivity BehaviorsPotentiometric Studies. *Zeitschrift für Naturforschung B,*, 59b,(692).

[2] Perihan Gürkan, Nurşen Sarı, Seza Arslan (2003). Synthesis, potentiometricantimicrobial activity studies on 2 pyridinilidene DLamino acids their complexes.. *Transition Metal Chemistry,*, 28:(468,).

# COMPARISON ANTİBACTERIAL AND ANTIFUNGAL PROPERTIES OF BETWEEN DIAMAGNETIC AND PARAMAGNETIC Ni(II) COMPLEXES

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The aim of this work was to investigate the antibacterial and antifungal activities of novel diamagnetic and paramagnetic Ni(II) complexes with ligant aminoacid-Schiff bases including fluorine atom. This new Ni(II) complexes were synthesis by template methods [1]. And then, novel complexes have been examined for antibacterial activity against pathogenic strains *Escherichia coli* ATCC1280, *Salmonella typhi H* NCTC 901.8394, *Staphylococcus epidermidis sp., Micrococcus luteus* ATCC 9341, and antifungal activity against *Candida albicans* Y-1200-NIH, Tokyo [2].

The antimicrobial test results of complexes (0.25 µg/µL in DMF) exhibited better activity than some known antibiotics as Kanamycin and Amoxycillin. In particular, diamagnetic Ni(II) complexes were more potent bactericides than all of the substances synthesized (Table 1). **A**: $[Ni(5F\text{-}Gly)(H_2O)_3]$; **B**: $[Ni(5F\text{-}Ala)(H_2O)_3]$; **C**: $[Ni(5F\text{-}3Cl\text{-}Gly)H_2O]$; **D**: $[Ni(5F\text{-}3Cl\text{-}Ala)H_2O]$.

Table 1

| Microorganisms | Compound | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Control |
| *S.typhi H* | - | 10.5 | 20 | 12.5 | - |
| *S.epidermidis* | 8.5 | 13 | 14 | 16 | - |
| *M.luteus* | 12 | 11.5 | 24 | 31.5 | - |
| *E.coli* | 11.5 | 10 | 16.5 | 19.5 | - |
| *C. albicans* | 13 | 10.5 | 20.5 | 20 | - |

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[1] Nurşen Sarı, Perihan Gürkan (2004). Some Novel Amino AcidSchiff Basestheir Complexes Synthesis, Characterization, Solid State Conductivity BehaviorsPotentiometric Studies. *Zeitschrift für Naturforschung B,*, 59b,(692).

[2] Perihan Gürkan, Nurşen Sarı, Seza Arslan (2003). Synthesis, potentiometricantimicrobial activity studies on 2 pyridinilidene DLamino acids their complexes.. *Transition Metal Chemistry,*, 28:(468,).

# MICROBIOLOGICAL ACTIVITIES OF NOVEL BIS-CROWN ETHERS

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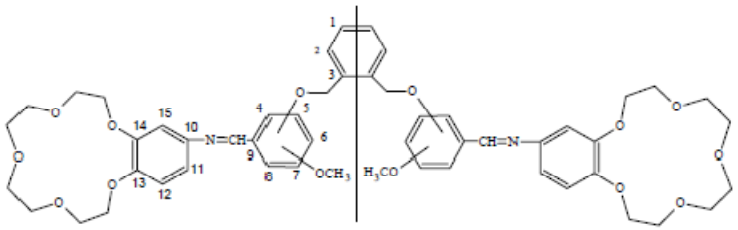
*Mono-* and *bis*-crown ethers have been a topic of great interest in chemical and biological research for more than four decades [1]. They have recently demonstrated function as antimicrobial agents [2]. The aim of this work was to investigate the antibacterial activities of four novel *bis*-crown ethers including methoxy group and benzo-15-crown-5 moieties. This novel compounds have been examined for antibacterial activity against pathogenic strains *Staphylococcus aureus RSKK-07035, Shigella dysenteria typ 7 NCTC-9363* and *Salmonella typhi H NCTC 901.8394, Staphylococcus epidermis sp.*

The antimicrobial test results of compounds ($10^3$ μM in DMF) exhibited better activity than some known antibiotics as Nystatin and SCF Sulbactam.

Table 1

| Microorganisms | Compound | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| *S.aureus* | 13 | - | 15 | 15 |
| *Sh.dys. typ 7* | 11 | 15 | 13 | 19 |
| *S.typhi H* | - | - | 14 | 13 |
| *E.coli* | - | - | 20 | 21 |



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[1] Marjanovic, M. Kralj, M. Supek, F. Frkanec, L. Piantanida, I. Smuc, L. Tusek-Bozic, T.: Antitumor potential of crown ethers: Structure-activity relationships, cell cycle diturbances, and Cell death studies of a series of ionophores. *J. Med. Chem.* **50**, 1007-1018 (2007)

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