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Synthesis and Biological Evaluation of Novel 5,8-Dibromo-2-N-substituted-1,4-Naphthoquinone Derivatives as Potential Antimicrobial Agents

Potansiyel Antimikrobiyal Ajanlar Olarak Yeni 5,8-Dibromo-2-N-Sayıbstitüte-1,4-Naftokinon Türevlerinin Sentezi ve Biyolojik Değerlendirmesi

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The seven 5,8-dibromo-2-N-substituted-1,4-naphthoquinone derivatives have been synthesized and tested for their in vitro antimicrobial activities. The results suggest that the synthesized 2-N-substituted-1,4-naphthoquinones have high antimicrobial activity. The diffusion capacities of the compounds are also important for the determination of the antimicrobial activities; **2c**, **2f** and **2g** have been shown to be promising compounds for future studies.

Yedi adet 5,8-dibromo-2-N-sÃfÃ¼bstitÃfÃ¼e-1,4-naftakinon tÃfÃ¼revi sentezlenmiÃ ÂÝ ve bu bileÃ ÂÝiklerin in vitro antimikrobiyal aktiviteleri test edilmiÃ ÂÝtir. Elde edilen sonuÃfÃ§lar 2-N-sÃfÃ¼bstite-1,4-naftakinonlarÃ„Â±n yÃfÃ¼ksek antimikrobiyal etkinliÃ„ÂÝe sahip olduklarÃ„Â±nÃ„Â± gÃfÃ¶stermektedir. BileÃ ÂÝiklerin difÃfÃ¼zyon kapasitesi de antimikrobiyal aktivitelerin belirlenmesinde ÃfÃ¶nem taÃ ÂÝÃ„Â±maktadÃ„Â±r; SonuÃfÃ§lar **2c**, **2f** ve **2g** bileÃ ÂÝiklerinin gelecekteki ÃfÃ§alÃ„Â±Ã ÂÝmalar iÃfÃ§in umut verici bileÃ ÂÝikler olduklarÃ„Â±nÃ„Â± ortaya koymuÃ ÂÝtur.

Anahtar Kelimeler

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[1, 4-Naphthoquinone](#), [nucleophilic substitution](#), [antimicrobial activity](#), [antimicrobial activity](#)

[1, 4-Naftakinon](#), [nÃfÃ¼kleofilik yerdeÃ„ÂÝiÃ ÂÝtirmÃ antimikrobiyal aktivite](#)

KaynakÃfÃ§a

- [1] Hodnett E.M., Wongwiechintana C., Dunn III W.J., Marrs P., Substituted 1,4-naphthoquinones vs. the ascitic sarcoma 180 of mice, *J. Med. Chem.*, 26 (1983) 570-574.
- [2] Gershon H. and Shanks L., Fungitoxicity of 1,4-naphthoquinones to candida albicans and trichophyton mentagrophytes, *Can. J. Microbiol.*, 21 (1975) 1317-1320.
- [3] Riffel A., Medina L.F., Stefani V., Santos R.C., Bizani D., Brandelli A., In vitro antimicrobial

activity of a new series of 1,4-naphthoquinones, *Braz. J. Med. Biol. Res.*, 35 (2002) 811-818.

- [4] Aeken S.V., Deblander J., Houwer J.D., Mosselmans T., Tehrani K.A., Unexpected reaction of 2-amino-1,4-naphthoquinone with aldehydes: new synthesis of naphtho[2,1-d]oxazole compounds, *Tetrahedron* 67 (2011) 512-517.
- [5] Liu B. and Ji S-J., Facile synthesis of 2-amino-1,4-naphthoquinones catalyzed by molecular iodine under ultrasonic irradiation, *Synth. Commun.*, 38 (2008) 1201-1211.
- [6] Tandon V.K., Maurya H.K., Mishra N.N., Shukla P.K., Design, synthesis and biological evaluation of novel nitrogen and sulfur containing hetero-1,4-naphthoquinones as potent antifungal and antibacterial agents, *Eur. J. Med. Chem.*, 44 (2009) 3130-3137.
- [7] Bolognesi M.L., Lizzi F., Perozzo R., Brun R., Cavalli A., Synthesis of a small library of 2-phenoxy-1,4-naphthoquinone and 2-phenoxy-1,4-anthraquinone derivatives bearing anti-trypanosomal and anti-leishmanial activity, *Bioorg. Med. Chem. Lett.*, 18 (2008) 2272-2276.
- [8] Sayil C. and Ibis C., Synthesis and spectral properties of novel thionaphthoquinone dyes, *Bull. Korean Chem. Soc.*; 31 (2010) 1233-1236.
- [9] Akgün O., Berkil Akar K., Kaplan N., Functionalization of naphthalene: a novel synthetic route to brominated naphthoquinones, *Arkivoc*, 50 (2012) 274-281.
- [10] Andrews J.M., Determination of minimum inhibition concentrations, *J. Antimicrob. Chemother.*, 48 (2001) Suppl.S1, 5-16.
- [11] Karadag A., Aydilek A., Dede S., Tekin S., Yanar Y., Cadirci B.H., Soylu M.S., Andac O., Five novel dicyanidoaurate(I)-based complexes exhibiting significant biological activities: synthesis, characterization and three crystal structures, *New J. Chem.*, 39 (2015) 8136-8152.
- [12] Wiegand I., Hilpert K., Hancock R.E.W., Agar and broth dilution methods to determine the minimal inhibitory concentration (MIC) of antimicrobial substances, *Nat. Protoc.*, 3/2 (2008) 163-175.

Ayracı, Antılar, İmlar

Birincil Dil

Konular

Dergi Başarıları

Yazarlar

en

Temel Bilimler

Natural Sciences