BROAD-SPECTRUM FUNGICIDAL IMIDAZOLIUM SALTS AGAINST MULTIDRUG-RESISTANT CANDIDA SPP., INCLUDING CANDIDA AURIS

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INTRODUCTION: The worldwide rise of antifungal resistance in *Candida* spp., especially among non-*albicans* strains and multidrug-resistant organisms such as *Candida auris*, has significantly reduced the efficacy of standard antifungal treatments. This therapeutic limitation highlights the urgent need for antifungal agents with novel mechanisms of action capable of overcoming multidrug resistance. **OBJECTIVE:** The present study investigated the antifungal and fungicidal potential of structurally distinct imidazolium salts against clinically important *Candida* spp. **METHODS:** Different imidazolium salts, varying in alkyl chain size, aromatic substituents, and counterion composition, were tested against several *Candida* spp., including *C. albicans, C. tropicalis, C. glabrata, C. krusei, C. parapsilosis, C. haemulonii,* and *C. auris*. Minimum inhibitory concentrations (MIC) and minimum fungicidal concentrations (MFC) were determined using broth microdilution assays according to CLSI guidelines and compared with conventional antifungal agents. **RESULTS:** Several imidazolium salts exhibited potent broad-spectrum antifungal activity across all tested *Candida* spp., including multidrug-resistant and emerging pathogens such as *C. auris*. The most active compounds displayed MIC values in the sub-microgram-per-milliliter range and consistently demonstrated fungicidal effects, with MFC values frequently equal to or close to their corresponding MIC values. Structure–activity relationship analysis revealed that increased hydrophobicity, particularly through longer alkyl chains and aromatic substitution, markedly enhanced antifungal potency. The strong dependence on amphiphilic structural features suggests membrane-targeting mechanisms distinct from conventional azole antifungals. **CONCLUSION:** Imidazolium salts showed potent broad-spectrum antifungal and fungicidal activity against clinically relevant *Candida* spp., including multidrug-resistant *C. auris*. Structural features such as longer alkyl chains and aromatic substitutions enhanced antifungal efficacy. These findings support their potential as promising scaffolds for the development of next-generation antifungal therapies targeting multidrug-resistant *Candida* infections.

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