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## Synthesis and antimicrobial evaluation of diazenyl chalcones

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Palavras-chave: reação de azo-acoplamento, condensação de Claisen-Schmitt, atividade antifúngica, atividade bacteriostática

### Highlights

Azo-coupling reaction of 4-acetylphenyl diazonium salt with secondary amines to obtain diazenyl acetophenones

Claisen-Schmitt aldolic condensation to obtain diazenyl chalcones from respective diazenyl acetophenones

Antimicrobial evaluation against *C. albicans* and *E. coli* of the synthesized derivatives

### Resumo/Abstract

In the search for new compounds with antimicrobial activity, this work aimed to synthesize diazenyl chalcones as potential compounds against pathogenic microorganisms (fungi and bacteria). One synthetic route (Figure 1) started with 4-aminoacetophenone, which was converted to its respective arenediazonium salt. This intermediate was then reacted with three cyclic secondary amines (piperidine, morpholine, and pyrrolidine), generating three diazenyl acetophenones, which were converted to their respective chalcones by the Claisen-Schmitt condensation reaction in a basic medium with p-nitrobenzaldehyde. Another route started with 3-aminoacetophenone, following the same reaction sequence to obtain the diazenyl acetophenone intermediates, which were condensed with salicylaldehyde in an acidic medium to obtain the respective chalcones. All products obtained were characterized by FTIR and melting point. The six diazenyl chalcones obtained were evaluated for their antimicrobial potential using the minimum inhibitory concentration (MIC) method. Of the six synthesized derivatives, one of them ((2E)-3-(2-hydroxyphenyl)-1-{3-[(E)-(piperidin-1-yl)diazenyl]phenyl}prop-2-en-1-one) showed activity against *C. albicans*, and three others showed bacteriostatic activity against *E. coli*.

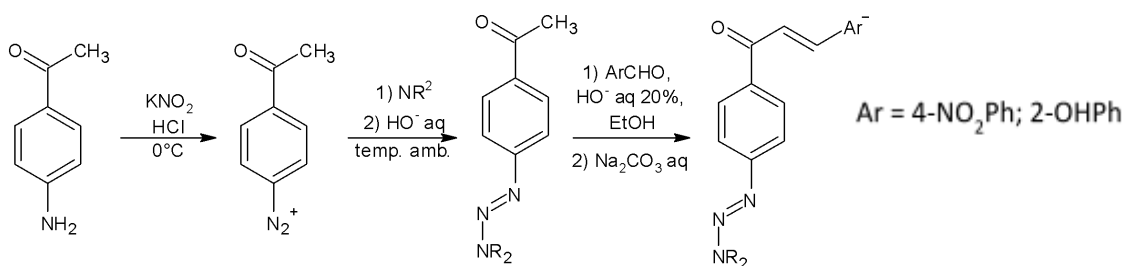


Figure 1 – Synthetic route to diazenyl chalcones proposed in this work

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The banner features a dark teal background with a molecular structure on the left and a globe on the right. The text is arranged in three columns. The first column contains the number '31' in a large, bold, orange font. The second column contains the words 'ENCONTRO DE' in orange and 'QUÍMICA DA REGIÃO SUL' in white, with the latter enclosed in an orange rectangular box. The third column contains the theme 'A QUÍMICA COMO PROPULSORA DE NOVOS ECOSISTEMAS DE INOVAÇÃO' in white. The fourth column contains the dates and location '19 A 21 DE NOVOBRO Campus Toledo Unioeste' in white.

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