4-cyanopirazoles derivatives as a new class of compounds with potent antifungal activity

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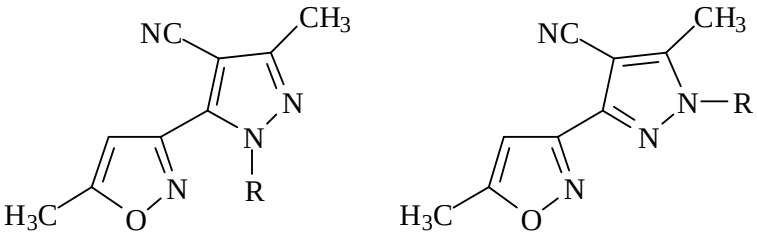
Introduction
We have reported that some 4-nitrosopyrazoles derivatives displayed in vitro and in vivo potent antifungal activity at no cytotoxic concentration and some of these compounds were 4 times more potent than Amphotericine B and Fluconazole respectively against Cryptococcus Neoformans and C. Krusei.
We reported also that the absence of NO group or its replacement with NO_2 or NH_2 groups gave compounds devoid of antimycotical activity.

Aim of the work
To better understand the mechanism of action and with the aim of identifying the chemical features responsible for the action, we synthesized and tested a new class of compounds in which the 4-NO group was replaced with 4-CN group having, these last, similar steric and electronic features, but different routes by which may be metabolized in vivo.

Result
The title compounds tested in vitro for antifungal activity against C. Neoformans and C. Krusei, displayed an interesting antifungal activity, increased compared to the analogous 4-NO-pyrazoles



R=H; CH_3; CH_2CH_3

Synthesis, SAR, in vitro and vivo biological test of title compounds will be reported.

References

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