

Synthesis of N-tetra-O-acetyl- β -d-glucopyranosyl-N'-(4',6'-diarylpyrimidin-2'-yl)thioureas

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Abstract: Some 2-amino-4,6-diarylpyrimidines **2** have been prepared from substituted benzylideneacetophenones and guanidine hydrochloride in the presence of alkali by conventional heating in alcoholic medium and microwave heating in solvent-free conditions. N-(2,3,4,6-Tetra-O-acetyl- β -d-glucopyranosyl)-N'-(4',6'-diarylpyrimidin-2'-yl)thioureas **4** have been synthesized by reaction of per-O-acetylated glucopyranosyl isothiocyanate **1** and substituted 2-amino-4,6-diarylpyrimidines **2**. Two different methods have been used, namely, refluxing in anhydrous dioxane and solvent-free microwave-assisted coupling. The second procedure afforded higher yields in much shorter reaction times. The compounds **2** and **4** were tested for their antibacterial and antifungal activities in vitro against *Staphylococcus epidermidis*, *Enterobacter aerogenes* and *Candida albicans* by disc diffusion method. © 2009 Elsevier Ltd. All rights reserved.

Author Keywords: Glucopyranosyl isothiocyanate; Glucopyranosyl thiourea; Microwave-assisted method; Pyrimidine

Index Keywords: Antibacterial and antifungal activity; *Candida albicans*; Conventional heating; Diffusion method; *Enterobacter aerogenes*; Glucopyranosyl isothiocyanate; Glucopyranosyl thiourea; Guanidine hydrochloride; Higher yield; In-vitro; Isothiocyanates; Microwave-assisted; Microwave-assisted method; Pyrimidine; Reaction time; Refluxing; Second procedures; Solvent free; Solvent free conditions; *Staphylococcus epidermidis*; Amination; Amines; Ethers; Heating; Microwaves; Synthesis (chemical); Urea; Thioureas; 2 amino 4 (2 hydroxyphenyl) 6 phenylpyrimidine; 2 amino 4 (3 chlorophenyl) 6 phenylpyrimidine; 2 amino 4 (3 methoxyphenyl) 6 phenylpyrimidine; 2 amino 4 (4 bromophenyl) 6 phenylpyrimidine; 2 amino 4 (4 chlorophenyl) 6 phenylpyrimidine; 2 amino 4 (4 fluorophenyl) 6 phenylpyrimidine; 2 amino 4 (4 isopropenyl) 6 phenylpyrimidine; 2 amino 4 (4 methoxyphenyl) 6 phenylpyrimidine; 2 amino 4 (4 methylphenyl) 6 phenylpyrimidine; 2 amino 4,6 diphenylpyrimidine; alkali; antifungal agent; antiinfective agent; chalcone derivative; guanidine; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' (4',6' diphenylpyrimidin 2' yl)thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (2 hydroxyphenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (3 chlorophenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (3 methoxyphenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 bromophenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 chlorophenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 fluorophenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 isopropylphenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 methoxyphenyl) 6' phenyl pyrimidin 2' yl]thiourea; n (2,3,4,6 tetra o acetyl beta dextro glucopyranosyl) n' [4' (4 methylphenyl) 6' phenyl pyrimidin 2' yl]thiourea; n tetra o

acetyl beta dextro glucofuranosyl ' (4',6' diarylpyrimidin 2' yl)thiourea derivative; pyrimidine derivative; thiourea derivative; unclassified drug; acetylation; antibacterial activity; antifungal activity; article; *Candida albicans*; chemical procedures; chemical reaction; disk diffusion; drug activity; drug structure; drug synthesis; *Enterobacter aerogenes*; in vitro study; microwave cooking; nonhuman; priority journal; reaction time; *Staphylococcus epidermidis*; Acetylglucosamine; Anti-Bacterial Agents; Antifungal Agents; *Candida albicans*; *Enterobacter aerogenes*; Microbial Sensitivity Tests; Pyrimidines; *Staphylococcus epidermidis*; Thiourea; *Candida albicans*; *Enterobacter aerogenes*; *Staphylococcus epidermidis*; Tetra

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