Synthesis of some byrimidines and pyridazines which have piological and surface activity

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The main objective of the studies described in this thesis involve the synthesis of different heterocyclic system containing stearyl moiety and utilization of the synthesized compounds in synthesis of some nonionic surfactants having biological activities.Part IThe reaction of stearyl chloride with o-phenylenediamine afforded the amide derivative 1 which on diazotization and coupling with malononitrile afforded N-(2-dicyanomethyldiazenylphenyl) stearamide (3)The reaction of dicyano derivative (3) with ethyl cyanoacetate and/or ethyl acetoacetate afforded N-(2-(4-amino-3,5-dicyano-6-oxo pyridazin-1(6H)-yl)phenyl)stearamide (4a) and/or N-(2-(5-acetyl-3-cyano-6-oxo-pyridazin-1(6H)-yl)phenyl)-stearamide(4b) respectively. While, the reaction of 3 with two moles of malononitrile in presence of ethanol containing few DROPs of triethylamine afforded N-(2-(6,8-diamino-4,7-dicyano-3-iminopyrido[3,2-c]pyridazin-2(3H)-yl)phenyl) stearamide (5).Also, the reactivity of dicyano derivative 3 toward some nitrogen nucleophiles was investigated. Thus, the reaction of 3 with urea and/or thiourea afforded N-(2-(4,6-diamino-2-oxo-1,2-dihyDROPyrimidin-5-yl)diazenyl)phenyl)stearamide(6a) and/or N-(2-(4-amino-2-thioxo-1,2-dihyDROPyrimidin-5-yl)diazenyl)phenyl) stearamide (6b). While, the reaction of 3 with piperidine and/or morpholine gave N-(2-(2-amino-1-cayno-2-(piperdin-1-yl)vinyl)-diazenyl)phenyl) stearamide (7a) and/or N-(2-(2-amino-1-cyano-2-morpholinovinyl)diazenyl)phenyl) stearamide (7b).The reaction of 7a,b with urea, thiourea and/or formamide gave -N-(2-(4-amino-2-oxo-6-(piperidin-1-yl)-1,2,5, 6-tetrahydr opyrimidin-5-yl)diazenyl)phenyl) stearamide 8a and/or N-(2-(4-amino-6-morpholino-2-thioxo-1,2,5,6-tetrahydo-pyrimidin-5-yl) diazenyl)phenyl) stearamide 8b, octadecanoic acid (2-(4-amino-6-morpholin-4-yl-2-oxo-1.2-dihydro-pyrimidin-5-ylazo) phenyl)-amide -8c, octadecano ic acid (2-(4-amino-6-morpholin-4-yl-2-thioxo-1.2-dihydro pyrimidin-5-ylazo)-phenyl)-amide, 8d and/or N-(2-(4-amino-6-(piperidin-1-yl)pyrimidin-5-yl)-diazenyl)phenyl) stearamide 9a and/or N-(2-(4-amino-6-morpholinopyrimidin-5-yl)diazenyl)phenyl) stearamide 9b.Also, the reaction of compound 3 with phenyl isocyanate and/or carbon disulfide gave N-(2-(1-cyano-2-(2-(phenylamino) ethanethioamimdo)-2-(piperidin-1-yl)vinyl)diazenyl) phenyl) stearamide (10a), N-(2-(1-cyano-2-morpholino-2-(2-(phenylamino)ethane-thioamido)vinyldiazenyl)phenyl)

stearamide (10b), N-(2-(2-(phenylamino)-4-(piperidin-1-yl)-6-thioxo-1,6-dihyDROPyrimidin-5-yl)diazenyl)phenyl) stearamide (11a),N-(2-(4-morpholino-2-(phenylamino)-6-thioxo-1,6-dihyDROPyrimidin-5-yl)diazenyl)phenyl) stearamide 11b.The structure of all the synthesized derivatives were established by:1- Elemental analysis 2- I.R spectra3- 1H NMR spectra 4- Mass spectraBiological activities of some synthesized compounds were investigated against some selected bacteria and fungi , and it was found that, most of these compounds have remarkable biological activities.Part IIThe synthesized compounds were used for preperation of nonoionic surfactants via the reaction of compounds containing active hydrogen atom with different moles of propylene oxide in presence of KOH.The surface active properties of the resulting compounds were measured and listed in table (3) which indicated that most of the synthesized derivatives have characteristic properties as surface active agents. The antimicrobial activities of some of the synthesized derivatives were investigated, which show that most of the derivatives has remarkable biological activities.