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MICROWAVE ASSISTED SYNTHESIS OF SOME NEW THIAZOLIDIN-4-ONE DERIVATIVES CONTAINING A PYRIMIDONE AND QUINOLINE MOITIES.

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ABSTRACT

A series of substituted thiazolidin-4-ones [IV(a-j)] were synthesized by the reaction of substituted schiff's bases [III(a-j)] with thioglycolic acid in presence of zinc chloride for 3-4 minutes in Microwave irradiation. The schiff's bases [III(a-j)] were in turn obtained by the substituted pyrimidine carboxylic acid hydrazide [II(a-j)] and 2-chloro-quinolene-3-carbaldehyde with the help of Microwave irradiation. The structures of the synthesized compounds were characterized by FT-IR, ^{1}H-NMR and ^{13}C-NMR spectral analysis.

KEY WORDS: thioglycolic acid, carboxylic acid.

INTRODUCTION

In recent years, 4-thiazolidinones and 2,4-thiazolidinediones have been among the most extensively investigated classes of organic compounds. Thiazolidine derivatives are reported to show a variety of biological activities. The presence of a thiazolidine ring in penicillin and related derivatives was the first recognition of its occurrence in nature.[1] Thiazolidine-4-one represents a prevalent scaffold in drug discovery.[2] Derivatives of thiazolidine-4-one have been known to possess a wide range of biological properties such anti-HIV[3], anti-viral[4], anti-inflammatory[5], anti-convulsant[6], anti-diabetic[7], anti-tubercular[8], anti-histamine[9] activities. Similarly, Pyrimidine derivatives exhibit many biological activities viz. anti-tumour[10], anti-malerial[11], anti-HIV[12], anti-inflammatory[13] etc.

Quinoline nucleus has received remarkable attention in medicinal science. Quinoline has prominent structural feature in a variety of natural products as well as in other compounds of

medicinal interest. Quinoline derivatives are reported to possess antitumor[14], antimalarial[15], antibacteria[16] and many other therapeutic activities.

Owing to the biological significance of these three classes of compounds namely thiazolidine, pyrimidine and quinoline, I planned to synthesize a combined molecular framework that involves these three different moieties. In continuation to my research work on thiazolidin-4-one derivatives I am reporting the synthesis 6-Methyl-2-oxo/thioxo-4-(substituted) phenyl-1, 2, 3, 4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide.

EXPERIMENTALS

General procedure for synthesis of 6-Methyl-2-oxo/thioxo-4-(substituted) phenyl-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid ethyl ester [I(a-j)].

Different substituted aldehydes (0.1 mole), Ethyl acetoacetate (0.1 mole) and urea/ thiourea (0.1 mole) were taken in a round bottom flask. To this solution H_2SO_4 were added and placed in Micro-Oven for 2-3 min. After completion of reaction, mixture was poured in ice cold water, filtered, washed and weighed. The reaction was monitored by TLC.

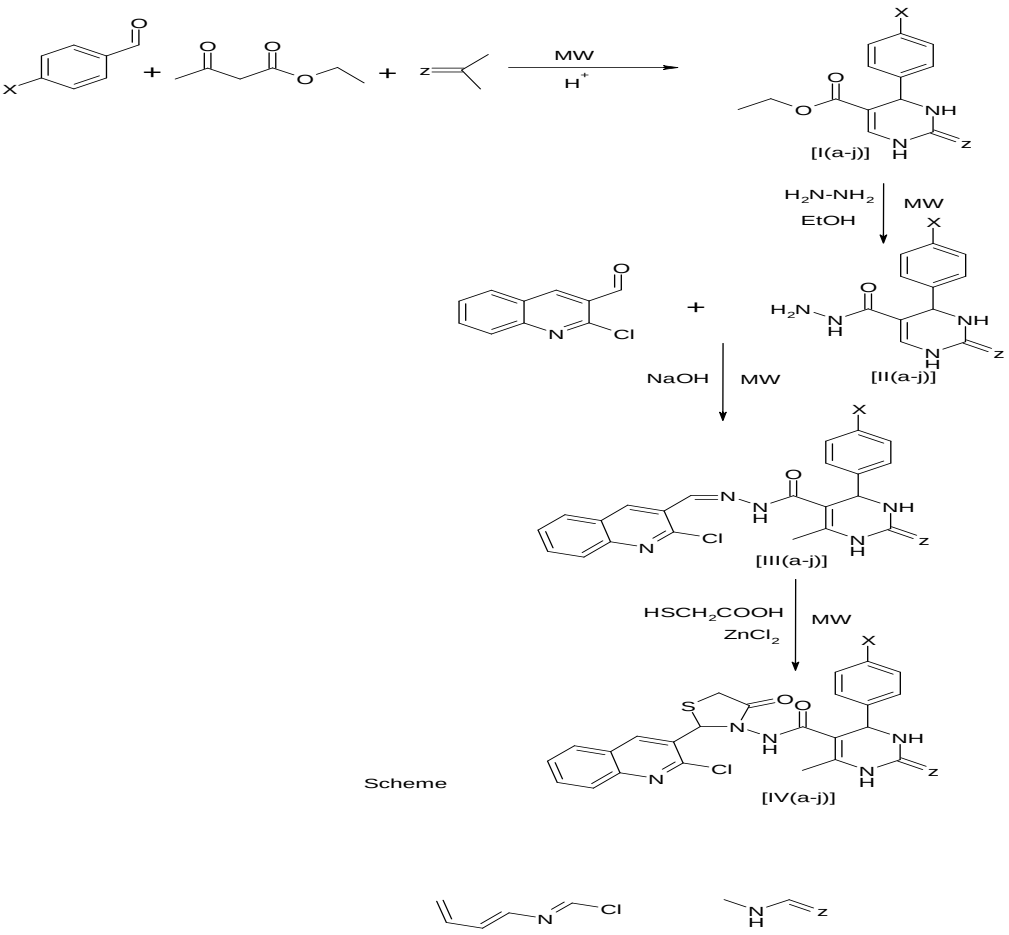
General procedure for synthesis of 6-Methyl-2-oxo/thioxo-4-(substituted) phenyl-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid hydrazide [II(a-j)] :-

The compound [I (a-j)] (0.01) mole was dissolved in ethanol and in this solution hydrazine hydrate (0.01 Mole) added dropwise. Flask was placed in Micro-Oven for 3-4 min. The reaction was monitored by TLC. After completion of reaction solid was formed. This solid was poured into ice cold water, filtered, washed and weighed.

General procedure for synthesis of 6-Methyl-2-oxo/thioxo-4-(substituted) phenyl-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [1-(2-chloro-quinolin-3-yl)-meth-(Z)-ylidene]-hydrazide [III (a-J)]: A compound [II (a-j)] (0.01 mol) and 2-methylquinoline-3-carbaldehyde (0.01 mol) was dissolved in methanol (25 ml). Catalytic amount of glacial acetic acid was added and mixture was kept in microwave oven for four min. The solvent was removed under reduced pressure and the resulting crude product was purified by passing it through a chromatographic column packed with silica gel using chloroform: methanol (8:2 v/v) as eluent to give compounds [III (a-j)].

General procedure for synthesis of 6-Methyl-2-oxo/thioxo-4-(substituted) phenyl-1, 2, 3, 4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV(a-j)]

The mixture of Schiff base [III (a-j)] (0.01 mol) and triethyl amine (0.02 mol) was dissolved in methanol (15 m1). To this, a solution of thioglycolic acid (0.01 mole) and pinch of zinc chloride was added. This resulting mixture was placed in microwave oven for 4 minutes. The crude product was purified by column chromatography by using chloroform and methanol (6:4 v/v) as eluent gives product [IV (a-j)]



Scheme

Table 1: Physical data of the compounds [IV (a-j)]

Comp.	X	Z	Yield %	M.P. ^{0}C	Molecular Formula	MW	Elemental Analysis Found (Calculated) %		
							C	H	N
III-a	H	O	75	158	$C_{22}H_{18}ClN_5O_2$	420	62.89	4.36	16.79
III-b	H	S	72	169	$C_{22}H_{18}ClN_5OS$	436	60.69	4.19	16.19
III-c	Cl	O	76	219	$C_{22}H_{17}Cl_2N_5O_2$	454.5	58.13	3.68	15.62
III-d	Cl	S	69	231	$C_{22}H_{17}Cl_2N_5OS$	470.5	56.08	3.69	14.82
III-e	OH	O	65	186	$C_{22}H_{18}ClN_5O_3$	436	60.69	4.19	16.15
III-f	OH	S	69	218	$C_{22}H_{18}ClN_5O_2S$	452	58.42	4.06	15.62

III-g	OCH_3	O	76	190	$C_{23}H_{20}ClN_5O_3$	450	61.52	4.52	15.62
III-h	OCH_3	S	74	211	$C_{23}H_{20}ClN_5O_2S$	466	59.17	4.36	15.09
III-i	NO_2	O	72	172	$C_{22}H_{19}ClN_6O_4$	467	56.65	4.15	17.85
III-j	NO_2	S	76	184	$C_{22}H_{19}ClN_6O_3S$	483	54.75	4.01	17.42
IV-a	H	O	81	172	$C_{24}H_{20}ClN_5O_3S$	494	58.40	4.02	14.25
IV-b	H	S	76	199	$C_{24}H_{20}ClN_5O_2S_2$	510	56.60	3.59	13.85
IV-c	Cl	O	75	238	$C_{24}H_{19}Cl_2N_5O_3S$	528.5	55.02	3.81	13.36
IV-d	Cl	S	79	252	$C_{24}H_{19}Cl_2N_5O_2S_2$	544.5	52.86	3.48	12.78
IV-e	OH	O	69	244	$C_{24}H_{20}ClN_5O_4S$	510	56.69	3.86	13.79
IV-f	OH	S	73	226	$C_{24}H_{20}ClN_5O_3S_2$	526	54.94	3.73	13.42
IV-g	OCH_3	O	72	206	$C_{25}H_{22}ClN_5O_4S$	524	57.41	4.29	13.25
IV-h	OCH_3	S	79	221	$C_{25}H_{22}ClN_5O_3S_2$	540	55.69	4.19	12.89
IV-i	NO_2	O	69	192	$C_{24}H_{21}ClN_6O_5S$	541	53.66	3.82	15.56
IV-j	NO_2	S	63	239	$C_{24}H_{21}ClN_6O_4S_2$	557	51.76	3.78	15.06

Spectral Characterization and elemental analysis of synthesized compounds [IV (a-j)].

6-Methyl-2-oxo-4-phenyl-1, 2, 3, 4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-a]

Molecular Formula: $C_{24}H_{20}ClN_5O_3S$, Molecular Wt.494 M.P.172 ^{0}C, Elemental analysis: C, 58.36(58.40%); H, 4.02(4.08%); N, 14.25(14.18%). IR (KBr) ν max cm^{-1}, 3332(-NH), 1652(>C=C<), 1668(>C=O amido), 3050(Ar-H), 836(-C-Cl);. ^{1}H-NMR($CDCl_3$) (δ ppm): 2.02 (3H,s,CH_3), 4.06-4.34(2H,s,S-CH_2), 5.14(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.24-7.33(5H,m,Ar-H), 7.75(1H,s,-NH), 9.34(1H,s,-NH), 9.36(1H,s,-NH). ^{13}C NMR (δ ppm) : 19.35(-CH3), 33.58(S-CH_2-C=O), 53.30(Ar-C-NH), 67.47(S-CH-Ar), 126.29(2×=CH), 127.56(=CH), 127.68(2×=CH), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 166.48(>C=O) 174.43(>C=O).

6-Methyl-4-phenyl-2-thioxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-b]

Molecular Formula: $C_{24}H_{20}ClN_5O_2S_2$, Molecular Wt.510 M.P.199 ^{0}C, Elemental analysis: C, 56.60 (56.52%); H, 3.59(3.95%); N, 13.85(13.73%). IR (KBr) ν max cm^{-1}, 3332(-NH), 1652(>C=C<), 1668(>C=O amido)3050(Ar-H), 840(-C-Cl);. ^{1}H-NMR($CDCl_3$) (δ ppm): 2.26 (3H,s,CH_3), 4.06-4.34(2H,s,-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.24-7.33(5H,m,Ar-H), 8.03(1H,s,-NH), 9.34(1H,s,-NH), 9.64(1H,s,-NH). ^{13}C NMR (δ ppm) : 18.20(-CH3), 33.58(S-CH_2-C=O), 52.71(Ar-C-NH), 67.47(S-CH-Ar), 126.29(2×=CH), 127.56(=CH), 127.68(2×=CH), 140.01(=CH), 123.55(=CH), 127.26(=CH),

127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.11(CH_3-C-NH), 166.48(>C=O) 173.70(>C=S) 174.43(>C=O).

4-(4-Chloro-phenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-c].

Molecular Formula: $C_{24}H_{19}Cl_2N_5O_3S$, Molecular Wt.528.5 M.P.238 ^{0}C, Elemental analysis: C, 55.02(54.55%); H, 3.81(3.62%); N, 13.36(13.25%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3045(Ar-H), 1672(>C=O amido), 1652(>C=C<) ,836(-C-Cl); ^{1}H-NMR($CDCl_3$) (δ ppm): 2.02 (3H,s,CH_3), 4.06-4.34(2H,s,S-CH_2), 5.14(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.24-7.40(4H,m,Ar-H), 7.75(1H,s,-NH), 9.34(1H,s,-NH), 9.36(1H,s,-NH). ^{13}C NMR (δ ppm) : 19.35(-CH3), 33.58(S-CH_2-C=O), 53.30(Ar-C-NH), 67.47(S-CH-Ar), 128.76(4×=CH), 133.39(=CH), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 166.48(>C=O) 174.43(>C=O).

4-(4-Chloro-phenyl)-6-methyl-2-thioxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-d].

Molecular Formula: $C_{24}H_{19}Cl_2N_5O_2S_2$, Molecular Wt.544.5 M.P.252 ^{0}C, Elemental analysis: C, 52.86 (52.94%); H, 3.48(3.52%); N, 12.78(12.86%). IR (KBr) ν max cm^{-1}: 3335(-NH), 1642(>C=C<), 1672(>C=O amido), 3052(Ar-H), 838(-C-Cl);. ^{1}H-NMR($CDCl_3$) (δ ppm): 2.26 (3H,s,CH_3), 4.06-4.34(2H,s,-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.24-7.40(4H,m,Ar-H), 8.03(1H,s,-NH), 9.34(1H,s,-NH), 9.64(1H,s,-NH). ^{13}C NMR (δ ppm) : 18.20(-CH3), 33.58(S-CH_2-C=O), 52.71(Ar-C-NH), 67.47(S-CH-Ar), 128.76(4×=CH), 133.39(=CH), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.11(CH_3-C-NH), 166.48(>C=O) 173.70(>C=S) 174.43(>C=O).

4-(4-Hydroxy-phenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-e]

Molecular Formula: $C_{24}H_{20}ClN_5O_4S$, Molecular Wt.510, M.P.244 ^{0}C, Elemental analysis: C, 56.69(56.53%); H, 3.86(3.95%); N, 13.69(13.73%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3050(Ar-H), 1672(>C=O amido), 1652(>C=C<) ,836(-C-Cl); ^{1}H-NMR($CDCl_3$) (δ ppm): 2.02 (3H,s,CH_3), 4.06-4.34(2H,s,S-CH_2), 5.14(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-

7.90(5H,m,Ar-H), 6.64-7.02(4H,m,Ar-H), 7.75(1H,s,-NH), 9.34(1H,s,-NH), 9.36(1H,s,-NH), 9.33(1H,s,-OH). ^{13}C NMR (δ ppm) : 19.35(-CH3), 33.58(S-CH_2-C=O), 53.30(Ar-C-NH), 67.47(S-CH-Ar), 115.55(2×=CH), 127.70(2×=CH), 157.35(=C-OH), 141.5(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 166.48(>C=O) 174.43(>C=O).

4-(4-Hydroxy-phenyl)-6-methyl-2-thioxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-f]

Molecular Formula: $C_{24}H_{20}ClN_5O_3S_2$, Molecular Wt.540, M.P.221 ^{0}C, Elemental analysis: C, 54.94(54.80%); H, 3.73(3.83%); N, 13.42(13.31%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3050(Ar-H), 1672(>C=O amido), 1652(>C=C<) ,836(-C-Cl); ^{1}H-NMR($CDCl_3$) (δ ppm): 2.26 (3H,s,CH_3), 4.06-4.34(2H,s,-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 6.64-7.02(4H,m,Ar-H), 8.03(1H,s,-NH), 9.34(1H,s,-NH), 9.64(1H,s,-NH), 9.33(-OH). ^{13}C NMR (δ ppm) : 18.20(-CH3), 33.58(S-CH_2-C=O), 52.71(Ar-C-NH), 67.47(S-CH-Ar), 115.55(2×=CH), 127.57(2×=CH), 157.35(=C-OH), 141.5(=CH),123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH), 150.71(=CH), 128.50(O=C-C), 148.11(CH_3-C-NH), 166.48(>C=O) 173.70(>C=S) 174.43(>C=O).

4-(4-Methoxy-phenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-g]

Molecular Formula: $C_{25}H_{22}ClN_5O_4S$, Molecular Wt.524, M.P.206 ^{0}C, Elemental analysis: C, 57.41(57.30%); H, 4.29(4.23%); N, 13.25(13.37%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3040(Ar-H), 1672(>C=O amido), 1652(>C=C<), 840(-C-Cl); ^{1}H-NMR($CDCl_3$) (δ ppm): 2.02 (3H,s,-CH_3), 3.77(3H,s,-OCH_3) 4.06-4.34(2H,s,S-CH_2), 5.14(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 6.83-7.17(4H,m,Ar-H), 7.75(1H,s,-NH), 9.34(1H,s,-NH), 9.36(1H,s,-NH). ^{13}C NMR (δ ppm) : 19.35(-CH3), 33.58(S-CH_2-C=O), 53.30(Ar-C-NH), 55.10(Ar-OCH_3) 67.47(S-CH-Ar), 113.90(2×=CH), 127.70(2×=CH), 158.50(=C-OCH_3), 141.45(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH-Cl), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 166.48(>C=O) 174.43(>C=O).

4-(4-Methoxy-phenyl)-6-methyl-2-thioxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-h]

Molecular Formula: $C_{25}H_{22}ClN_5O_3S_2$, Molecular Wt.524, M.P.206 ^{0}C, Elemental analysis: C, 55.69(55.60%); H, 4.19(4.11%); N, 12.89(12.97%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3050(Ar-H), 1672(>C=O amido), 1652(>C=C<), 836(-C-Cl); ^{1}H-NMR($CDCl_3$) (δ ppm): 2.26 (3H,s,-CH_3), 3.71(3H,s,-OCH_3) 4.06-4.34(2H,s,S-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 6.87-7.27(4H,m,Ar-H), 8.03(1H,s,-NH), 9.34(1H,s,-NH), 9.64(1H,s,-NH). ^{13}C NMR (δ ppm) : 18.20(-CH3), 33.58(S-CH_2-C=O), 52.71(Ar-C-NH), 55.10(Ar-OCH_3) 67.47(S-CH-Ar), 113.80(2×=CH), 127.57(2×=CH), 158.43(=C-OCH_3), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH-Cl), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 173.70(>C=S) 174.43(>C=O).

4-(4-Nitro-phenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-i]

Molecular Formula: $C_{24}H_{21}ClN_6O_5S$, Molecular Wt.541, M.P.192 ^{0}C, Elemental analysis: C, 53.66(53.60%); H, 3.82(3.89%); N, 15.26(15.47%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3050(Ar-H), 1672(>C=O amido), 1652(>C=C<), 836(-C-Cl); 1350 (Ar-NO_2) ^{1}H-NMR($CDCl_3$) (δ ppm): 2.02 (3H,s,-CH_3), 4.06-4.34(2H,s,S-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.51-8.18(4H,m,Ar-H), 9.36(1H,s,-NH), 9.34(1H,s,-NH), 7.75(1H,s,-NH). ^{13}C NMR (δ ppm) : 19.35(-CH3), 33.58(S-CH_2-C=O), 53.30(Ar-C-NH), 67.47(S-CH-Ar), 123.70(2×=CH), 127.50(2×=CH), 147.20 (=C-NO_2), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH-Cl), 150.71(=CH), 128.50(O=C-C), 148.60(CH_3-C-NH), 152.10(>C=O) 166.48(>C=O) 174.43(>C=O).

4-(4-Nitro-phenyl)-6-methyl-2-thioxo-1,2,3,4-tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide [IV-j]

Molecular Formula: $C_{24}H_{21}ClN_6O_4S_2$, Molecular Wt.557, M.P.239 ^{0}C, Elemental analysis: C, 51.76(51.60%); H, 3.78(3.82%); N, 15.06(15.07%). IR (KBr) ν max cm^{-1}: 3332(-NH), 3050(Ar-H), 1672(>C=O amido), 1652(>C=C<), 836(-C-Cl); 1350 (Ar-NO_2) ^{1}H-NMR($CDCl_3$) (δ ppm): 2.26 (3H,s,-CH_3), 4.06-4.34(2H,s,S-CH_2), 5.03(1H,s,Ar-CH), 5.78(1H,s,Ar-CH-S),7.57-7.90(5H,m,Ar-H), 7.51-8.18(4H,m,Ar-H), 8.03(1H,s,-NH), 9.34(1H,s,-NH), 9.64(1H,s,-NH). ^{13}C NMR (δ ppm) : 18.20(-CH3), 33.58(S-CH_2-C=O),

52.71(Ar-C-NH), 67.47(S-CH-Ar), 123.70(2×=CH), 127.50(2×=CH), 147.20 (=C-NO_2), 140.01(=CH), 123.55(=CH), 127.26(=CH), 127.41(=CH), 128.50(=CH), 128.54(=CH), 130.60(=CH), 132.81(=CH), 148.10(=CH-Cl), 150.71(=CH), 128.50(O=C-C), 148.11(CH_3-C-NH), 173.70(>C=S) 166.48(>C=O) 174.43(>C=O).

RESULT AND DISCUSSION

I have synthesized new thiazolidene derivatives from pyrimidine and quinolene derivatives. The mixture of aldehydes, ethyl acetoacetate and urea/ thiourea gives the compound tetrahydro-pyrimidine-5-carboxylic acid ethyl ester. This compound reacts with hydrazine hydrate gives tetrahydro-pyrimidine-5-carboxylic acid hydrazide. This on reflux with 2-methylquinoline-3-carbaldehyde gives tetrahydro-pyrimidine-5-carboxylic acid [1-(2-chloro-quinolin-3-yl)-meth-(Z)-ylidene]-hydrazide. This compound on reacting with thioglycolic acid formed product tetrahydro-pyrimidine-5-carboxylic acid [2-(2-chloro-quinolin-3-yl)-4-oxo-thiazolidin-3-yl]-amide. The yield of compounds found to be in the range of 60-80%. The products were characterized by elemental analysis, IR, NMR and mass spectroscopy.

CONCLUSION

In conclusion, I have demonstrated a simple and efficient protocol for the synthesis of thiazolidene derivatives with pyrimidine and quinoline moities. The method is very simple, clean and yield of the products are good.

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