SUMMARY

This study presents the synthesis of the N-(2-(4-chlorophenyl)-1-(4-oxo-4H-benzo[d][1,3]oxazin-2-yl)vinyl)-2-(1,3-dioxoisoindolin-2-yl)acetamide (**2**). It was synthesized by treatment of anthranilic acid with (Z)-2-((4-(4-chlorobenzylidene)-5-oxo-4,5-dihydrooxazol-2-yl)methyl)isoindoline-1,3-dione (**1**).Amminolysis of (**2**) gave 2-(substituted)-carbamoyl phenyl acetanilides(**3**$_{\mathbf{a\text{-}h}}$).

The benzoxazinone (**2**) underwent ring fission of the hetero cyclic ring when heated with hydrazine hydrate and gave the amide derivative (**4**$_{\mathbf{a}}$). On the other hand, reaction of (**2**) with phenyl hydrazine, yielded quinazolinone derivative (**4**$_{\mathbf{b}}$).

While treatment of (**2**) with ethyl acetoacetate gave carbethoxy 3,4-dihydro-1,4-quinolinone derivative (**5**).

Benzoxazinone (**2**) reacted with sodium azide and yielded tetrazole (**6**). While treatment of (**2**) with anhydrous $AlCl_3$ in hydrocarbons under the Fridel-Crafts condition reaction gave o-substituted phenyl aryl ketones (**7**$_{\mathbf{a,b}}$).

On the other hand, Mannich reaction of (**2**) gave Mannich base (**9**). While treatment of (**2**) with dimethyl maleate in dry xylene gave the corresponding Diels-Alder adducts (**10**).

Otherwise, benzoxazinone (**2**) was allowed to react with semicarbazide hydrochloride in boiling pyridine which afforded quinazolinyl urea derivative (**11**). On fusion of the above compound at its melting point it was cyclized to produce triazole quinazoline derivative (**12**).

Moreover, benzoxazinone (**2**) was treated with thiosemicarbazide in boiling pyridine and afforded (**13**).

While ammonolysis of (**2**) gave the corresponding 2-substituted-4(3H)-quinazol-4-one derivative (**14**). The lactam-lactim tautomerism of (**14**) was further demonstrated chemically by studies the effect of alkylating agent, acetic anhydride, a mixture of phosphorus pentachloride and phosphorus oxychloride and Mannichreaction to give 4-(substiuted)-2-(substiuted)-quinazolin-4-ones(**15**), 3N-acetyl-2-(substituted)-quinazolin-4-one (**16**), 2-(substituted)vinyl-4-chloroquinazolin-4-one (**17**) and the Mannich base 3N-(substituted)-quinazolin-4-one (**18**) respectively.

Quinazolinone (**14**) reacts with ethyl chloroacetate in dry acetone and in the presence of dry potassium carbonate to give compound (**19**) which was further

demonstrated chemically byhydrazinolysis of the ester by hydrazine hydrate to yield the hydrazide derivative (**20**).

Furthermore, the hydrazide derivative (**20**) wasreacted with phenyl isocyanate in dioxane and p-chlorobenzaldhyde in absolute ethanol and 1ml pipridine to give (**21**) and (**22**) respectively.

Benzoxazinone (**2**)reacted with hydroxylamine hydrochloride in the presence of sodium acetate in boiling ethanol to give N-(2-(4-chlorophenyl)-1-(3-hydroxy-4-oxo-3,4-dihydroquinazolin-2-yl)vinyl)-2-(1,3-dioxoisoindolin-2-yl)acetamide (**22**).

On the other hand, 3-N-hydroxy-4-quinazolone derivative (**23**) used as a key starting material for synthesis of some interesting heterocyclic compounds and it was further demonstrated chemically by studies the effect of acetic anhydride and ethyl chloroacetateto give2-(2-(4-chlorophenyl)-1-(2-(1,3-dioxoisoindolin-2-yl)acetamido)vinyl)-4-oxoquinazolin-3(4H)-yl acetate (**24**) and ethyl 2-(2-(2-(4-chlorophenyl)-1-(2-(1,3-dioxoisoindolin-2-yl)acetamido)vinyl)-4-oxoquinazolin-3(4H)-yloxy)acetate (**25**) respectively.

The compound (**25**) was further demonstrated chemically byhydrazinolysis of the ester by hydrazine hydrate to yield the hydrazide derivative (**26**).

Moreover, the hydrazide derivative (**26**) wasreacted with phenyl isocyanate in dioxane and p-chlorobenzaldhyde in absolute ethanol and 1ml pipridine to give (**27**) and (**28**) respectively.

The structure of all synthesized derivatives compounds is established by: (i) elemental analysis, (ii) IR, (iii) H^1NMR, (iv) Mass spectra.

Biological activities of some synthesized compounds was investigated and the results are presented.