بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

Cairo University
Faculty of Science
Department of Chemistry

STUDEIS ON THE SYNTHETIC POTENTIALITIES OF SOME CYANOACTAMIDE DERIVATIVES

A Thesis Submitted

For

The M.Sc. Degree in Chemistry

By

Asmaa Mahmoud Fahim Abd Elwahed

(B.Sc. Cairo University, 2005)

Department of Chemistry
Faculty of Science
Cairo University
Giza, Egypt

2009

APPROVAL SHEET FOR SUBMISSION

Title of the M.Sc. Thesis: STUDIES ON THE SYNTHETIC POTENTIALITES OF SOME CYANOACETAMIDE DERIVATIVES

Name of Candidate: Asmaa Mahmoud Fahim Abd Elwahed

This Thesis has been approved for submission by Supervisors:

1. **Prof. Dr. Ahmad M. Farag** A. M. Farag
   Signature:
2. **Dr. Mohamed R. Shaaban** M. R. Shaaban
   Signature:
3. **Dr. Eman A. Ragab**
   Signature:

M. Shokry

Prof. Dr. Mohamed Shokry

Chairman of Chemistry Department
Faculty of Science, Cairo University

ABSTRACT

Name of Candidate: Asmaa Mahmoud Fahim Abd Elwahd

Title of the M.Sc. Thesis: STUDIES ON THE SYNTHETIC POTENTIALITES OF SOME CYANOACETAMIDE DERIVATIVES.

Degree: (M.Sc.) thesis, Faculty of Science, Cairo University, 2009

This work has been carried out to investigate the utility of 2-cyano-*N*-cyclohexylacetamide for the synthesis of a variety of new heterocyclic compounds such as aminopyrazole, pyrazole, benzimdazolo[1,5-*a*]pyrimidine, triazolo[1,5-*a*] pyrimidine, pyrazolo[5,1-*c*][1,2,4]triazine, triazolo[5,1-*c*]triazine, imidazo[2,1-*c*][1,2,4]triazine derivatives, pyrazolo[1,5-*a*]pyrimidine, triazolo[4,3-*a*]pyrimidine, pyrimido[1,2-*b*]indazole, new substituted thiophenes and phenylthiazol derivatives, and 1,2,4-thiadiazoles of potential biological activity.

Key Words: 2-cyano-*N*-cyclohexylacetamide, pyrazole, benzimdazolo[1,5-*a*]pyrimidine, pyrazolo[5,1-*c*][1,2,4]triazine, pyrazolo[1,5-*a*]pyrimidine, triazolo[1,5-*a*]pyrimidine, pyrazolo[1,5-*a*]pyrimidine, pyrimido[1,2-*b*]indazole, triazolo[4,3-*a*]pyrimidine, thiophene, phenylthiazol, and 1,2,4-thiadiazole.

SUPERVISORS

1. **Prof. Dr. Ahmad M. Farag** A. M. Farag
   Signature:
2. **Dr. Mohamed R. Shaaban** M. R. Shaaban
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3. **Dr. Eman A.Ragab**
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ACKNOWLEDGMENT

The author wishes to express her most sincere thanks and full gratitude to **Prof. Dr. Ahmad M. Farag,** *Professor of Organic Chemistry, Faculty of Science, Cairo University, for his supervision, kind advices, useful discussion, reviewing the dissertation and encouragement throughout this work.*

She would like to express his sincere gratitude to **Dr. Mohamed R. Shaaban,** *Assistant Professor of Organic Chemistry, Faculty of Science, Cairo University, for his kind advices, for suggesting and directing the research project, useful discussion, reviewing the dissertation and encouragement throughout this work.*

The author wishes also to express her deep gratitude and appreciation to **Dr. Eman A. Ragab,** *Lecturer of Organic Chemistry, for her kind support, useful discussion and encouragement throughout this work.*

Finally, the author would like to express her appreciation to all who make possible the completion of this work in its final form.

Asmaa Mahmoud

M.Sc. Courses Studied by the candidate

Beside the work carried out in this thesis, the candidate had attended and successfully passed a final examination of M.Sc. courses (2006) in organic chemistry converting the following topics:

1- Applied Spectroscopy.
2- Physical Organic Chemistry.
3- Heterocyclic Chemistry.
4- Designing Organic Chemistry.
5- Natural products.
6- Carbohydrate chemistry.
7- Dyes.
8- Photochemistry.
9- Biochemistry.
10- Polymer Chemistry.
11- Quantum Chemistry.
12- Advanced Analytical Chemistry.
13- Advanced Organic Chemistry.
14- Molecular Structure.
15- Selected Topics.
16- Foreign Language (German).

Prof. Dr. Mohamed Shokrie

Chairman of Chemistry Department
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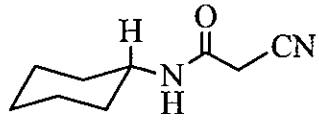
AIM OF THE WORK

I. AIM OF THE PRESENT WORK

The present study was undertaken to explore the utility of the 2-cyano-*N*-cyclohexylacetamide (**16**) as an excellent building block for the synthesis of a variety of heterocyclic ring systems for biological screening.

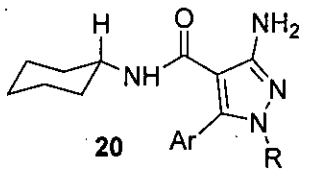


16

Examples of the target compounds are:

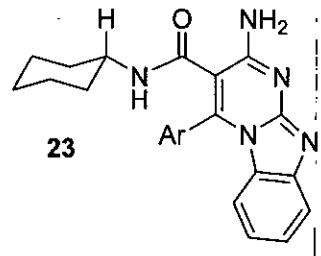
3-amino-*N*-cyclohexyl-5-(4-methoxyphenyl)-1*H*-pyrazole-4-carboxamide derivatives **20a,b**, 5-amino-*N*-cyclohexyl-7-(4-methoxyphenyl)benzimdazolo[1,5-*a*]pyrimidine-carboxamide (**23**), 5-amino-*N*-cyclohexyl-7-(4-(dimethylamino)phenyl)pyrazolo[1,5-*a*]pyrimidine-6-carboxamide (**26**), 5-amino-*N*-cyclohexyl-7-(4-methoxyphenyl)-[1,2,4]-triazolo[1,5-*a*]pyrimidine-6-carboxamide (**29**), 4-amino-1-(4-chlorophenyl)-5-cyano-*N*-cyclohexyl-1*H*-pyrazole-3-carboxamide (**33**), 4-amino-*N*-cyclohexyl-7-phenylpyrazolo[5,1-*c*][1,2,4]triazine-3-carboxamide (**35**), 4-amino-*N*-cyclohexyl-[1,2,4]triazolo[5,1-*c*][1,2,4]triazine-3-carboxamide (**38**), 4-aminobenzo[4,5-*a*]imidazo-*N*-cyclohexylimidazo[2,1-*c*][1,2,4]triazine-3-carboxamide (**41**), ethyl4-(cyclohexylcarbamoyl)-5-amino-1-(4-methoxyphenyl)-1*H*-pyrazole-3-carboxylate (**43**), 5-benzyl-4-amino-*N*-cyclohexyl-2-(phenylamino)thiophene-3-carboxamide derivaitives **48a,b**, ethyl 4-(cyclohexylcarbamoyl)-3-amino-5-(phenylamino)thiophene-2-carboxylate (**51**), 4-amino-5-cyano-*N*-cyclohexyl-2-(phenylamino)thiophene-3-carboxamide (**52**), (2*E*)-2-cyano-*N*-cyclohexyl-2-(4-methyl-3-phenylthiazol-2(3*H*)-ylidene)acetamide (**54**), (2*E*)-2-cyano-*N*-cyclohexyl-2-(5-propionyl-3-*p*-tolyl-1,3,4-thiadiazol-2(3*H*)-ylidene)acetamide derivatives **57a-e**, 2,4-diamino-*N*-cyclohexylpyrimidine-5-carboxamide (**62**), 5-

amino-*N*-cyclohexylpyrazole-4-carboxamide derivatives **66a-c**, 7-amino-*N*-cyclohexyl-1,7-dihydro-2-methyl-3-phenylpyrazolo[1,5-*a*]pyrimidine-6-carboxamide derivatives **69a-f**, 4-amino-*N*-cyclohexyl-[1,2,4]triazolo[5,1-*c*][1,2,4]triazine-3-carboxamide (**70**), 4-aminobenzo[4,5-*a*]imidazo-*N*-cyclohexylimidazo[2,1-*c*][1,2,4]triazine-3-carboxamide (**71**).



20

20	R	Ar
a	H	4-$OCH_3C_6H_4$
b	Ph	4-$OCH_3C_6H_4$



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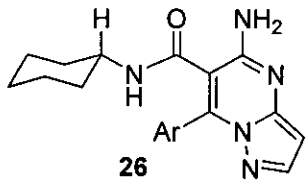
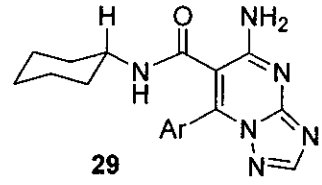
Ar = 4-$OCH_3C_6H_4$



26

Ar = 4-$N(CH_3)_2C_6H_4$



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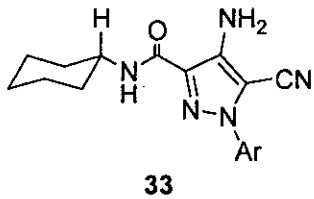
Ar = 4-$OCH_3C_6H_4$



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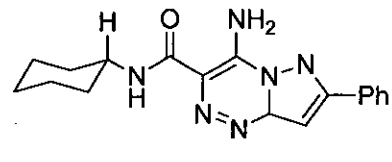
Ar = 4-ClC_6H_4



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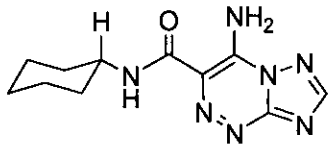

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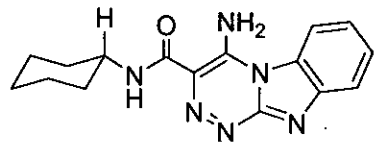

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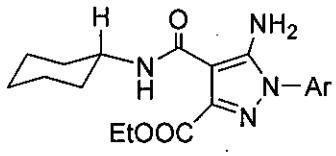

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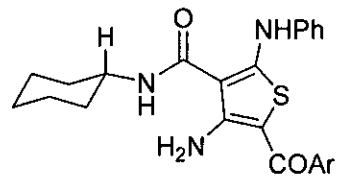
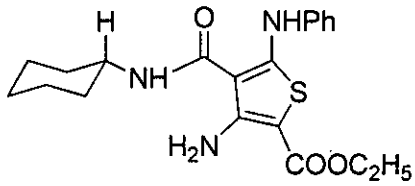
Ar = 4-$OCH_3C_6H_4$



48

48	Ar
a	C_6H_5
b	4-BrC_6H_4



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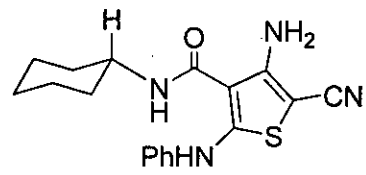

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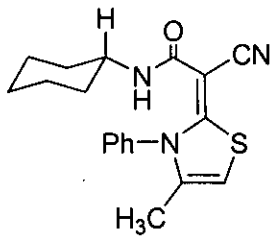

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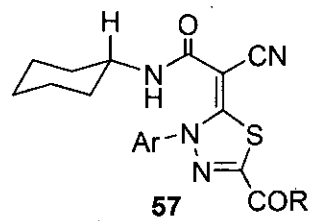
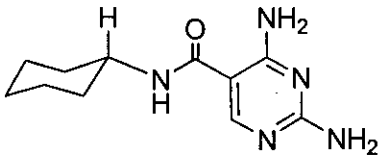


57

57	R	Ar
a	OC_2H_5	4-ClC_6H_4
b	OC_2H_5	4-$CH_3C_6H_4$
c	OC_2H_5	4-$CH_3OC_6H_4$
d	OC_2H_5	C_6H_5
e	C_6H_5	C_6H_5



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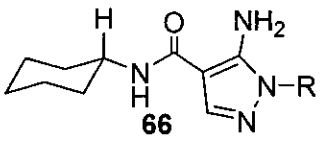
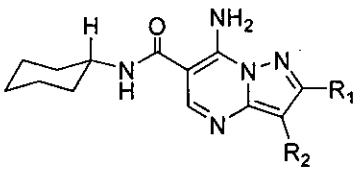


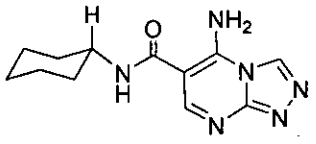
66

66	R
a	H
b	Ph
c	$PhSO_2$



69

3	R_1	R_2
a	CH_3	C_6H_5
b	H	CH_3
c	H	*N*=*N*-2-Cl-C_6H_4
d	H	4-Br-C_6H_4
e	H	4-$OCH_3C_6H_4$
f	Br	C_6H_5



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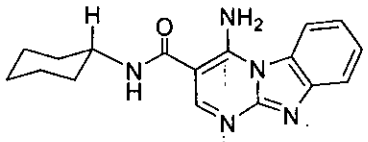

71