

Synthesis compounds of Thiopyran Pyridinium Perchlorate and studying its Bioactivity: Part1.

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ABSTRACT

A synthesis Four Pyridinium perchlorate Compounds from reaction one mole pyrylium salt (product already) with one mole 2-Aminoethylenethiol in room temp. and diagnosing them by Spectrally (FTIR., 1H.N.M.R.) in addition to the accurate quantitative elemental analysis.

A synthesis sixteen Thiopyranpyridiniumperchlorate Compounds from reaction one mole from Pyridinium compounds Produced with one mole pyrylium salt (product already) in under zero temp. very good yields and diagnosing them by pectrally (FTIR., 1H.N.M.R.) in addition to the accurate quantitative elemental analysis. A should Molecular Weight for Synthesis compounds By using down Freeze Degree apparition Molecular Weight for Synthesis compounds compared to Molecular Weight cast. Studying the antimicrobial activity of the synthesized compound was tested against Gram positive and Gram negative bacteria and some fungi and have high good effect upon some becteria and fungi. This method provides several advantages such as very good yield, simple work-up procedure and environment friendly and compounds it more important in the field of medicinal and synthesis it.

Introduction

Pyrylium compounds are compound of a 6-member Hetrocyclic ring with a six- π -electron system. The hetro atom is an sp²- hybridised trivalent oxygen in the form of an oxonium ion. The Pyrylium cation can be combined with nucleophilic anion trihalides (except the fluoride ion) and with most Complex anions of low polarisability and weak nucleophilic properties, Chloroferrate (1), Chloroaluminate (2), Fluoroborate (3)... Etc. However, stable crystalline forms of the Pyrylium compounds are obtained as perchlorate(3) (4).

The Pyrylium cation reaction with primary (mono amine compounds)(5,6) and (Di amino compounds)(8) Product Pyrydinium and Bis-Pyrydinium diagnosing them Spectrally FTIR., U.V. and N.M.R. in addition to the accurate quantitative elemental analysis (5,6,7,8).

The Pyrylium cation reaction with aqueous solution of sodium sulphide in acidic medium, product six thiopyrylium perchlorate(5,8) . Synthesis 1,2,4,6-tetra phenyl thiopyran benzene from reaction 2,4,6-Tri phenyl thiopyrylium with PhLi.(9). Synthesis them , palladium complex is obtained from the reaction of Pd(PPh₃)₄ and [ArC₄NSSN]⁺ (Ar = 4-pyridyl).(10). The cyclotrithiazyl cation, [S₂N₃]⁺ dithiadiazolium mono- and di-cations, respectively. In contrast to the latter reaction, the combination of PhHgCN with [S₂N]⁺ produces the cationic sulfur-nitrogen chain [Ph₄S₄N₃Ph]⁺.(11,12) A mixed 1,3,2,4-/1,2,3,5-dithiadiazolium dication is produced by reaction of [4-CNC₆H₄CN₂SSN]AsF₆ with [S₂N]AsF(13,14).

EXPERIMENTAL

Used Pyrylium compounds were prepared according to procedure described by AL-Heety(6,7), give Physical and experimental properties of their

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diagnosing them Spectrally (FTI.R., U.V. and 1H.N.M.R.) in addition to the accurate quantitative.

Instrumentation:

Used Shimadzu. FTI.R. fourietransform Infrared Spectrophotometer- (8300), By using KBr disc., C.H.N.: Element Analysis, (Elmer 240 B-perken) and 1H.N.M.R. Spectrophotometer Bruker Ac-200 MH2 By using DMSO-d6 solvent. Univ. Mutaa, College of Scince Dept. of Chemistry Jordan.

Preparation Pyridinium Compound:

Add gradually (0.0088mol (3.6g)) of (2,4,6-Triphenyl Pyrylium perchlorate) Dissolved in (30 ml of Ethanol 95%) to (2-Aminoethylenethiol) (0.0088mol (0.68g)) Dissolved in (10 ml of Ethanol 95%) with constant shaking (using Magnetic steerer)at room temperature also show Dissolved color red and heating Dissolved was stirred at refluxing for two hours. The end of shaking and heating after reaction completion hidden color red of Dissolved. Cede of Dissolved and Cooling it at room temperature, precipitated of 1-(2-Mercapto-ethyl)-2,4,6-triphenyl-pyridinium;

perchlorate (A) (add Diethyiether to Dissolved and precipitated other Pyridinium Compound) solid was filtered off and washed with (10 ml water) and the crude products were got recrystallization by ethanol 95%. The gross weight (2.9 g) per. (80.6%) with a melting point (251-252 C0). Was diagnosing them Spectrally (FTFTI.R., 1HNMR.) (Table (4),(5)) in addition to the accurate quantitative elemental analysis. (See Table(1)),

In the same way been preparing Eight Compounds . (See. Table (1)) ,

Thiopyran Pyridinium compound:

Add gradually (0.0053mol (2.5g)) of (4,6-Diphanyl-2-(3.4-dimethoxyphanyl) Pyridinium

prechlorate) Dissolved in (20 ml of Ethanol 95%) to (0.0053mol(2.34g)) [1-(2-Mercapto-ethyl)-2,4,6-triphenyl-pyridinium; perchlorate(A)] Dissolved in (20 ml of Acetone) with constant shaking (using Magnetic steerer) at zero temperature also add complete and Dissolved color light Brown ran high Cases, abiding shaking hidden color of Dissolved at half hour (the all reaction under Hood) Cede of Dissolved at room temperature and Cede of Dissolved and Cooling it at zero temperature tem (12 hours) , precipitated {1-{2-[4-(3,4-Dimethoxy-phenyl)-2,6-diphenyl-1λ4-thiopyran-1-yl]-ethyl}-2,4,6-triphenyl-pyridinium;

perchlorate (add Diethyiether to Dissolved and precipitated other them Compound) solid was filtered off and washed with (10 ml Ethanol 95%) and the crude products were got recrystallization by Acetic acid. The gross weight (2.2 g) per. (88%) with a melting point (266-267C0). Was diagnosing them Spectrally (FTI.R., 1HNMR.) (Table (6),(7)) in addition to the accurate quantitative elemental analysis. (See Table(2)),

In the same way been preparing Thirty two of compounds . (See. Table (2)(9)).

Should Molecular Weight for Synthesis compounds By using down Freeze Degree

A weighted (10 ml) from solvent Nitrobenzene in tube to supply with thermometer extent degree (-5) to put the tube and annexes in ice bath, register time and heat also stop temperature, to take out the tube and annexes at room temperature also coming back to liquid, add (0.05 g) from the synthesis compounds with constant shaking also Dissolved it, and to put the tube and annexes in ice bath, register time and heat also stop temperature. A register (Tf) from equation flowing and yield Molecular Weight from them. (See Table(3)),

$$T_f = \frac{KF \cdot \frac{Wt.solu.}{M.Wt.solu.} \times \frac{1000}{Wt.solvent}}$$

$$\Delta T_f = T_2 - T_1$$

Results and Discussion

A Synthesis it used two steps , as follows:

preparing Pyridinium Compound:

Got reaction one mol of Pyrylium prechlorate with one mol of the Compounds content primary Amine and Sulfide, to give a Pyridinium prechlorate interview and yield very good the appearance of (N=C) absorption band at (1629- 1683) cm⁻¹ , the appearance of (C-N) absorption band at (1305-1379) cm⁻¹ , the disappearance of both (NH₂) absorption band at (3400,3200) cm⁻¹ and (-S=C) absorption band at (1523-1580) cm⁻¹ in their FTI.R. spectra, the appearance of (S-H) absorption band at (7.33-7.30) S in their 1H.N.M.R. spectra .(see tables (4)(5) and Fig.(1),(2),(7),(8)), also explained mechanism and formula the following (Scheme (1)).

Preparation of Thiopyran Pyridinium compound:

Got reaction one mol of Pyrylium prechlorate with one mol of the Pyridinium prechlorate, to give a Thiopyran Pyridinium silt. interview and yield very good , the appearance of (N=C) absorption band at (1673, 1524) cm⁻¹ , the appearance of (C-N) absorption band at (1393-1345) cm⁻¹ , the appearance of (S=C) absorption band at (1522-1588) cm⁻¹ the disappearance of (S-C) absorption band at (1245-1295) cm⁻¹ in their FTI.R. spectra, the disappearance of (S-H) absorption band at (7.33-7.30) S in their 1HNMR. spectra (see table (6)(7)(9)) and Fig. (3-6),(9-14)), also explained mechanism and formula the following (Scheme (2)).

Antibacterial and antifungal activity

All the compounds (1-16) from the series were screened for their antibacterial ctivity against B. subtilis, S. aureus, P. aeruginosa and E. coli. The standard drug used was Furacin and DMF was kept as solvent control. Similarly the antifungal studies ere carried out against fungus C. albicans and C. krusei, using Flucanzol as standard. Compounds 2,3,4,5,11,13,15, and 16 showed significant antibacterial activity. Compound 1,6,9,10,12, and 14 showed significant antifungal activity. Activities of compounds (1-16) are given in (see table(8))

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Table (1) Characterization data for the synthesized of Pyridinium compounds

No.	Formula (M.Wt)	M.P. C°	Yield %	Analysis Clcd (found)					
				C%	H%	N%	S%	Cl%	Br%
A	C ₂₅ H ₂₆ O ₆ NSCl (527.79)	251-252	80.6	61.44	4.93	2.65	6.07	6.72	-----
				61.28	4.77	2.49	5.83	6.33	
B	C ₂₅ H ₂₀ O ₄ NSCl ₂ Br (580.83)	233-234	80.6	51.65	3.44	2.41	5.52	12.20	13.76
				51.24	3.35	2.33	5.37	11.95	13.55
C	C ₂₅ H ₂₂ O ₄ NSCl (467.52)	260-261	86	64.17	4.71	3.00	6.86	7.58	-----
				64.10	4.53	2.86	6.76	7.41	
D	C ₂₅ H ₂₁ O ₆ N ₂ NSCl (512.53)	236-237	87	58.53	4.10	5.47	6.26	6.92	-----
				58.37	3.93	5.32	5.97	6.73	

Table (2) Characterization data for the synthesized of Thiopyran Pyridinium compounds

No.	Pyridinium No.	Formula (M.Wt)	M.P. C°	Yield %	Analysis Clcd /found					
					C%	H%	N%	S%	Cl%	Br%
1	A	C ₅₀ H ₄₂ O ₆ NSCl (820.02)	266-267	88	73.23	5.12	1.71	3.91	4.32	----
					73.15	4.97	1.58	3.88	4.21	
2	A	C ₄₈ H ₃₆ O ₄ NSCl ₂ Br (873.35)	275-276	78.6	66.01	4.12	1.60	3.67	8.12	9.15
					65.98	4.05	1.52	3.57	8.05	9.07
3	A	C ₄₈ H ₃₈ O ₄ NSCl (760.00)	251-252	92	75.85	5.00	1.84	4.22	4.66	----
					75.78	4.85	1.74	4.08	4.54	
4	A	C ₄₈ H ₃₇ O ₆ N ₂ NSCl (805.01)	238-239	87.3	71.61	4.60	3.48	3.98	4.40	----
					71.58	4.57	3.39	3.86	4.34	
5	B	C ₄₈ H ₃₄ O ₄ NSCl ₃ Br ₂ (986.70)	240-241	80.7	58.43	3.45	1.42	3.25	10.78	16.20
					58.35	3.37	1.32	3.12	10.61	15.98
6	B	C ₅₀ H ₄₀ O ₆ NSCl ₂ Br (933.37)	272-273	77.9	64.34	4.29	1.50	3.43	7.60	8.56
					64.28	4.11	1.46	3.38	7.52	8.47
7	B	C ₄₈ H ₃₅ O ₆ N ₂ S ₂ Cl ₂ Br (918.36)	258-259	81	62.776	3.81	3.05	3.49	7.72	8.70
					2.65	3.75	2.96	3.41	7.64	8.64
8	B	C ₄₈ H ₃₇ O ₄ NSCl ₂ Br (874.35)	230-231	89	65.93	4.23	1.60	3.67	8.11	9.14
					65.87	4.14	1.54	3.59	8.01	8.99
9	C	C ₄₈ H ₄₃ O ₆ NSCl (797.00)	281-282	82.1	72.33	5.40	1.76	4.02	4.45	----
					72.30	5.34	1.69	3.94	4.37	
10	C	C ₄₈ H ₄₁ O ₆ NSCl ₂ Br (910.35)	295-296	85.4	63.33	4.50	1.54	3.52	7.79	8.78
					63.28	4.43	1.48	3.44	7.72	8.73
11	C	C ₅₀ H ₄₇ O ₈ NSCl (857.02)	247-248	80	70.07	5.48	1.63	3.74	4.14	----
					69.99	5.42	1.57	3.67	4.09	
12	C	C ₄₈ H ₄₂ O ₈ N ₂ NSCl (842.01)	297-298	84	68.46	4.99	3.33	3.81	4.21	----
					68.35	4.76	3.24	3.75	4.12	
13	D	C ₄₈ H ₃₆ O ₈ N ₃ NSCl (850.02)	278-279	81.7	67.82	4.24	4.94	3.77	4.17	----
					67.74	4.13	4.82	3.68	4.07	
14	D	C ₄₈ H ₃₈ O ₆ N ₂ NSCl (806.01)	253-254	80	71.52	4.71	3.48	3.98	4.40	----
					71.46	4.67	3.31	3.82	4.38	
15	D	C ₅₀ H ₄₂ O ₈ N ₂ NSCl (866.03)	267-268	86.4	69.34	4.85	3.24	3.70	4.09	----
					69.28	4.80	3.15	3.66	3.96	
16	D	C ₄₈ H ₃₅ O ₆ N ₂ S ₂ Cl ₂ Br (918.36)	244-245	88.5	62.776	3.81	3.05	3.49	7.72	8.70
					2.71	3.69	2.91	3.37	7.67	8.68

Table (3) M.Wt. the found and calculated for al Synthesis Thiopyran Pyridinium compounds

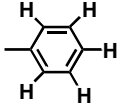
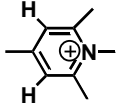
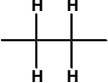
No.	M.Wt Clcd.	M.Wt found	No.	M.Wt Clcd	M.Wt found
1	(820.02)	798	9	(797.00)	754.54
2	(873.35)	810	10	(910.35)	894.50
3	(760.00)	756.77	11	(857.02)	838.64
4	(805.01)	742.14	12	(842.01)	831.71
5	(986.70)	977.52	13	(850.02)	811
6	(933.37)	910	14	(806.01)	811
7	(918.36)	867.05	15	(866.03)	828
8	(874.35)	850	16	(918.36)	88.6

Table (4) FTIR. Spectra of Pyridinium compounds

No.	C-N	C=N	C-H phenyl	ClO ₄ ⁻	C=C	C-H pyridiniu m	S-C	Other	
								group	cm ⁻¹

A	1305.7	1629.7	648, 617.2	1022.2	1404.1, 1448.4	875.6	1240.1	OCH ₃	1274.9
B	1372	1676.5	690, 688	1082	1476.1, 1406	859.9	1277.1	Cl, Br	785.1 588
C	1356.1	1683.1	659.1, 608	1086.1	1462.1, 1405	896.1	1263	-----	-----
D	1379.1	1677.3	639, 622	1086	1486.9, 1419	886.1	1295.5	NO ₂	1368

Table (5) ¹H.N.M.R. Spectra of Pyridinium compounds

No Comp.			—SH		Other
A	(8.34),(7.71)M (7.74) M		(7.30) S	(1.62) S	OCH ₃ (3.89),(4.16)
B	(7.74),(7.66)M (7.49).(7.11)M		(6.99) S	(1.59) S	-----

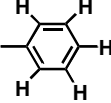
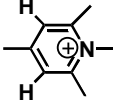
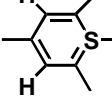
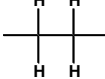
** By using DMSO-d₆ solvent

Table (6) FTIR. Spectra of Thiopyran Pyridinium compounds

No.	C-N	C=N	C=S	C-H Pyridiniu m	C-H Thiopyrin ium	C-H Phenyl	ClO ₄ ⁻	C=C	Other	
									group	cm ⁻¹
1	13500	1561.2 1627.8	1523.7	881.4	894.9	623 682 711	1085.6	1404 1496.9	OCH ₃	1257.5
2	1386	1645 1578.1	1546.9	873	888.1	642 686.1 780.3	1083.1	1417 1493	Cl Br	798.3 598
3	1392.3	1583.2 1640	1542.1	885.1	897	617 645 710	1085.8	1442 1488.3	-----	-----
4	1356.1	1637.1 1569	1522.1	882.3	889.1	654 672 711.9	1089	1408.9 1477.6	NO ₂	1369.1
5	1354	1524.3 1632	1526.9	889	897.2	663.1 677 690.8	1092.3	1434 1486.1	Cl Br	786 586.4
6	1393.6	1521 1612.9	1521.7	891.1	941.2	621 705.9 839	1095.5	1407 1461 1494	OCH ₃ Cl Br	1263.3 767.6 586
7	1358	1543.1 1609.3	1527.1	898.2	899.7	634 687.2 695.3	1084.1	1467.6 1488	NO ₂ Cl Br	1382 799.1 587.6
8	1383.2	1501.6 1646.9	1522.9	877.9	891	642.2 663 742	1097.5	1437 1492.1	Cl Br	786.6 593.1
9	1373.1	1639.1 1567	1588.1	882.9	984.1	627 677 689	1091.6	1423 1481	OCH ₃	1275.4
10	1345.4	1627 1577.2	1591.2	881.4	950.8	624 684 711	1083.6	1406 1496 1591	OCH ₃ Cl Br	1242.1 769.5 580.5
11	1349.9	1647.7 1562.6	1597	881.7	906.7	609 634 701.9	1085.3	1446 1489	OCH ₃ Cl Br	1289.4 796.3 589
12	1381.1	1640.9 1567	1579.9	890.3	897.6	634 667 724	1089.1	1486 1573.1	OCH ₃ Cl Br	1257 787.6 591.1
13	1386	1673.1 1506.1	1583.1	896.1	910	646.1 655 732	1087	1464.1 1489.6	NO ₂	1384.3
14	1359	1609.8 1554.1	1584.1	889	899.7	640 672 693.9	1096.1	1433 1497	NO ₂	1379.7
15	1367.4	1629.6 1573	1580.1	847.6	892.3	622 689 723	1088.6	1422 1465.8	OCH ₃ NO ₂	1237 1382.1
16	1352	1624 1568	1575.7	837	885.3	682.9 624.9	1085	1434.9 1475.4	Cl Br NO ₂	771.5 570.9 1245.9

* using KBr disk

Table (7) ¹H.N.M.R. Spectra of Thiopyran Pyridinium compounds

No. Comp.						Other
1	(7.90),(7.77)M (757)M	(8.06) S	(6.93) S	(1.63) S	OCH ₃ (3.91),(3.66)	
2	(8.08),(8.07)M (7.94),(7.81)M	(8.79) S	(7.28) S	(2.19) S	-----	
4	(8.37),(7.77)M (7.75)M	(8.95) S	(7.28) S	(1.99) S	-----	
6	(7.95),(7.48)M (7.46) M	(7.94) S	(7.06) S	(1.69) S	OCH ₃ (2.29),(2.64)	
7	(7.77),(7.37)M (7.45),(7.28)M	(7.19) S	(7.05) S	(2.32) S	-----	
9	(7.74),(7.73)M (7.72)M	(8.04) S	(7.23) S	(1.90) S	OCH ₃ (9.97),(3.72)	

** By using DMSO-d₆ solvent

Table(8) In vitro Antibacterial and Antifungal Activity of compounds(1-16)

Com poun ds	Antibacterial in (µg/ml)				Antifungal in (µg/ml)	
	Gram Positive		Gram Negative		C.albicans	C.krusei
	S.a	B.s	E.c	P.a	ATCC10231	G03
1	15	25	0.4	10	10	26
2	02	---	32	10	---	15
3	02	16	30	12	---	15
4	30	28	09	---	05	0.8
5	18	34	33	26	12	04
6	07	18	22	---	---	21
7	10	18	---	---	10	06
8	10	---	0.8	---	25	---
9	---	08	11	19	23	10
10	---	12	04	11	23	15
11	13	30	26	0.9	05	0.9
12	17	19	11	18	30	---
13	0.5	22	31	18	04	16
14	---	14	04	---	---	22
15	22	16	15	20	11	12
16	16	---	12	30	10	10
Zone of inhibition of standard drugs (µg/ml)						
Furacin	40	45	40	50	-----	
Flucanzol	-----				40	35

S.a - S. aureus B.s - B.subtilis E.c - E.coli P.a - P.aeruginosa

Table(9) Name and Structure of compounds(1-16)

1	1-{2-[4-(3,4-Dimethoxy-phenyl)-2,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2,4,6-triphenyl-pyridinium; perchlorate	
2	1-{2-[4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-6-phenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2,4,6-triphenyl-pyridinium; perchlorate	
3	2,4,6-Triphenyl-1-[2-(2,4,6-triphenyl-1λ ⁴ -thiopyran-1-yl)-ethyl]-pyridinium; perchlorate	
4	1-{2-[2-(4-Nitro-phenyl)-4,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2,4,6-triphenyl-pyridinium; perchlorate	
5	4-(4-Bromo-phenyl)-1-{2-[4-(4-bromo-phenyl)-2-(4-chloro-phenyl)-6-phenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2-(4-chloro-phenyl)-6-phenyl-pyridinium; perchlorate	
6	4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-1-{2-[4-(3,4-dimethoxy-phenyl)-2,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-6-phenyl-pyridinium; perchlorate	
7	4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-1-{2-[2-(4-nitro-phenyl)-4,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-6-phenyl-pyridinium; perchlorate	
8	4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-6-phenyl-1-[2-(2,4,6-triphenyl-1λ ⁴ -thiopyran-1-yl)-ethyl]-pyridinium; perchlorate	
9	4-(3,4-Dimethoxy-phenyl)-2,6-diphenyl-1-[2-(2,4,6-triphenyl-1λ ⁴ -thiopyran-1-yl)-ethyl]-pyridinium; perchlorate	
10	1-{2-[4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-6-phenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-4-(3,4-dimethoxy-phenyl)-2,6-diphenyl-pyridinium; perchlorate	
11	4-(3,4-Dimethoxy-phenyl)-1-{2-[4-(3,4-dimethoxy-phenyl)-2,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2,6-diphenyl-pyridinium; perchlorate	
12	4-(3,4-Dimethoxy-phenyl)-1-{2-[2-(4-nitro-phenyl)-4,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2,6-diphenyl-pyridinium; perchlorate	
13	2-(4-Nitro-phenyl)-1-{2-[2-(4-nitro-phenyl)-4,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-4,6-diphenyl-pyridinium; perchlorate	
14	2-(4-Nitro-phenyl)-4,6-diphenyl-1-[2-(2,4,6-triphenyl-1λ ⁴ -thiopyran-1-yl)-ethyl]-pyridinium; perchlorate	
15	1-{2-[4-(3,4-Dimethoxy-phenyl)-2,6-diphenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2-(4-nitro-phenyl)-4,6-diphenyl-pyridinium; perchlorate	
16	1-{2-[4-(4-Bromo-phenyl)-2-(4-chloro-phenyl)-6-phenyl-1λ ⁴ -thiopyran-1-yl]-ethyl}-2-(4-nitro-phenyl)-4,6-diphenyl-pyridinium; perchlorate	

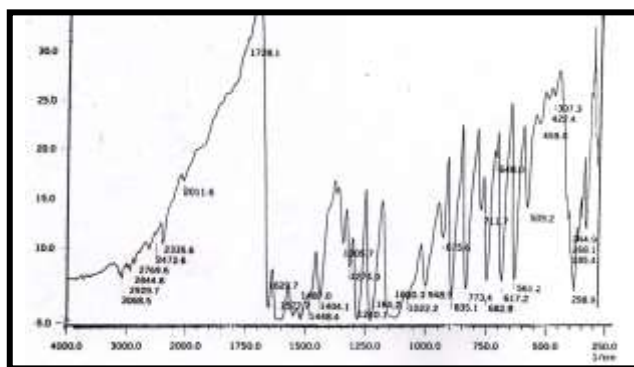
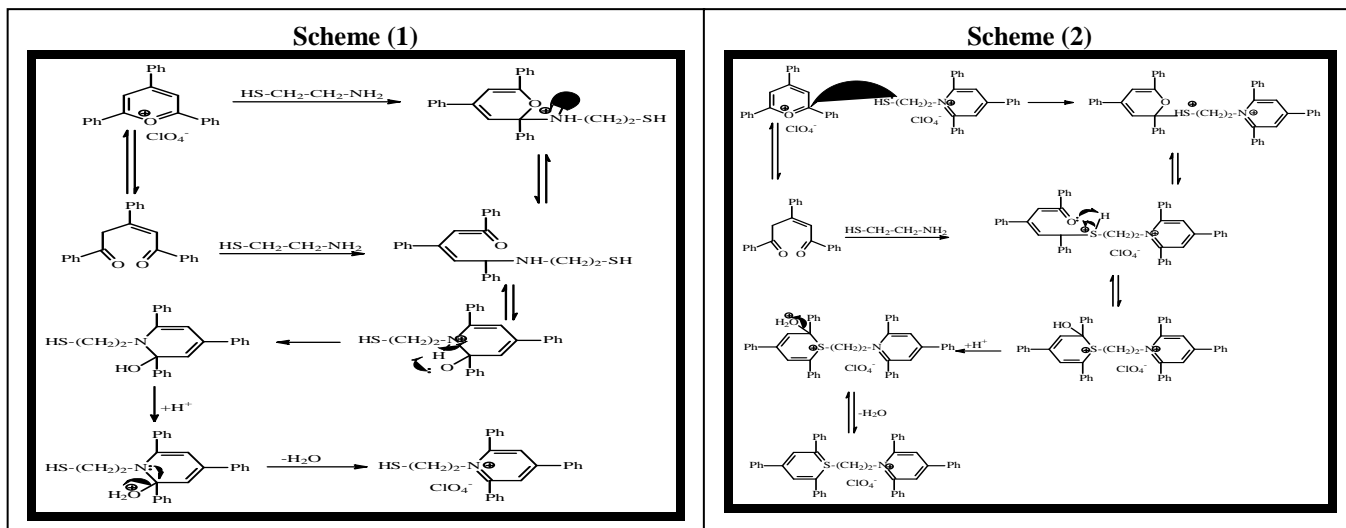


Fig. (1) Spectra. FTIR for Comp. (A)

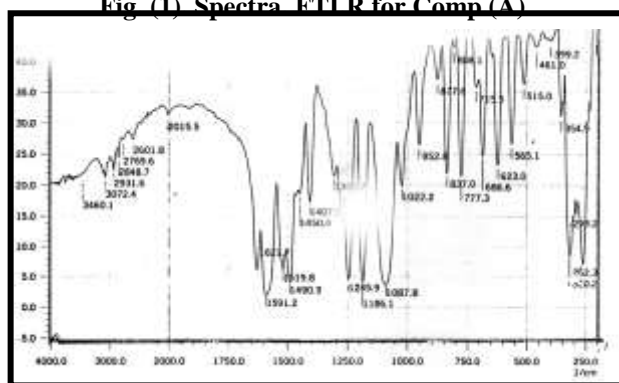


Fig. (2). Spectra. FTIR for Comp.(B)

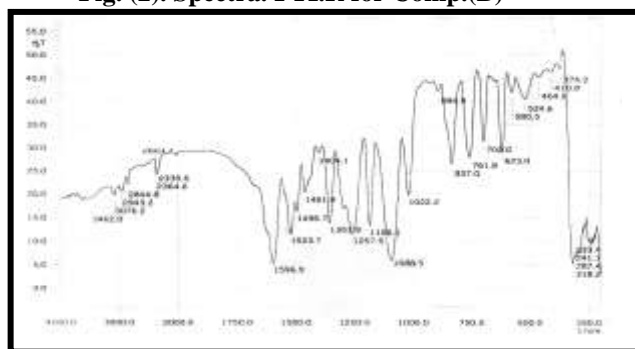


Fig. (3). Spectra. FTIR for Comp.(3)

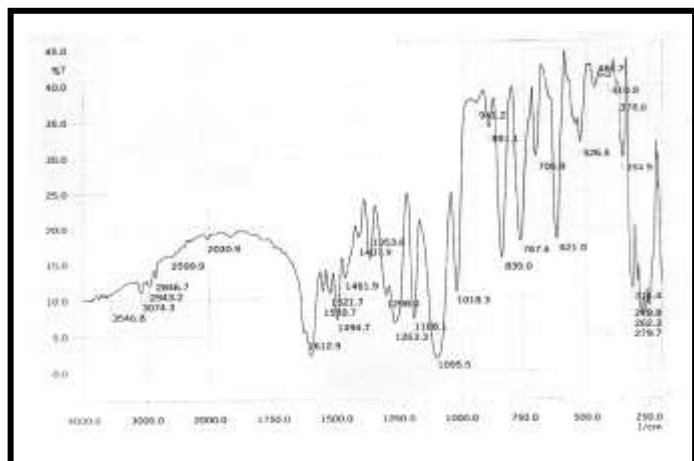


Fig. (4). Spectra. FTIR for Comp.(6)

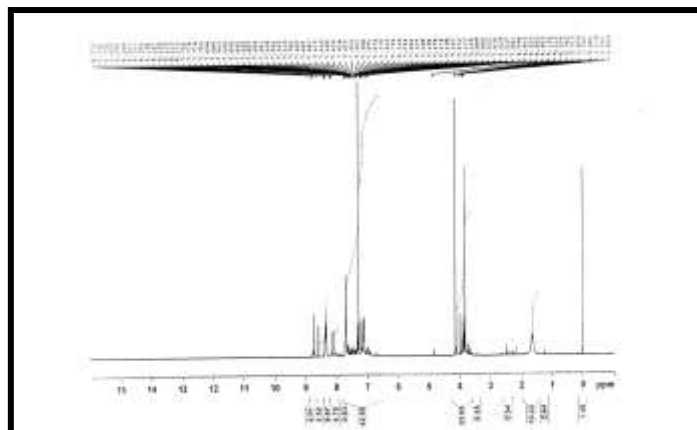


Fig. (7). Spectra. 1H.N.M.R for Comp.(A)

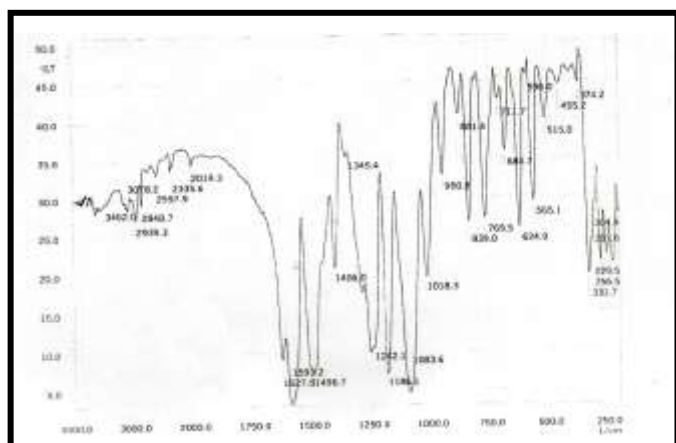


Fig. (5). Spectra. FTIR for Comp.(10)

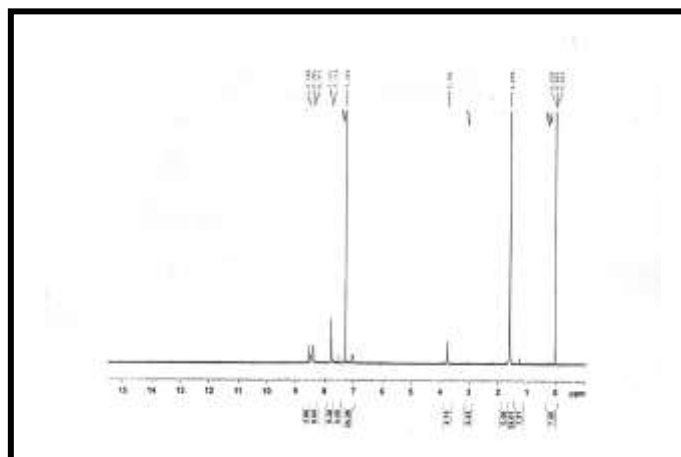


Fig. (8). Spectra.1H.N.M.R for Comp.(B)

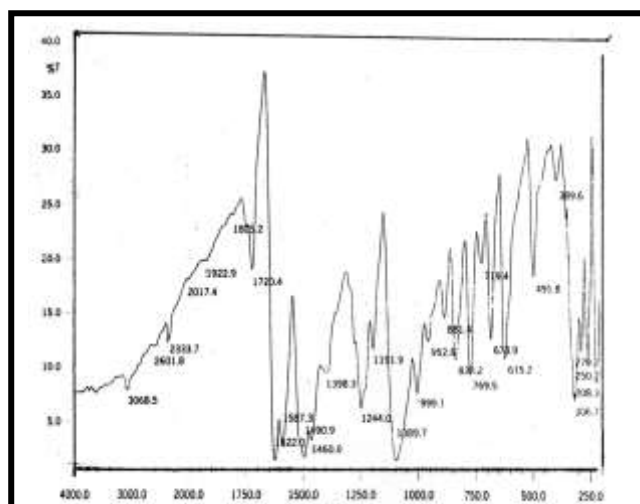


Fig. (6). Spectra. FTIR for Comp.(16)

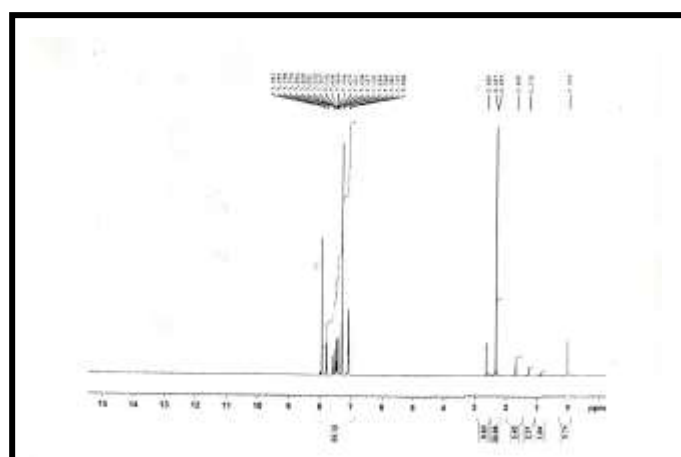


Fig. (9). Spectra. 1H.N.M.R for Comp.(1)

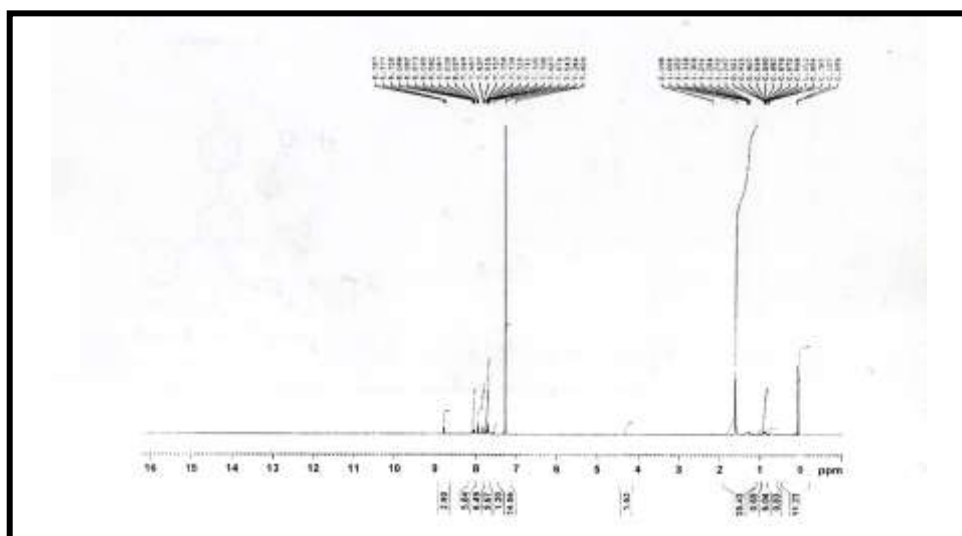


Fig. (10). Spectra. 1H.N.M.R for Comp.(2)

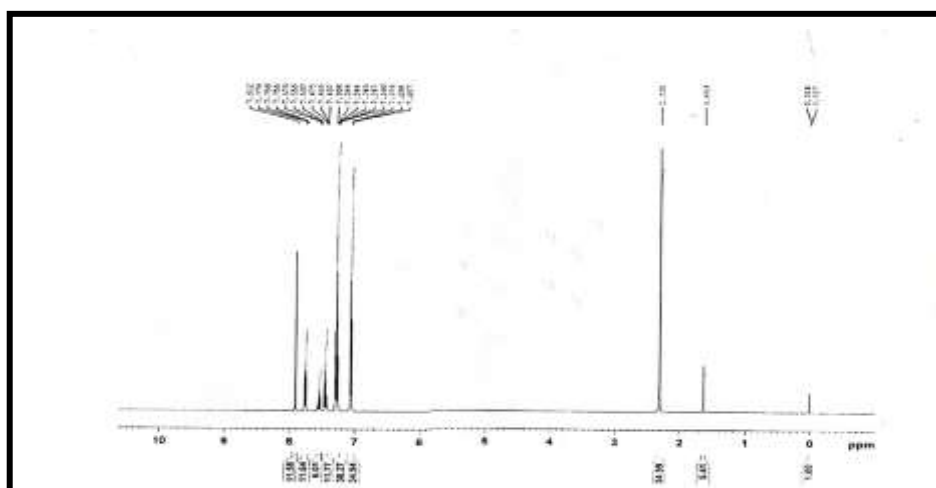


Fig. (11). Spectra. 1H.N.M.R for Comp.(4)

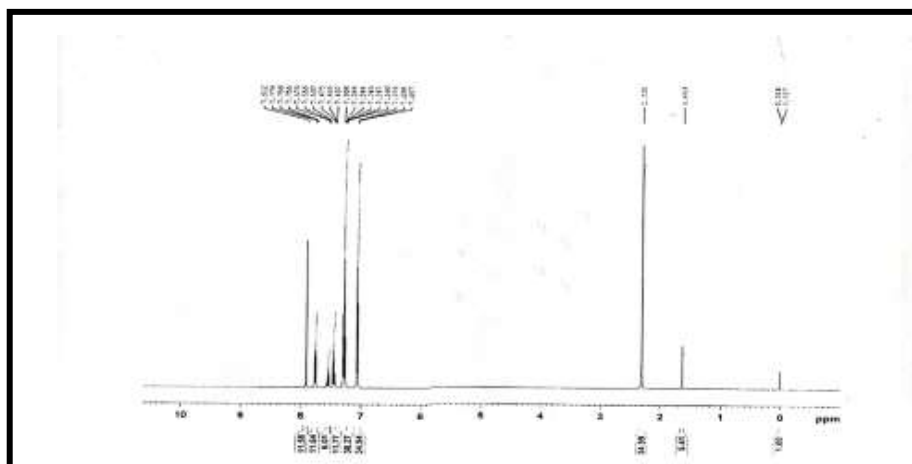


Fig. (12). Spectra. 1H.N.M.R for Comp.(6)

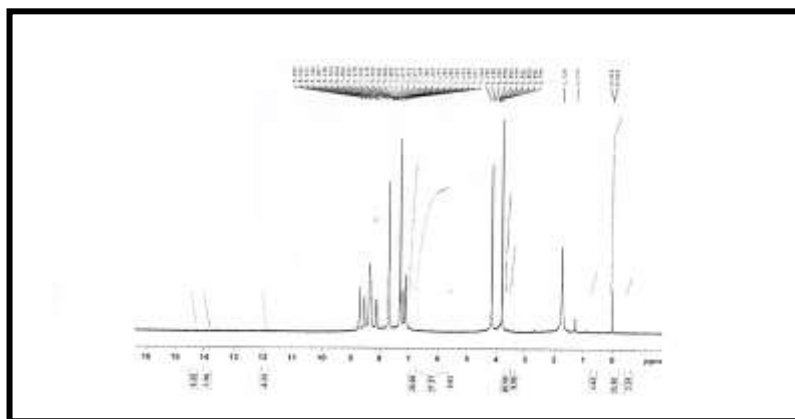


Fig. (13). Spectra. 1H.N.M.R for Comp.(7)

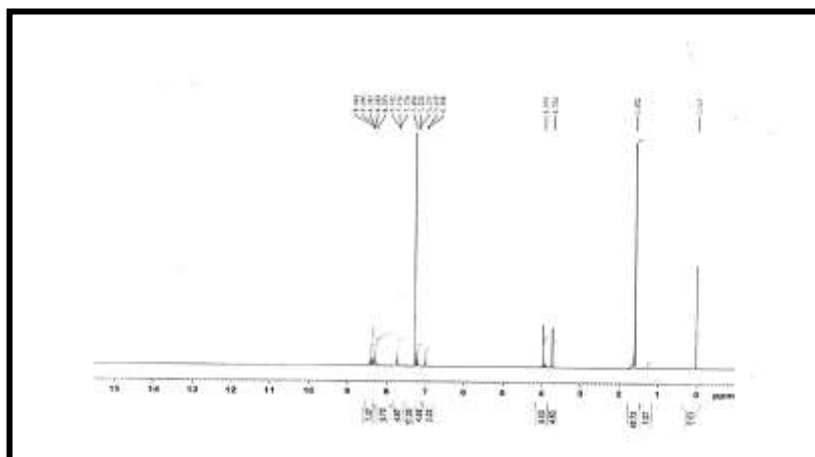


Fig. (14). Spectra. 1H.N.M.R for Comp.(9)

تحضير مركبات الثايوبارين بايريدينيوم بركلورات ودراسة فعاليتها الحيوية: الجزء الاول

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الخلاصة

تم تحضير اربع مركبات من مركبات البيريدينيوم وذلك من خلال مفاعلة واحد مول من املاح الباييريدييوم (المحضرة مسبقا) مع مول واحد من الـ 2-امينواتلين ثايول) في درجة حرارة الغرفة وتم تشخيصها طيفيا بوساطة طيف الـ(الاشعة تحت الحمراء وطيف الرنين النووي المغناطيسي والتحليل الكمي للعناصر). ومن خلال مركبات البيريدينيوم المحضرة تم مفاعلة واحد مول من مركبات البيريدينيوم مع واحد مول من املاح الباييريدييوم (المحضرة مسبقا) في درجة حرارة اقل من (الصفير المئوي) ومن خلال هذه العملية تم الحصول على ستة عشر مركبا من مركبات الثايوبارين بايريدينيوم بركلورات بمنتوج جيد جدا وتم تشخيصها طيفيا بوساطة طيف (الاشعة تحت الحمراء وطيف الرنين النووي المغناطيسي والتحليل الكمي للعناصر) . وتم تعين الوزن الجزيئي بطريقة الانخفاض بدرجة الانجماد واطهرت النتائج انها مقاربة الى وزنها الجزيئي وكذلك تمت دراسة التأثير البايولوجي للمركبات المحضرة تجاه بعض البكتريا موجبة لصبغة كرام وسالبة لصبغة كرام وكذلك تجاه بعض الفطريات وكانت النتيجة هنالك قيم للفعالية عالية للمركبات الناتجة. وبذلك تكون لهذه الطريقة طريقة عمل بسيطة وبظروف مناسبة ومنتوج جيد جدا وبذلك تكون لهذه المركبات اهمية كبيرة في حقل الكيمياء الطبية فضلا عن تحضيرها.