

**SINDH PUBLIC PROCUREMENT REGULATORY AUTHORITY**

**CONTRACT EVALUATION FORM**

**TO BE FILLED IN BY ALL PROCURING AGENCIES FOR PUBLIC CONTRACTS OF WORKS, SERVICES & GOODS**

- 1) NAME OF THE ORGANIZATION / DEPTT. Third World Center for Chemical Sciences, International Center for Chemical and Biological Sciences, University of Karachi.
- 2) PROVINCIAL / LOCAL GOVT/ OTHER Semi-government; autonomous body
- 3) TITLE OF CONTRACT Purchase/import of chemicals and enzymes
- 4) TENDER NUMBER TWC-BIOASSAY-010414
- 5) BRIEF DESCRIPTION OF CONTRACT Purchase/import of chemicals and enzymes for research work
- 6) FORUM THAT APPROVED THE SCHEME Director, I.C.C.B.S.
- 7) TENDER ESTIMATED VALUE Below Rs. 1.0 million
- 8) ENGINEER'S ESTIMATE (For civil works only) N.A.
- 9) ESTIMATED COMPLETION PERIOD (AS PER CONTRACT) N.A.
- 10) TENDER OPENED ON (DATE & TIME) 3.00 P.M. on 01-04-2014
- 11) NUMBER OF TENDER DOCUMENTS SOLD Five  
(Attach list of buyers)
- 12) NUMBER OF BIDS RECEIVED Five
- 13) NUMBER OF BIDDERS PRESENT AT THE TIME OF OPENING OF BIDS Three
- 14) BID EVALUATION REPORT (Enclose a copy) Published by you on 15-07-2014 at Sr. No. 4791 ID 1231/2014
- 15) NAME AND ADDRESS OF THE SUCCESSFUL BIDDER KHB (LHR) DJ Scientif, Diagnostic System (KHI)
- 16) CONTRACT AWARD PRICE Rs. 63,500/- 41,900/- and 4,400/-
- 17) RANKING OF SUCCESSFUL BIDDER IN EVALUATION REPORT (i.e. 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> EVALUATION BID). 1st evaluated lowest

18) METHOD OF PROCUREMENT USED : - (Tick one)

- a) SINGLE STAGE – ONE ENVELOPE PROCEDURE  Domestic/ Local
- b) SINGLE STAGE – TWO ENVELOPE PROCEDURE
- c) TWO STAGE BIDDING PROCEDURE
- d) TWO STAGE – TWO ENVELOPE BIDDING PROCEDURE

PLEASE SPECIFY IF ANY OTHER METHOD OF PROCUREMENT WAS ADOPTED i.e. EMERGENCY, DIRECT CONTRACTING ETC. WITH BRIEF REASONS:

765  
25-7-14  
MCA

19) APPROVING AUTHORITY FOR AWARD OF CONTRACT \_\_\_\_\_

20) WHETHER THE PROCUREMENT WAS INCLUDED IN ANNUAL PROCUREMENT PLAN?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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21) ADVERTISEMENT :

i) SPPRA Website  
(If yes, give date and SPPRA Identification No.)

Yes	Serial No. 19337
No	

ii) News Papers  
(If yes, give names of newspapers and dates)

Yes	
No	NO

22) NATURE OF CONTRACT

Domestic/ Local	<input checked="" type="checkbox"/>	Int.	<input type="checkbox"/>
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23) WHETHER QUALIFICATION CRITERIA WAS INCLUDED IN BIDDING / TENDER DOCUMENTS?  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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24) WHETHER BID EVALUATION CRITERIA WAS INCLUDED IN BIDDING / TENDER DOCUMENTS?  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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25) WHETHER APPROVAL OF COMPETENT AUTHORITY WAS OBTAINED FOR USING A METHOD OTHER THAN OPEN COMPETITIVE BIDDING?

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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26) WAS BID SECURITY OBTAINED FROM ALL THE BIDDERS?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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27) WHETHER THE SUCCESSFUL BID WAS LOWEST EVALUATED BID / BEST EVALUATED BID (in case of Consultancies)

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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28) WHETHER THE SUCCESSFUL BIDDER WAS TECHNICALLY COMPLIANT?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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29) WHETHER NAMES OF THE BIDDERS AND THEIR QUOTED PRICES WERE READ OUT AT THE TIME OF OPENING OF BIDS?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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30) WHETHER EVALUATION REPORT GIVEN TO BIDDERS BEFORE THE AWARD OF CONTRACT?

(Attach copy of the bid evaluation report)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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31) ANY COMPLAINTS RECEIVED  
(If yes, result thereof)

Yes	
No	NO

32) ANY DEVIATION FROM SPECIFICATIONS GIVEN IN THE TENDER NOTICE / DOCUMENTS  
(If yes, give details)

Yes	
No	NO

33) WAS THE EXTENSION MADE IN RESPONSE TIME?  
(If yes, give reasons)

Yes	
No	NO

34) DEVIATION FROM QUALIFICATION CRITERIA  
(If yes, give detailed reasons.)

Yes	
No	NO

35) WAS IT ASSURED BY THE PROCURING AGENCY THAT THE SELECTED FIRM IS NOT  
BLACK LISTED?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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36) WAS A VISIT MADE BY ANY OFFICER/OFFICIAL OF THE PROCURING AGENCY TO THE  
SUPPLIER'S PREMISES IN CONNECTION WITH THE PROCUREMENT? IF SO, DETAILS TO  
BE ASCERTAINED REGARDING FINANCING OF VISIT, IF ABROAD:  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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37) WERE PROPER SAFEGUARDS PROVIDED ON MOBILIZATION ADVANCE PAYMENT IN  
THE CONTRACT (BANK GUARANTEE ETC.)?

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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38) SPECIAL CONDITIONS, IF ANY  
(If yes, give Brief Description)

Yes	
No	NO

Signature & Official Stamp of  
Authorized Officer

  
**Sr. Professor**

**ICCBS**  
H. E. J. Research Institute  
of Chemistry  
University of Karachi

**FOR OFFICE USE ONLY**

***SPPRA, Block. No.8, Sindh Secretariat No.4-A, Court Road, Karachi***  
***Tele: 021-9205356; 021-9205369 & Fax: 021-9206291***

Phone (Purchase & Store): (92) 021-34819011  
 Fax (Purchase & Store) : (92) 021-99261789  
 Fax (Main Office) : (92) 021-34819018, 34819019

E-mail: store@iccs.edu  
 : store.iccs@hotmail.com

### THIRD WORLD CENTER FOR CHEMICAL SCIENCES

INTERNATIONAL CENTER FOR CHEMICAL AND BIOLOGICAL SCIENCES

UNIVERSITY OF KARACHI, KARACHI-75270, PAKISTAN.

Tel UAN: 111-222-292, (92-21-34824901, 34824902, 34824930, 34824934, 34824936) Ext. 108, 109 154, 159

P.O. No. 1332 PURCHASE ORDER / WORK ORDER Date: 23/7/2014

Messrs: Diagnostic Systems. Fax No. 34972349

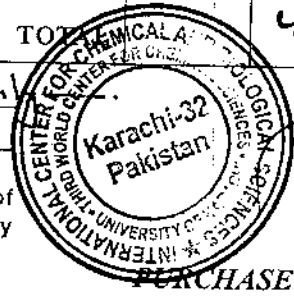
Ref: Your quotation No. D/S/TWCCS/001/04/2014 TWC-Bioassay-010414 Dated: 1/4/2014

Subject: Supply of 8 Chemicals for Prof. M. Iqbal Choudhary

Please supply the following articles to the institute. & Dr. Atia-tul-wahab.

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT	
				Rs.	Ps.
01,	Sulphanite acid. GR for analysis ACS Reag. Cat No. 1.00686.0100.  Merck Germany.	100g	4,400/- (100g)	4,400/-	
E. & O. E.					
TOTAL				4,400/-	

(Rupees) Four thousand four hundred only



Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within.....days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.

Phone (Purchase & Store): (92) 021-34819011  
 Fax (Purchase & Store) : (92) 021-99261789  
 Fax (Main Office) : (92) 021-34819018, 34819019

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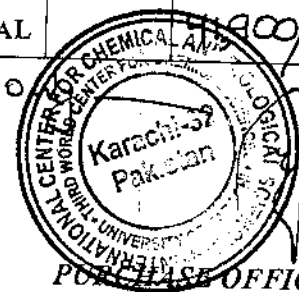
Tel UAN: 111-222-292, (92-21-34824901, 34824902, 34824930, 34824934, 34824936) Ext. 108, 109 154, 159

P.O. No. 1333 PURCHASE ORDER / WORK ORDER Date: 23/7/2014  
 Messrs: DJ Scientific Fax. # 34964742  
 Ref: Your quotation No. DJSCI/2013-14/TEN/071/Tuc Tuc Bioassay dated: 01/04/2014  
 Subject: Supply of Chemical for Prof. M. Iqbal Choudhary & Dr. Atia-eul-wahab  
 Please supply the following articles to the institute.

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT	
				Rs.	Ps.
01,	Naphthylethylenediamina dibydrochloride monomethanolate. cat no. N0577 TCI Japan.	25g	11,200/- (25g)	11,200/-	
02,	Phenol cat no. P1610 TCI Japan.	25g	4800/- (25g)	4,800/-	
03,	Acasbose Hydroate. cat no. A2485 TCI Japan.	01g	17,500/- (01g)	17,500/-	
04,	4-Nitrophenyl Acetate. cat no. A0040 TCI Japan.	25g	8,400/- (25g)	8,400/-	
E. & O. E.				TOTAL	
				11,800/-	

(Rupees) Forty One thousand nine hundred 0

Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within 5 days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.



PURCHASE OFFICER

Phone (Purchase & Store): (92) 021-34819011  
 Fax (Purchase & Store) : (92) 021-99261789  
 Fax (Main Office) : (92) 021-34819018, 34819019

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## THIRD WORLD CENTER FOR CHEMICAL SCIENCES

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UNIVERSITY OF KARACHI, KARACHI-75270, PAKISTAN.

Tel UAN: 111-222-292, (92-21-34824901, 34824902, 34824930, 34824934, 34824936) Ext. 108, 109 154, 159

P.O. No. 1334

### PURCHASE ORDER / WORK ORDER

Date: 23/7/2014

Messrs: KHB International Fax No. 92-42-37350965

Ref: Your quotation No. KHB-002-14 Ten Tuc Bioassay - 010414 Dated: 28/3/2014

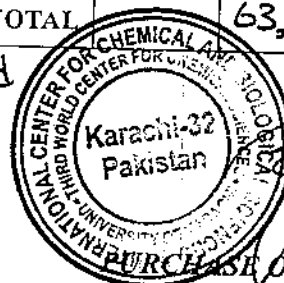
Subject: Supply of Chemicals for Prof. M. Iqbal Choudhary &

Please supply the following articles to the institute. Dr. Atia-tul-walab

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT	
				Rs.	Ps.
01,	Fenozine cat no. 00342 Chemipex OSA	5g	16,250/- (5g)	16,250/-	
02,	Disodium ethylenediamine tetraacetate acid (Na <sub>2</sub> EDTA) Product no. 40500012 Bio world USA	250g	2,850/- (250g)	2,850/-	
03,	Substrate Thymiclina cat no. 00306 Chem. Impex USA.	10g	11,500/- 10g	11,500/-	
04,	Intitator: T-Deazaxanthine Product no. FD11329 CMS Chemicals, UK.	1g	24,500/- (1g)	24,500/-	
05,	Standard: Gallic acid monohydrate cat no. 22939 Chemimpex USA.	100g	8,500/-	8,500/-	
E. & O. E.			TOTAL	63,600/-	

(Rupees) Sixty three thousand Six hundred

Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within.....days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.



23/7/14

INTERNATIONAL CENTER FOR CHEMICAL AND BIOLOGICAL SCIENCES (ICCBS)  
UNIVERSITY OF KARACHI



4/3/14

H.E.J.  TWC  PCMD  PROJECT

Document Title: Purchase Requisition Form

Doc. No.: ICCBS/04/08-01 Rev. No. 01 Issue No. 1

Sanction No. \_\_\_\_\_

P.O. No. \_\_\_\_\_

FEB/27/TWC/43/13-14

Serial No.: 0257

Date 27/2/14

**PURCHASE REQUISITION FORM**

Sci. Equipments  Chemicals  Glassware  Stationery  Computer & Accessories  General Items

PLEASE (✓) AT APPROPRIATE PLACE ON THE ABOVE DESCRIPTION

The prior approval is hereby requested for the purchase of the stated items, which are required for,

Prof./ Dr./ Mr./ Ms. Prof. Dr. M. Iqbal Choudhry Lab No. 2-131 Intercom No. 307

The amount required for the purchase of these items may deducted from the head of,

Research Grant or (Biossary Sweeney)

Sr. No.	Item(s)	Specification / Description	Quantity	Instructions
1	Enzymes and its	List attached		Tender
2	Chemicals			
3				
4				
5				
6				
7				
8				
9				

Requested By:

Name: Atia

Signature: [Signature]

Farizan  
Recommended by Finance Manager

[Signature]  
Signature of the Supervisor

Received in Store (Date & Sign.)

Submitted for approval for the purchase of the above items. The payment of the above items may be made from the Head of A/C.

[Signature]

[Signature]

## ENZYME INHIBITION CHEMICAL LIST

S. No.	Chemical Name	Company Name	Units/vial	Quantity
<b>1</b>	<b>XANTHINE OXIDASE INHIBITION ASSAY</b>			
	Enzyme : Xanthine Oxidase Bovine milk	Sigma Cat # X-4376	25 U	1 vial
	Substrate: Xanthine	Sigma Cat # X-0626	-	10 g (1 vial)
	Inhibitor: Allopurinol	Sigma Cat # A8003	-	5 g (1 vial)
<b>2</b>	<b>IRON CHELATING ASSAY</b>			
	Ferrous chloride (FeCl <sub>2</sub> · 4H <sub>2</sub> O)	Sigma Aldrich, USA Cat # 372870	-	25 g (1 vial)
	Ferrozine	Serva Electrophoresis GmbH, Germany Cat # 21326	-	5 g (1 vial)
	Disodium ethylenediamine tetraacetic acid (Na <sub>2</sub> EDTA)	Sigma Aldrich, USA Cat # ES134	-	50 g (1 vial)
<b>3</b>	<b>NITRIC OXIDE RADICAL SCAVENGING ASSAY</b>			
	Naphthylethylenediamine dihydrochloride	ICN Biomedicals, Germany Cat # 152549	-	25 g (1 vial)
	Sulfanilic acid	ICN Biomedicals, Germany Cat # 102990	-	100 g (1 vial)
	Sodium nitroprusside	Merck, Germany Cat # 2549480	-	50 g (1 vial)
<b>4</b>	<b>THYMIDINE PHOSPHORYLASE INHIBITION ASSAY</b>			
	Enzyme: Thymidine phosphorylase (from <i>E. coli</i> )	Sigma Aldrich, USA Cat # T6632	900 U/5mL	(1 vial)
	Substrate: thymidine	Sigma Aldrich, USA Cat # T-9250	-	10 g (1 vial)
	Inhibitor: 7-Deazaxanthine	Santa Cruze Biotechnology Inc USA Sc-220B00	-	500 mg (1 vial)
<b>5</b>	<b>UREASE INHIBITION ASSAY</b>			
	Enzyme: Urease <i>Canavalia ensiformis</i> (Jack bean)	Sigma Aldrich, USA Cat # U1500	100 KU	(1 vial)
	Substrate: Urea			
	Inhibitor: Thiourea			
	Sodium nitroprusside	Merck, Germany Cat # 2549480	-	50g (1 vial)
	Phenol	TCI Cat# P1610	-	25g (1 vial)



	Sodiumhypochlorite	Scharlau Cat # SO04361000	-	1litre
	Sodium hydroxide	Uni-chem Cat # S41298-4J	-	1kg
5	<b>β-GLUCURONIDASE INHIBITION ASSAY</b>			
	Enzyme : β-Glucuronidase, from <i>Escherichia coli</i>	Sigma Cat # G7396	25 KU	1 vial
	Substrate: 4-nitrophenyl-β-d- glucuronide	Sigma Cat # N1627	-	250 mg (1 vial)
	Inhibitor: D-saccharic acid 1,4-lactone	Sigma Cat # S-0375	-	1 g (1 vial)
6	<b>DPPH-RADICAL SCAVENGING ASSAY</b>			
	Standard: Gallic acid	Sigma cat#G-8647	-	100 g (1 vial)
	DPPH	Sigma Aldrich D9132-1G	-	1 g (1 vial)
7	<b>α-GLUCOSIDASE INHIBITION ASSAY</b>			
	Enzyme : α-glucosidase ( <i>Sacchomyces cerevisiae</i> )	Sigma Cat # G-0660	750 U l	1 vial
	Substrate: 4-NitroPhenyl α-D- glucopyranoside	Sigma Cat # GN1377	-	1 g (1 vial)
	Inhibitor: Acarbose	Sigma Cat # A8980	-	1 g (1 vial)
8	<b>PEP INHIBITION ASSAY</b>			
	Enzyme: Prolyl endopeptidase	Cat#E-1411, Flavobactrium SP.		1 vial
	Substrate: <i>N</i> -benzyloxy carbonyl-gly-pro-pNa	Sigma, Cat#96286		2 vials
	Inhibitor: Z-pro-prolinal	Sigma, Cat#SML0205		2 vials
9	<b>PHDSPHDDIESTEREASE INHIBIOTION ASSAY</b>			
	Enzyme: Phosphodiesterase1	Sigma , Cat# p-4631 Type-V, crude dried snake venom, broth atrox		4 vials
	Bis(p-nitrophenyl) Phosphate	Sigma, Cat#N-3002		2 g
10	<b>CARBONIC ANHYDRASE INHIBIOTION ASSAY</b>			
	Enzyme: Carbonic Anhydrase- II	Sigma , Cat# c-3934 Bovine erythrocyte		2 vials

4-Nitrophenyl acetate

MP-Bio, cat#160888

25 g

## Bid Evaluation Report

1. Name of Procuring Agency: Third World Center for Chemical Sciences, International Center for Chemical and Biological Sciences, University of Karachi, Karachi-75270.

2. Tender Reference No: TWC-BIOASSAY-010414

3. Tender Description/Name of work/item: Purchase/import of chemicals for research work

4. Method of Procurement: Single Stage – Single Envelope

5. Tender Published: SPPRA Serial No. 19337  
*Print & Electronic Media (SPPRA ID No. & News papers names with dates)*

6. Total Bid documents Sold; Five

7. Total Bids Received: Five

8. Technical Bid Opening date: (if applicable) N.A. *(Provide details in separate form)*

9. No. of Bid technically qualified (if applicable): N.A.

10. Bid(s) Rejected: Nil

11. Financial Bid Opening date: 01-04-2014



## 12. Bid Evaluation Report:

S No	Name of Firm or Bidder	Cost offered by the Bidder	Ranking in terms of cost	Comparison with Estimated cost	Reasons for acceptance/rejection	Remarks
0	1	2	3	4	5	6
1.	KHB International	Rs. 272,000/- (16 items)	Lowest in 5 items	N.A.	Lowest and according to specs	Recommended for placement of order
2.	DJ Scientific	Rs. 935,329/- (27 items)	Lowest in 4 items	N.A.	Lowest and according to specs	Recommended for placement of order
3.	Diagnostic Systems	Rs. 356,275 (18 items)	Lowest in 1 item	N.A.	Lowest and according to specs	Recommended for placement of order
4.	Sure Bio Diagnostic & Pharma	Rs. 185,850/- (9 items)	Not lowest in any item	N.A.	Not lowest	<b>Not</b> recommended
5.	Friends Scientific Corporation	Rs. 511,900/- (19 items)	Not lowest in any item	N.A.	Not lowest	<b>Not</b> recommended

### PURCHASE COMMITTEE, ICCBS INSTITUTIONS

1. PROF. DR. M. SHAIQ ALI  
Chairman (I.C.C.B.S)

2. Dr. M. Raza Shah  
Member (I.C.C.B.S)

3. Dr. Sonia Siddiqui  
Member (I.C.C.B.S)

Members from Institution

1. Syed Jahanzaib  
Member (I.B.A)

2. Dr. Shaista Perveen  
Member (NED University)

Members outside the Institution

Signatures of the Members of the Committee

**TECHNICAL COMMITTEE MINUTES OF TENDER NO TWC-BIOASSAY-010414 FOR  
PURCHASE OF CHEMICALS**

Technical committee meeting for Tender No: TWC-BIOASSAY-010414 1<sup>st</sup> time, was held on 11-04-2014. Following recommendations were made:

**1. XANTHINE OXIDASE INHIBITION ASSAY**

**a. Enzyme : Xanthine Oxidase Bovine milk**

5 Bids were received by M/S DIAGNOSTIC SYSTEMS, DJ SCIENTIFIC, FRIENDS SCIENTIFIC CORPORATION, S.B.D.P. and KHB INTERNATIONAL. Bids quoted by DIAGNOSTIC SYSTEMS, FRIENDS SCIENTIFIC CORPORATION and S.B.D.P., were rejected because they offered the enzyme by different source (with butter milk). Therefore, after careful evaluation the committee recommended to **Re-tender** this item.

**b. Substrate: Xanthine**

3 Bids were received. M/S DIAGNOSTIC SYSTEMS, DJ SCIENTIFIC and KHB INTERNATIONAL. Bids quoted by DIAGNOSTIC SYSTEMS and KHB INTERNATIONAL were rejected because they didn't quote item as per our specification. After careful evaluation the committee recommended to **Re-tender** this item.

**c. Inhibitor: Allopurinol**

2 Bids were received by M/S DJ SCIENTIFIC and KHB INTERNATIONAL. Therefore, the committee recommended to **Re-tender** this item.

**2. IRON CHELATING ASSAY**

**a. Ferrous chloride (FeCl<sub>2</sub>. 4H<sub>2</sub>O)**

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

**b. Ferrozine**

3 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S KHB INTERNATIONAL, Cat # 00342 ChemImpex, as they are the lowest among all bidders and as per our specification.

**c. Disodium ethylenediamine tetraacetic acid (Na<sub>2</sub>EDTA)**

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S KHB INTERNATIONAL Cat # 40500012 Bio World, as they are the lowest among all bidders.

**3. NITRIC OXIDE RADICAL SCAVENGING ASSAY**

**a. Naphthylethylenediamine dihydrochloride**

3 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S DJ SCIENTIFIC, Cat # N0577 TCI Japan, as they are the lowest among all bidders and as per our specification.

**b. Sulfanilic acid**

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S DIAGNOSTIC SYSTEMS, Cat #1.00686.0100 Merck, as they are the lowest among all bidders and as per our specification.

**c. Sodium nitroprusside**

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

#### 4. THYMIDINE PHOSPHORYLASE INHIBITION ASSAY

a. **Enzyme: Thymidine phosphorylase (from *E. coli*)**

Only one Bid was received by M/S DJ SCIENTIFIC. Therefore, the committee recommended to **Re-tender** this item.

b. **Substrate: thymidine**

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S KHB INTERNATIONAL, Cat # 00306, as they are the lowest among all bidders and as per our specification.

c. **Inhibitor: 7-Deazaxanthine**

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S KHB INTERNATIONAL, Cat # FD11329, CMS Chemicals, as they are the lowest among all bidders and as per our specification.

#### 5. UREASE INHIBITION ASSAY

a. **Enzyme: Urease *Canavalia ensiformis* (Jack bean)**

4 Bids were received by M/S DIAGNOSTIC SYSTEMS, DJ SCIENTIFIC, S.B.D.P. and KHB INTERNATIONAL. Bids quoted by DIAGNOSTIC SYSTEMS and S.B.D.P. were rejected because they didn't quote item as per our Specification. Therefore, after careful evaluation the committee recommended to **Re-tender** this item.

b. **Substrate: Urea**

4 Bids were received by M/S DIAGNOSTIC SYSTEMS, DJ SCIENTIFIC, FRIENDS SCIENTIFIC CORPORATION and S.B.D.P. were rejected because they didn't quote item as per our Specification. After careful evaluation the committee recommended to **Re-tender** this item.

**c. Inhibitor: Thiourea**

3 Bids were received by M/S DIAGNOSTIC SYSTEMS, DJ SCIENTIFIC and FRIENDS SCIENTIFIC CORPORATION were rejected because they didn't quoted item as per our Specification. After careful evaluation the committee recommended to **Re-tender** this item.

**d. Sodium nitroprusside**

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

**e. Phenol**

3 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S DJ SCIENTIFIC, Cat # P1610, TCI Japan, as they are the lowest among all bidders and as per our specification.

**f. Sodium hypochlorite**

Only one Bid was received by FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

**g. Sodium hydroxide**

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.



## 6. $\beta$ -GLUCURONIDASE INHIBITION ASSAY

### a. Enzyme : $\beta$ -Glucuronidase, from *Escherichia coli*

2 Bids were received by M/S DJ SCIENTIFIC and FRIENDS SCIENTIFIC CORPORATION. Bid quoted by FRIENDS SCIENTIFIC CORPORATION was rejected because they didn't quoted item as per our Specification. Therefore, the committee recommended to **Re-tender** this item.

### b. Substrate: 4-nitrophenyl- $\beta$ -d-glucuronide

3 Bids were received by M/S DJ SCIENTIFIC, S.B.D.P. and KHB INTERNATIONAL, all these were rejected because they didn't quoted item as per our Specification. DJ SCIENTIFIC quoted option 2 as per our specification, therefore, after careful evaluation the committee recommended to **Re-tender** this item.

### c. Inhibitor: D-saccharic acid 1,4-lactone

2 Bids were received by M/S DJ SCIENTIFIC and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

## 7. DPPH-RADICAL SCAVENGING ASSAY

### a. Standard: Gallic acid

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S KHB INTERNATIONAL, Cat # 22939, Chem Impex as they are the lowest among all bidders and as per our specification.

### b. DPPH

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and DJ SCIENTIFIC. Therefore, the committee recommended to **Re-tender** this item

## 8. $\alpha$ -GLUCOSIDASE INHIBITION ASSAY

### a. Enzyme : $\alpha$ -glucosidase (*Sacchromyces cerevisiae*)

2 Bids were received by M/S DJ SCIENTIFIC and KHB INTERNATIONAL. Therefore, the committee recommended to **Re-tender** this item.

### b. Substrate: 4-NitroPhenyl $\alpha$ -D-glucopyranoside

2 Bids were received by M/S DJ SCIENTIFIC and KHB INTERNATIONAL, both bids were rejected because they didn't quoted item as per our Specification. Therefore, the committee recommended to **Re-tender** this item.

### c. Inhibitor: Acarbose

3 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S DJ SCIENTIFIC, Cat # A2485, TCI Japan, as they are the lowest among all bidders and as per our specification.

## 9. PEP INHIBITION ASSAY

### a. Enzyme: Prolyl endopeptidase

2 Bids were received by M/S DIAGNOSTIC SYSTEMS and DJ SCIENTIFIC. Bid quoted by DIAGNOSTIC SYSTEMS was rejected because they didn't quoted item as per our Specification. Therefore, the committee recommended to **Re-tender** this item.

### b. Substrate: *N*-benzyloxy carbonyl-gly-pro-pNa

Only one Bid was received by M/S DJ SCIENTIFIC. Therefore, the committee recommended to **Re-tender** this item.

### c. Inhibitor: *Z*-pro-prolinal

Only one Bid was received by M/S DJ SCIENTIFIC. Therefore, the committee recommended to **Re-tender** this item.

## **10. PHOSPHODIESTERASE INHIBITION ASSAY**

### **a. Enzyme: Phosphodiesterase I**

No Bids were received. Therefore, the committee recommended to **Re-tender** this item.

### **b. Bis(p-nitrophenyl) Phosphate**

2 Bids were received by M/S DJ SCIENTIFIC and FRIENDS SCIENTIFIC CORPORATION. Therefore, the committee recommended to **Re-tender** this item.

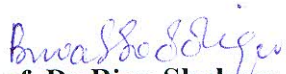
## **11. CARBONIC ANHYDRASE INHIBITION ASSAY**

### **a. Enzyme: Carbonic Anhydrase-II**

Only one Bid was received by M/S DJ SCIENTIFIC. Therefore, the committee recommended to **Re-tender** this item.

### **b. 4-Nitrophenyl acetate**

4 Bids were received. After careful evaluation, committee has recommended that the tender may be awarded to M/S DJ SCIENTIFIC, Cat # A0040, TCI Japan, as they are the lowest among all bidders and as per our specification.



**Prof. Dr. Bina Shaheen Siddiqui**  
(Convenor)



**Dr. Atia-tul-Wahab**  
(End-User)



**Mr. Sohail Ahmed**  
(Member)



**Mr. Haris Qureshi**  
(Member)

**SINDH PUBLIC PROCUREMENT REGULATORY AUTHORITY**

**CONTRACT EVALUATION FORM**

**TO BE FILLED IN BY ALL PROCURING AGENCIES FOR PUBLIC CONTRACTS OF WORKS, SERVICES & GOODS**

- 1) NAME OF THE ORGANIZATION / DEPTT. Third World Center for Chemical Sciences, International Center for Chemical and Biological Sciences, University of Karachi.
- 2) PROVINCIAL / LOCAL GOVT./ OTHER Semi-government; autonomous body
- 3) TITLE OF CONTRACT Purchase/import of chemicals and enzymes
- 4) TENDER NUMBER TWC-BIOASSAY-010414
- 5) BRIEF DESCRIPTION OF CONTRACT Purchase/import of chemicals and enzymes for research work
- 6) FORUM THAT APPROVED THE SCHEME Director, I.C.C.B.S.
- 7) TENDER ESTIMATED VALUE Below Rs. 1.0 million
- 8) ENGINEER'S ESTIMATE (For civil works only) N.A.
- 9) ESTIMATED COMPLETION PERIOD (AS PER CONTRACT) N.A.
- 10) TENDER OPENED ON (DATE & TIME) 3.00 P.M. on 01-04-2014
- 11) NUMBER OF TENDER DOCUMENTS SOLD (Attach list of buyers) Five
- 12) NUMBER OF BIDS RECEIVED Five
- 13) NUMBER OF BIDDERS PRESENT AT THE TIME OF OPENING OF BIDS Three
- 14) BID EVALUATION REPORT (Enclose a copy) mailed to you on 12-05-2014 and 22-05-2014
- 15) NAME AND ADDRESS OF THE SUCCESSFUL BIDDER KHB (LHR) DJ Scientif, Diagnostic System (KHi)
- 16) CONTRACT AWARD PRICE Rs. 63,500/-, 41,900/- and 4,400/-
- 17) RANKING OF SUCCESSFUL BIDDER IN EVALUATION REPORT (i.e. 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> EVALUATION BID). 1st evaluated lowest

18) METHOD OF PROCUREMENT USED : - (Tick one)

- a) SINGLE STAGE - ONE ENVELOPE PROCEDURE  Domestic/ Local
- b) SINGLE STAGE - TWO ENVELOPE PROCEDURE
- c) TWO STAGE BIDDING PROCEDURE
- d) TWO STAGE - TWO ENVELOPE BIDDING PROCEDURE

PLEASE SPECIFY IF ANY OTHER METHOD OF PROCUREMENT WAS ADOPTED i.e. EMERGENCY, DIRECT CONTRACTING ETC. WITH BRIEF REASONS:

Director, I.C.C.B.S.

19) APPROVING AUTHORITY FOR AWARD OF CONTRACT \_\_\_\_\_

20) WHETHER THE PROCUREMENT WAS INCLUDED IN ANNUAL PROCUREMENT PLAN?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

21) ADVERTISEMENT :

i) SPPRA Website  
(If yes, give date and SPPRA Identification No.)

Yes	Serial No. 19337
No	

ii) News Papers  
(If yes, give names of newspapers and dates)

Yes	
No	NO

22) NATURE OF CONTRACT

Domestic/ Local	<input checked="" type="checkbox"/>	Int.	<input type="checkbox"/>
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23) WHETHER QUALIFICATION CRITERIA  
WAS INCLUDED IN BIDDING / TENDER DOCUMENTS?  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

24) WHETHER BID EVALUATION CRITERIA  
WAS INCLUDED IN BIDDING / TENDER DOCUMENTS?  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

25) WHETHER APPROVAL OF COMPETENT AUTHORITY WAS OBTAINED FOR USING A  
METHOD OTHER THAN OPEN COMPETITIVE BIDDING?

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

26) WAS BID SECURITY OBTAINED FROM ALL THE BIDDERS?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

27) WHETHER THE SUCCESSFUL BID WAS LOWEST EVALUATED  
BID / BEST EVALUATED BID (in case of Consultancies)

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

28) WHETHER THE SUCCESSFUL BIDDER WAS TECHNICALLY  
COMPLIANT?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

29) WHETHER NAMES OF THE BIDDERS AND THEIR QUOTED PRICES WERE READ OUT AT  
THE TIME OF OPENING OF BIDS?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

30) WHETHER EVALUATION REPORT GIVEN TO BIDDERS BEFORE THE AWARD OF  
CONTRACT?

(Attach copy of the bid evaluation report)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

31) ANY COMPLAINTS RECEIVED  
(If yes, result thereof)

Yes	
No	NO

32) ANY DEVIATION FROM SPECIFICATIONS GIVEN IN THE TENDER NOTICE / DOCUMENTS  
(If yes, give details)

Yes	
No	NO

33) WAS THE EXTENSION MADE IN RESPONSE TIME?  
(If yes, give reasons)

Yes	
No	NO

34) DEVIATION FROM QUALIFICATION CRITERIA  
(If yes, give detailed reasons.)

Yes	
No	NO

35) WAS IT ASSURED BY THE PROCURING AGENCY THAT THE SELECTED FIRM IS NOT  
BLACK LISTED?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------

36) WAS A VISIT MADE BY ANY OFFICER/OFFICIAL OF THE PROCURING AGENCY TO THE  
SUPPLIER'S PREMISES IN CONNECTION WITH THE PROCUREMENT? IF SO, DETAILS TO  
BE ASCERTAINED REGARDING FINANCING OF VISIT, IF ABROAD:  
(If yes, enclose a copy)

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

37) WERE PROPER SAFEGUARDS PROVIDED ON MOBILIZATION ADVANCE PAYMENT IN  
THE CONTRACT (BANK GUARANTEE ETC.)?

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
-----	--------------------------	----	-------------------------------------

38) SPECIAL CONDITIONS, IF ANY  
(If yes, give Brief Description)

Yes	
No	NO

*Muhammad Anwar*

**Sr. Professor  
ICCBS**

Signature & Official Stamp of  
Authorized Officer

H.E.J. Research Institute  
of Chemistry  
University of Karachi

**FOR OFFICE USE ONLY**

**SPPRA, Block. No.8, Sindh Secretariat No.4-A, Court Road, Karachi**  
Tele: 021-9205356; 021-9205369 & Fax: 021-9206291

Phone (Purchase & Store): (92) 021-34819011  
 Fax (Purchase & Store) : (92) 021-99261789  
 Fax (Main Office) : (92) 021-34819018, 34819019

E-mail: store@iccs.edu  
 : store.iccs@hotmail.com

## THIRD WORLD CENTER FOR CHEMICAL SCIENCES

INTERNATIONAL CENTER FOR CHEMICAL AND BIOLOGICAL SCIENCES

UNIVERSITY OF KARACHI, KARACHI-75270, PAKISTAN.

Tel UAN: 111-222-292, (92-21-34824901, 34824902, 34824930, 34824934, 34824936) Ext. 108, 109 154, 159

1327

### PURCHASE ORDER / WORK ORDER

P.O. No. \_\_\_\_\_

Date: 24-06-2014

Messrs: Diagnostic Systems

Fax # 34972349

Ref: Your quotation No. DS/TWCCS/001/04/2014 TWC-Bioassay-010414 Dated: 1-4-2014

Subject: Supply of chemicals to Prof. Dr. M. I. C. and DS. at the lab

Please supply the following articles to the institute.

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT Rs. Ps.	
1.	Sulfanilic acid GR for analysis ACS Reag. Cat # 1.00686.0100 Merck Germany	100g	4,400/- (100g)	4,400	00
E. & O. E.		TOTAL	Rs:	4,400	00

(Rupees) Four Thousand Four hundred only

Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within 5 days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.

*[Signature]*  
 PURCHASE OFFICER

PURCHASE OFFICER



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P.O. No. 1326 PURCHASE ORDER / WORK ORDER Date: 24-06-2014

Messrs: DJ Scientific Fax # 34964742

Ref: Your quotation No. DJSCI/2013-14/TEN/071/TWC TWC-BIOASSY-0044 Dated: 01-04-2014

Subject: Supply of chemicals to Prof. Dr. M. I. C and Dr. Waheed Iqbal Wajid

Please supply the following articles to the institute.

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT	
				Rs.	Ps.
1.	Naphthylethylenediamine dihydrochloride monomethanolate Cat # N0577 TCI Japan	25g	11,200/- (25g)	11,200	00
2.	Phenol Cat # P1610 TCI Japan	25g	4,800/- (25g)	4,800	00
3.	Ascorbose Hydrate Cat # A2485 TCI Japan	1g	17,500/- (1g)	17,500	00
4.	4-Nitrophenyl Acetate Cat # A0040 TCI Japan	25g	8,400/- (25g)	8,400	00
E. & O. E.			TOTAL	Rs.	41,900 00

(Rupees) Forty One Thousand Nine hundred only

Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within 5 days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.

*Handwritten Signature*  
 PURCHASE OFFICER

PURCHASE OFFICER

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 Fax (Purchase & Store) : (92) 021-99261789  
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Tel UAN: 111-222-292, (92-21-34824901, 34824902, 34824930, 34824934, 34824936) Ext. 108, 109 154, 159

P.O. No. 1325 PURCHASE ORDER / WORK ORDER  
BY COURIER Date: 24-06-2014  
 Messrs: KHB International Fax # 92-42-37350965  
 Ref: Your quotation No. KHB-009-14 Tenor TWC-Biossory-010414 Dated: 28-03-2014  
 Subject: Supply of chemicals to Prof. M.J. Chandley and Dr. Ota. Ind. Waleh

Please supply the following articles to the institute.

S. No.	PARTICULARS	QUANTITY	RATE	AMOUNT	
				Rs.	Ps.
1.	Feerogine Cat # 00342 Chemimpex USA	5g (1 vial)	16,250/- (57)	16,250	00
2.	Dipotassium ethylenediamine Tetraacetic acid (Na <sub>2</sub> EDTA) Product No 40500012 Bio World USA	250g	2,850/- (202)	2,850	00
3.	Substrate: Thymidine Cat # 00306 Chem Dupex USA	10g	11,500/- (108)	11,500	00
4.	Inhibitor: 7-Deazaxanthine Product no: FD11329 CMS Chemicals, U.K.	1g	24,500/- (18)	24,500	00
5.	Standard: Gallic acid monohydrate Cat # 99939 Chemimpex USA	100g	8,500/- (100)	8,500	00
E. & O. E.			TOTAL	Rs.	63,600 00

(Rupees) Sixty Three Thousand Six hundred only

Please submit your bill in duplicate for payment.  
 Please Note: Kindly supply the goods within 5 days/weeks from the date of receipt of this P.O., if you fail to supply the goods within given time period, a penalty @ 0.50% per day on the total order amount will be imposed.

*[Signature]*  
 PURCHASE OFFICER

INTERNATIONAL CENTER FOR CHEMICAL AND BIOLOGICAL SCIENCES (ICCBS)  
UNIVERSITY OF KARACHI



4/3/14

H.E.J.  TWC  PCMD  PROJECT

Document Title: Purchase Requisition Form					
Doc. No.:	ICCBS/04/08-01	Rev. No.	01	Issue No.	1

Sanction No. \_\_\_\_\_

P.O. No. \_\_\_\_\_

FEB/27/TWC/43/13-14

Serial No.: 0257

Date 27/2/14

**PURCHASE REQUISITION FORM**

Sci. Equipments  Chemicals  Glassware  Stationery  Computer & Accessories  General Items

PLEASE (✓) AT APPROPRIATE PLACE ON THE ABOVE DESCRIPTION

The prior approval is hereby requested for the purchase of the stated items, which are required for,

Prof./ Dr./ Mr./ Ms. Prof. Dr. M. Iqbal Choudhury Lab No. 2-131 Intercom No. 307

The amount required for the purchase of these items may deducted from the head of,

From Research Grant or (Bioassay Screening)

Sr. No.	Item(s)	Specification / Description	Quantity	Instructions
1	Enzymes and its	List attached		Tender
2	Chemicals			
3				
4				
5				
6				
7				
8				
9				

Requested By:

Name: Atia

Signature [Signature]

Faizan  
Recommended by Finance Manager

[Signature]  
Signature of the Supervisor

Received in Store (Date & Sign.)

Submitted for approval for the purchase of the above items. The payment of the above items may be made from the Head of A/C.

[Signature]  
20/2/14

[Signature]

### ENZYME INHIBITION CHEMICAL LIST

S. No.	Chemical Name	Company Name	Units/vial	Quantity
<b>1</b>	<b>XANTHINE OXIDASE INHIBITION ASSAY</b>			
	Enzyme : Xanthine Oxidase Bovine milk	Sigma Cat # X-4376	25 U	1 vial
	Substrate: Xanthine	Sigma Cat # X-0626	-	10 g (1 vial)
	Inhibitor: Allopurinol	Sigma Cat # A8003	-	5 g (1 vial)
<b>2</b>	<b>IRON CHELATING ASSAY</b>			
	Ferrous chloride ( $\text{FeCl}_2 \cdot 4\text{H}_2\text{O}$ )	Sigma Aldrich, USA Cat # 372870	-	25 g (1 vial)
	Ferrozine	Serva Electrophoresis GmbH, Germany Cat # 21326	-	5 g (1 vial)
	Disodium ethylenediamine tetraacetic acid ( $\text{Na}_2\text{EDTA}$ )	Sigma Aldrich, USA Cat # E5134	-	50 g (1 vial)
<b>3</b>	<b>NITRIC OXIDE RADICAL SCAVENGING ASSAY</b>			
	Naphthylethylenediamine dihydrochloride	ICN Biomedicals, Germany Cat # 152549	-	25 g (1 vial)
	Sulfanilic acid	ICN Biomedicals, Germany Cat # 102990	-	100 g (1 vial)
	Sodium nitroprusside	Merck, Germany Cat # 2549480	-	50 g (1 vial)
<b>4</b>	<b>THYMIDINE PHOSPHORYLASE INHIBITION ASSAY</b>			
	Enzyme: Thymidine phosphorylase (from <i>E. coli</i> )	Sigma Aldrich, USA Cat # T6632	900 U/5mL	(1 vial)
	Substrate: thymidine	Sigma Aldrich, USA Cat # T-9250	-	10 g (1 vial)
	Inhibitor: 7-Deazaxanthine	Santa Cruze Biotechnology Inc USA Sc-220800	-	500 mg (1vial)
<b>5</b>	<b>UREASE INHIBITION ASSAY</b>			
	Enzyme: Urease <i>Canavalia ensiformis</i> (Jack bean)	Sigma Aldrich, USA Cat # U1500	100 KU	(1 vial)
	Substrate: Urea			
	Inhibitor: Thiourea			
	Sodium nitroprusside	Merck, Germany Cat # 2549480	-	50g (1 vial)
	Phenol	TCl Cat# P1610	-	25g (1 vial)

	Sodiumhypochlorite	Scharlau Cat # S004361000	-	1litre
	Sodium hydroxide	Uni-chem Cat # S41298-4J	-	1kg
5	<b><math>\beta</math>-GLUCURONIDASE INHIBITION ASSAY</b>			
	Enzyme : $\beta$ -Glucuronidase, from <i>Escherichia coli</i>	Sigma Cat # G7396	25 KU	1 vial
	Substrate: 4-nitrophenyl- $\beta$ -d- glucuronide	Sigma Cat # N1627	-	250 mg (1 vial)
	Inhibitor: D-saccharic acid 1,4-lactone	Sigma Cat # S-0375	-	1 g (1 vial)
6	<b>DPPH-RADICAL SCAVENGING ASSAY</b>			
	Standard: Gallic acid	Sigma cat#G-8647	-	100 g (1 vial)
	DPPH	Sigma Aldrich D9132-1G	-	1 g (1 vial)
7	<b><math>\alpha</math>-GLUCOSIDASE INHIBITION ASSAY</b>			
	Enzyme : $\alpha$ -glucosidase ( <i>Sacchomyces cerevisiae</i> )	Sigma Cat # G-0660	750 U	1 vial
	Substrate: 4-NitroPhenyl $\alpha$ -D- glucopyranoside	Sigma Cat # GN1377	-	1 g (1 vial)
	Inhibitor: Acarbose	Sigma Cat # A8980	-	1 g (1 vial)
8	<b>PEP INHIBITION ASSAY</b>			
	Enzyme: Prolyl endopeptidase	Cat#E-1411, Flavobactrium SP.	-	1 vial
	Substrate: <i>N</i> -benzyloxy carbonyl-gly-pro-pNa	Sigma, Cat#96286	-	2 vials
	Inhibitor: Z-pro-prolinal	Sigma, Cat#SML0205	-	2 vials
9	<b>PHOSPHODIESTERASE INHIBIOTION ASSAY</b>			
	Enzyme: Phosphodiesterase1	Sigma , Cat# p-4631 Type-V, crude dried snake venom, broth atrox	-	4 vials
	Bis(p-nitrophenyl) Phosphate	Sigma, Cat#N-3002	-	2 g
10	<b>CARBONIC ANHYDRASE INHIBIOTION ASSAY</b>			
	Enzyme: Carbonic Anhydrase- II	Sigma , Cat# c-3934 Bovine erythrocyte	-	2 vials

	4-Nitrophenyl acetate	MP-Bio, cat#160888	25 g	
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