



SERVICES AVAILABLE AT PERD CENTRE, APPLICABLE FROM 1ST MAY 2017

ANALYTICAL SERVICES

Sr. No.	Equipment and Make	Sample description	Rate (Rs)		
			Academics	Industry	DAY
1.	MS / MS Sciex - API-2000	Per injection	1500/-	2500/-	-
		Batch of 10 injections	12000/-	22000/-	-
2.	HPTLC Camag	Full day use			6000/-
		Scanning and analysis	200/- per plate	500/- per plate	
		Sample application, development and analysis	500/-	1000/-	
		Method development	7000/- per sample	15000/- per sample	
3.	HPLC Analytical Shimadzu and Agilent With UV, PDA and Fluorescent detector	Assay	7000/-	9000/-	
		Purity	9,000/-	11000/-	-
		Method development*	35000/-	40,000/-	-
4.	HPLC Shimadzu Semi-preparative	Impurity	15,000/- n x 10000/	20,000/-	
5.	HPLC Shimadzu Preparative	Impurity	15,000/- n x 10000/-	20,000/-	
6..	Spectrophotometer Shimadzu 2450 and 1800	Full day			3500/-
		Per hour	500/-		
	Spectrofluorimeter Elico	Full day			7000/-
		Per hour	700/-		
7.	FTIR Spectrophotometer Shimadzu	Solid/ liquid sample	500/-	500/-	5,000/-

*Depending on the nature of the sample



SERVICES IN FORMULATION AND DEVELOPMENT

Sr. No.	Equipment	Make	Rates (in Rs.)		
			Per Sample	Academics	Industry
1	Dissolution Apparatus USP I and II	Electrolab India & Hanson Research, USA	-	8,000 [#]	8,000/day [#]
2	Dissolution Apparatus USP III	Hanson Research, USA	-	10,000 [#]	10,000/day [#]
3	Rapid Mixer Granulator (RMG)	Kevin	-	2,000 [#]	3,000/ trial [#]
4	Rotary Tablet compression machine, 16 station	Bhartia Cutler Hammer Ltd., India	-	6,000 [#]	10,000/trial [#]
5	Bilayer Tablet compression machine	Karnawati Eng., India	-	8,000 [#]	12,000/day [#]
6	MultiMill	Cadmach, India	-	3000 [#]	4000/day [#]
7	Multipurpose Kalweka Unit	Kalweka, India	-	4,000 [#]	5,000/day [#]
8	Fluidized Bed Coater and Drier	Niro Aeromatic Ltd., Germany	-	4,000 [#]	5,000/trial [#]
9	Extruder and Spheronizer	R. R. Enterprise, India	-	4,000 [#]	6,000/day [#]
10	Transdermal Dosage form Mfg. Equipment (Labscale)	Werner Mattis AG, Switzerland	-	8,000 [#]	10,000/day [#]
11	Transdermal Diffusion Cell system and Release rate tester	Hanson Research, USA	-	5,000	5,000/trial
12	Sieve Analysis	Electrolab, India	1,000	-	-
13	Moisture Analysis by- KF	Systronics, India	2,000	-	-
14	Capsule Filling Machine	Pam Glatt, Germany	-	5,000 [#]	5,000 [#]
15	Zeta Sizer Nano ZS 90 Zeta potential Particle size (only liquid sample)	Malvern, UK		1,000 ^{##} 1,000	1,500 ^{##} 1,500
16	Iontophoresis Unit	VJ instruments, India	3,500	-	-
17	Brookfield Viscometer	Brookfield, USA	2,000	-	-



B. V. Patel PERD Centre

Sr. No.	Equipment	Make	Rates (in Rs.)		
			Per Sample	Academics	Industry
19	Spray Drier (costing for 250 ml of sample)	JISL, Mumbai	-	5,000	6,000
20	Probe Sonication sample volume a) ≥ 2 ml b) ≥ 50 ml	Hielscher, Germany	-	2,500/ sample	3,500/ sample
21	Differential Scanning Calorimetry (DSC) ^{##} (cost per sample)	TA instruments, USA	Solid	1,500	2,000
			Liquid	1,800	2,500
			CryoDSC	1,800	2,800
			If run time per sample exceeds for more than 2 hour, every subsequent hour increase in run time will be charged extra at the rate of Rs. 500 per hour ^{##}		
22	Modulated DSC ^{##}	TA instruments, USA	Rs. 6000/sample, subject to run time not exceeding 2 hour, if it exceeds for more than 2 hour, every subsequent hour increase in run time will be charged extra at the rate of Rs. 1500 per hour ^{##}		
23	Flame photometer (For Sodium, Calcium & Lithium)	Systronics, India	-	4,000/ sample	5,000/ sample
24	pH measurement (only aqueous solution)	Eutech, India	250/ sample	-	-
25	Lipolysis	Universal Autotitration, Systronics, India		4,500*	5,500*
26	Humidity chamber (without analysis)- 40°C/ 75 % & 30°C/ 65%	Kesar Control Systems	5,000 per sample per month [#]		
27	Pilot plant usage	On request			
28	Development of NDDS along with analytical evaluation	On request			

N.B. Manpower charges are not included in above rate list, to be added on case to case basis.

Charges excluding analysis of sample

All the Samples must be submitted along with duly filled form

***Analysis of drug will be decided on case to case basis**

Prices stated are exclusive of GST



DSC / MDSC

Number of Samples: _____

Nature of Sample: LIQUID/SOLID _____

Sample ID: _____

Melting point and Temperature Range: _____

Heating Rate: _____

Amount of the sample sent: _____

Heat /Cool cycles (If yes, specify): _____

Sample left should be disposed: (YES/NO) _____, If YES specify
method of disposal for the sample _____

If, NO, KINDLY COLLECT SAMPLE WITHIN TWO DAYS OF COMPLETION OF ANALYSIS

Name & Signature: _____

Date: _____



B. V. Patel PERD Centre

Particle size distribution and Zeta potential determination

using Malvern Zeta Sizer (ZS 90)

Number of Samples: _____

Sample ID: _____

Tick the analysis to be carried out: Particle size and its distribution/ Zeta Potential/ both/ either, specify _____

Is dilution required: Y/N, if yes, specify the dilution _____

Specify dilution media: _____

Sample left should be disposed: (YES/NO) _____, If YES specify
method of disposal for the sample _____

If, NO, KINDLY COLLECT SAMPLE WITHIN TWO DAYS OF COMPLETION OF ANALYSIS

Name & Signature: _____

Date: _____



STUDY USING MAMMALIAN CELL LINES

(Please check the list of cell lines available with us)

Sr. No	Name of Study	Price (in Rs.)	Duration
1.	Cytotoxicity/ Cell Proliferation	2000/cell line/ Compound/time point	15-20 days after confirmation [#]
2.	Drug Uptake	2000/ Cell line/ Compound/time point	
3.	Cell Metastasis assays <ul style="list-style-type: none">• Cell migration• Colony formation assay	3000/cell line/compound/assay	

[#] Duration can be vary depending upon the availability of the facility

List of cell lines available at PERD Centre

Sr. No	Name of cell line	Origin
1.	MCF-7	Breast Cancer
2.	MDAMB231	Breast Cancer
3.	MDAMB468	Breast Cancer
4.	A549	Lung Cancer
5.	CaSki	Cervical Cancer
6.	Hela	Cervical Cancer
7.	SiHa	Cervical Cancer
8.	HEK	Human embryonic Kidney
9.	Caco2	Colon Cancer
10.	RAW 264.7	Monocyte/Macrophage
11.	J744.2	Monocyte/Macrophage



Cell Based& Molecular Biology Assays

Sr. No.	Assay Type	Assay details	#Charges per sample in INR	Time	Remarks
1	*Western Blot	Complete assay (Assay designing, with cell line, treatment, harvesting, protein estimation, SDS, western blot with optimisation)	6000	21 working days after confirmation	(1) In all cases Antibodies needs to be given by the client Or It will be charges as actuals (2) Protocol will be shared only after confirmation of the study
		with cell line, treatment, harvesting, protein estimation, SDS, western blot with optimisation)	5000	21 working days after confirmation	
		*Harvesting, protein estimation, SDS, western blot with optimisation	3000	15 working days after receiving sample	
		*Only SDS and western blot	2200	10 working days after receiving sample	
2	Apoptosis assay	Kit based Qualitative (only microscopic pictures)	4000	21 working days after confirmation	Three images will be given free of cost. Every extra image will be charged on per photograph basis
		Kit based Qualitative (by FACS analysis)	5000	21 working days after confirmation	Qualitative assay with 3 images will be done free of cost with
3.	Drug uptake Fluorescent labelled	By FACS	Rs. 3000 /time point/sample	21 working days after confirmation	Qualitative assay will be done free of cost
		By Microscopy	2000 timepoint/persample	21 working days after confirmation	
4	Real Time PCR (Syber green chemistry)	Complete assay Assay designing, primer designing, primers synthesis, mRNA isolation, cDNA synthesis, qPCR, standard curve preparation	8000 / gene/reaction	21 working days after confirmation	Primer synthesis will be outsourced and charged as actuals RIN number can be given on request & will be charged as actuals
		*Only qPCR assay	4000 / gene/reaction	15 working days after receiving sample	Primers, cDNA will be provided by client
5	End point PCR	Complete assay DNA isolation, primer designing & synthesis, PCR reaction, gel analysis	2500/-	15 working days after receiving sample	
6	FACS Analysis	Only analysis as per the given protocol	1000/-	7 working days	Samples in bulk (more then 10) will be considered for discount.

*Assay results depends on sample quality. #GST 18% would be charged extra.



SERVICES IN MEDICINAL CHEMISTRY

Sr. No.	Services	Charges (Rs.)
1	Synthesis of fine chemicals	On request
2	Synthesis of impurities in bulk drugs (1-5g) depending on the number of steps	On request
3	Impurity profiling of bulk drugs by HPLC-MS (per sample) Only HPLC (per sample) only the profile	On request 10,000
4	Separation of impurities /compounds by preparative HPLC (One compound) More than one compound separation (n = number of compounds in the given sample)	15,000 n x 10000
5	Characterization of impurities per each impurity if the sample is provided	15,000
6	Separation and characterization impurities Charges per impurity	25,000 per impurity
7	Synthesis of library of compounds and building blocks per 100 mg sample if there are 2-3 steps. For 4-6 steps	25,000 35,000



List of Impurities:

Drug	Sr No.	Process related impurities/ Degradation Products
Actarit	1	2-(4-aminophenyl)acetic acid
	2	1-(4-aminophenyl)ethanone
	3	N-(4-acetylphenyl)acetamide
	4	N-(p-tolyl)acetamide
	5	2-(4-aminophenyl)-1-morpholinoethanethione
	6	N-(4-(2-morpholino-2-thioxoethyl)phenyl)acetamide
	7	2-(p-tolyl)-1,2-oxaziridine
Bambuterol	1	5-(2-(tert-butylamino)-1-hydroxy ethyl)benzene-1,3-diol
	2	3-(2-(tert-butylamino)-1-hydroxyethyl)-5-hydroxyphenyl dimethyl carbamate
	3	(Z)-5-(2-aminovinyl)benzene-1,3-diol
	4	5-(2-(tert-butylamino)-1-hydroxyethyl)benzene-1,3-diol
	5	3-(2-(tert-butylamino)-1-hydroxyethyl)-5-hydroxyphenyl dimethylcarbamate
	6	3,5-di(N,N-dimethylcarbamyloxy) acetophenone
	7	2'-Bromo-3,5-di(N,N-dimethylcarbamyloxy) acetophenone
	8	5-(2-(tert-butylamino) acetyl)-1,3-phenylene bis(dimethyl carbamate)
Others	1	4-(Aminomethyl) benzoic acid
	2	4-Deoxy-Pyridoxine Hydrochloride
	3	N-(4-Aminobenzoyl)-L-glutamic acid
	4	2-methyl-5-nitroimidazole

*Imidapril, Doxophyline, Irbesartan&Trandolapril impurities (Process/degradation related) can be prepared on order as it requires separation by HPLC.



MICROBIOLOGICAL STUDIES

Sr. No.	Name of Study	Price (in Rs.)	Duration
1.	Antimicrobial activity	300/organism/sample	8-10 days after confirmation [#]
2.	Determination of MIC/MBC	800/organism/sample	
3.	Sterility testing	500/sample	
4.	Sterility testing with identification of contaminants	2500/sample	10-15 days after confirmation [#]

[#] Duration can vary depending upon the availability of the facility

List of Microorganisms Available

Sr. No.	Microorganism
Bacteria	
1.	<i>Bacillus subtilis</i>
2.	<i>Escherichia coli</i>
3.	<i>Pseudomonas aeruginosa</i>
4.	<i>Salmonella abony</i>
5.	<i>Staphylococcus aureus</i>
Fungi	
1.	<i>Aspergillus brasiliensis</i>
2.	<i>Trichophyton rubrum</i>
3.	<i>Trichophyton verrucosum</i>
Yeast	
1.	<i>Candida albicans</i>



TOXICITY STUDY

Sr. No.	Study	Species	Cost	Reporting Time
1	Acute toxicity study – oral	Rat	1,70,000/-	21 Days
2	Acute toxicity study – oral	Mice	1,50,000/-	21 Days
3	Sub acute (28 Days) toxicity study – oral	Rat	3,50,000/-	42 Days
4	Sub acute (28 Days) toxicity study – oral	Mice	3,20,000/-	42 Days
5	Chronic (90 Days) toxicity study – oral	Rat	6,60,000/-	120 Days
6	Chronic (90 Days) toxicity study – oral With Recovery	Rat	7,75,000/-	140 Days
7	Chronic (90 Days) toxicity study – oral	Mice	5,98,000/-	120 Days
8	Chronic (90 Days) toxicity study – oral With Recovery	Mice	7,35,000/-	140 Days



ANIMALS MODLES AVAILIABLE FOR PHARMACOLOGICAL STUDIES

Sr. No.	Disease	Model
1	Asthma	Ovalbumin (IgE) sensitized animal model
2	Alzheimer	Aluminium chloride (AlCl ₃) induced model
3	Cataract	Sodium selenite induced cataract model
4	Diabetes (Type I and II)	<ul style="list-style-type: none">• High fat diet plus Streptozotocin induced rat model• Alloxan induced rat model
5	Hepatotoxicity	<ul style="list-style-type: none">• CCL4 induced animal model• Ethanol induced animal model• Paracetamol induced animal model
6	Inflammation	<ul style="list-style-type: none">• Carrageenan induced rat paw edema model (Acute)• Formalin induced rat paw edema model (Chronic)
7	Ulcer	<ul style="list-style-type: none">• Ethanol induced model• Pylorus ligation induced model• Water immersion plus resistant stress(WIRS)• Cysteamine-induced duodenal ulcer model
8	Wound healing	<ul style="list-style-type: none">• Surgical wound• Burn wound by thermal injury• UV light induced rat model
9	Epilepsy	<ul style="list-style-type: none">• PTZ(pentylentetrazole) induced convulsion• Isoniazid induced convulsion
10	Gastroenteropathy	NSAIDs induced rat model
11	Urolithiasis	Ethylene glycol induced rat model
12	Implantation	Stress model
13	Cancer Xenograft	Immunosuppressant based tumor xenograft model
14	Benign Prostatic Hyperplasia (BPH)	Testosterone Propanioate induced rat model