

# Bioassays Services

**ChromaDex™ is pleased to announce the launch of a new line of bioassay services to complement our line of phytochemicals and contract analysis services. ChromaDex™ now offers over FIFTY different bioassays covering a wide range of pharmacological relevance.**

As the industry leader in Phytochemicals, ChromaDex™ now has the expertise and uniquely powerful bioassays to provide you with biologically relevant experimental results. Our experts will work directly with you to design and perform bioassay studies that are customized to your specific needs. We utilize our proven technologies and materials, and maintain strict control over raw materials and equipment. You can trust that your samples are handled with the utmost care, expertise, and confidentiality.

ChromaDex™ Bioassay Services is a unique resource that you can use to increase the efficiency of your research. We have a dedicated team of scientists and technicians, working in specialized state-of-the-art facilities to perform your contract research or assay optimization. We deliver results quickly, with unequalled accuracy, value, and reproducibility.

*Call today to learn how to move your research forward with ChromaDex™ Bioassay Services.*

## A. BIOCHEMICAL ASSAYS

Cost per Sample(US\$)

Code	Bioassay	Pharmacological Relevance	1 Sample	2-24 Samples	25-99 Samples	100+ Samples	Turn Around Time(TAT)
CDA-BCA01-ATR	Alpha - Amylase Inhibition Assay	Obesity, Diabetes					2 weeks
CDA-BCA02-ATR	Alpha - Glucosidase Inhibition Assay	Anti-diabetic					2 weeks
CDA-BCA03-ATR	Beta - Glucuronidase Inhibition Assay	Hepatoprotective, Axillary odour					3 weeks
CDA-BCA04-ATR	ABTS Radical Scavenging Assay	Antioxidant					3 weeks
CDA-BCA05-ATR	Acetylcholinesterase Inhibition Assay*	Cognition enhancement					3 weeks
CDA-BCA06-ATR	Aryl Sulphatase Inhibition Assay	Axillary odor					3 weeks
CDA-BCA07-ATR	Butyrylcholinesterase Inhibition Assay*	Cognition enhancement					2 weeks
CDA-BCA08-ATR	Collagenase Inhibition Assay	Anti-ageing / Anti-wrinkle					4 weeks
CDA-BCA09-ATR	Nitric-oxide Scavenging Assay	Antioxidant, Alzheimer's disease					3 weeks
CDA-BCA10-ATR	Superoxide Anion Scavenging Activity (PMS-NADH system)	Antioxidant					3 weeks
CDA-BCA11-ATR	DPP IV Inhibition Assay	Anti diabetic, obesity					4 weeks
CDA-BCA12-ATR	DPPH Assay*	Antioxidant					3 weeks
CDA-BCA13-ATR	Elastase Inhibition Assay	Anti wrinkle, Anti-ageing					3 weeks
CDA-BCA14-ATR	Hyaluronidase Inhibition Assay	Anti-inflammatory. Anti wrinkle					3 weeks
CDA-BCA15-ATR	Hydroxyl Radical Scavenging Assay	Antioxidant					3 weeks
CDA-BCA16-ATR	Lipase Inhibition Assay	Obesity					3 weeks
CDA-BCA17-ATR	15 - Lipoxygenase Inhibition Assay	Anti-inflammatory					3 weeks
CDA-BCA18-ATR	Trypsin Inhibition Assay	Anti-inflammatory					3 weeks
CDA-BCA19-ATR	Xanthine Oxidase Inhibition Assay	Gout					3 weeks
CDA-BCA20-ATR	TC- PTPase Inhibition Assay	TC-PTPase inhibitors are likely to inhibit PTP-1B)					4 weeks
CDA-BCA21-ATR	PTP-1B Inhibition Assay	Anti-diabetic, Anti-obesity					4 weeks
CDA-BCA22-ATR	Aldolase Inhibition Assay	Obesity					3 weeks
CDA-BCA23-ATR	COX-I Inhibition Assay	Done along COX II assay to know selectivity					4 weeks
CDA-BCA24-ATR	COX II Inhibition Assay	Inflammation					4 weeks
CDA-BCA25-ATR	Phosphodiesterase –I Inhibition Assay	Arthritis					4 weeks

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## A. BIOCHEMICAL ASSAYS (continued)

Cost per Sample(US\$)

Code	Bioassay	Pharmacological Relevance	1 Sample	2-24 Samples	25-99 Samples	100+ Samples	Turn Around Time(TAT)
CDA-BCA26-ATR	Protein Phosphatase-1 Inhibition Assay	Cognition enhancement					3 weeks
CDA-BCA28-ATR	Thymidine phosphorylase (TP) Inhibition Assay	Anti-psoriasis					4 weeks
CDA-BCA29-ATR	RHO-Kinase (ROCK-II) new	Erectile dysfunction/Male impotency					4 weeks
CDA-BCA31-ATR	Angiotensin converting enzyme(ACE) inhibition new	Hypertension					4 weeks
CDA-BCA32-ATR	Tyrosinase inhibition new	Skin whitening					4 weeks
CDA-BCA33-ATR	PARP inhibition new	Neuro degenerative disorders					4 weeks
CDA-BCA34-ATR	PLA2 inhibition new	Anti-inflammatory					4 weeks
CDA-BCA35-ATR	PAF acetylhydrolase inhibition new	Atherosclerosis					4 weeks
CDA-BCA36-ATR	IKK-Beta(NF-B kinase) inhibition new	Anti-Diabetic					4 weeks
CDA-BCA37-ATR	Glucose-6-phosphatase new	Anti-Diabetic					4 weeks
CDA-BCA38-ATR	P70S6 Kinase Inhibition	Anti-Diabetic					4 weeks
CDA-BCA39-ATR	ORAC(hydrophylic)	Antioxidant					2 weeks
CDA-BCA40-ATR	SIRT-1 Activation						3 weeks
CDA-BCA41-ATR	Cholesterolesterase Inhibition						2 weeks
CDA-BCA42-ATR	MGL Inhibition						3 weeks
CDA-BCA43-ATR	ORAC(Lipophilic)	Antioxidant					2 weeks
CDA-BCA44-ATR	PPAR Gamma receptor functional assay - agonist						3 weeks
CDA-BCA45-ATR	Advanced Glycated Endproducts Inhibition(AGE)						3 weeks
CDA-BCA46-ATR	SGK-1						3 weeks
CDA-BCA47-ATR	20S Proteosome						3 weeks
CDA-BCA48-ATR	Aldose reductase						3 weeks

## B. CELLULAR ASSAYS

Cost per Sample(US\$)

Code	Bioassay	Pharmacological Relevance	1 Sample	2-11 Samples	12+ Samples	Turn around Time(TAT)
	<b>Lymphocyte Proliferation Assays</b>					
CDA-CA01A-ATR	a. Naïve and LPS treated lymphocytes	Immune modulation				4 weeks
CDA-CA01C-ATR	c. Naïve and Con A treated lymphocytes	Immune modulation				4 weeks
CDA-CA02-ATR	NO Release (in J774A.1 macrophages)	Immune stimulation				4 weeks
CDA-CA03-ATR	NO scavenging (in LPS prestimulated macrophages)	Anti-oxidant				4 weeks
CDA-CA04-ATR	Macrophage Phagocytosis	Immune modulation				4 weeks
CDA-CA05-ATR	LTB4 release assay	Anti-inflammatory				4 weeks
CDA-CA06-ATR	Hepatoprotection assay using t-BH	Hepatoprotection				4 weeks
CDA-CA08-ATR	Histamine release assay	Anti-inflammatory, Anti-allergy				4 weeks
CDA-CA12-ATR	PGE2 release J774A.1 macrophage cells	Anti-inflammatory				4 weeks
CDA-CA13-ATR	Insulin Release	Anti-diabetic				4 weeks
CDA-CA14-ATR	Collagen release NIH-3T3	Anti-wrinkle				4 weeks
CDA-CA15-ATR	TXB2 Release					4 weeks

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## C. MISC. ASSAYS

Code	Bioassay	Pharmacological Relevance	Cost per Sample(US\$)				Turn Around Time
			1 Sample	2-24 Samples	25-99 Samples	100+ Samples	
CDA-MA01-ATR	Brine Shrimp Lethality Test++	Non specific general bioassay					3 weeks
CDA-MA02-ATR	Anti-Staphylococcus aureus* (MTCC 737)	Antibacterial activity					3 weeks
CDA-MA03-ATR	Anti-Escherichia coli (MTCC 1687)	Antibacterial activity					3 weeks
CDA-MA04-ATR	Anti-Kleibsiella pnemoniae (MTCC 109)	Antibacterial activity					3 weeks
CDA-MA05-ATR	Anti-Pseudomonas aeruginosa (MTCC 1688)	Antibacterial activity					3 weeks
CDA-MA06-ATR	Anti-Proteus vulgaris (MTCC 1771)	Antibacterial activity					3 weeks
CDA-MA07-ATR	Anti-Staphylococcus epidermidis (MTCC 435)	Antibacterial activity					3 weeks
CDA-MA08-ATR	Anti-Propionibacterium acne (MTCC 1951)	Antibacterial activity					3 weeks
CDA-MA09-ATR	Anti-S.mutans* (MTCC 890)	Antibacterial activity					3 weeks
CDA-MA10-ATR	Anti-S.salivarius (ATCC 13419-derived)	Antibacterial activity					3 weeks
CDA-MA11-ATR	Anti-S.sanguis (ATCC 10556-derived)	Antibacterial activity					3 weeks
CDA-MA12-ATR	Anti-Candida albicans (MTCC 183)	Antifungal activity					4 weeks
CDA-MA13-ATR	Anti-Trichophyton rubrum (MTCC 296)	Antifungal activity					6 weeks
CDA-MA14-ATR	Anti-Microsporium gypseum (MTCC 2819)	Antifungal activity					6 weeks
CDA-MA15-ATR	Caenorhabditis elegans Lethality	Antihelmintic					

## Quantity of sample required:

- 1 gm sample in a properly closed air tight container. In case the sample is precious and expensive, lesser quantities can also suffice (Please specify the assays for us to provide the minimum sample quantity requirement).

## Turn Around Time:

- The table indicates typical turn around time required for performing the assays. Turn Around Time may vary depending on the sample and project details, please enquire about the exact turn around time, at the time of order

## General Notes:

- Samples with poor solubility profile in aqueous buffers may not be suitable for analysis.
- $IC_{50}$  /  $EC_{50}$  values can be calculated only for active samples. For samples which do not have sufficient activity the results may not be amenable to statistical analysis or graph plotting and they will be reported as such. In most cases,  $IC_{50}$  will be calculated using linear regression analysis.
- New assays are added frequently; please send us a request for a comprehensive list.
- A ChromaDex Sample Submission form should be filled and sent with all samples for evaluation.
- Details about methodology adopted, importance and relevance of these assays are available on request. For a few assays, positive control data may not be available.
- For all bio-chemical assays, each sample is normally tested at five(5) different concentrations, in duplicate(2). However for some specific assays a different approach is adopted to obtain reliable results. For ex. the PPAR receptor functional assay is performed in agonist mode using 12 concentrations in triplicate.  $EC_{50}$  is presented only when concentration dependant response is observed. Similarly SIRT-1 assay is performed in activation mode with 5 concentrations in 5 replicates and the results are analyzed using a suitable test of hypothesis. (Ex: ANOVA)
- The prices indicated for cell based assays include determination of the measured parameter at five pre-determined concentrations, for herbal extracts (0.01, 0.1, 1, 10, 100  $\mu$ g/ml) and for pure compounds (10<sup>-9</sup>, 10<sup>-8</sup>, 10<sup>-7</sup>, 10<sup>-6</sup>, 10<sup>-5</sup> M), with 6 replicates per concentration. Parallel cell viability estimation is also included in the same cost. These concentrations can be modified as per user request. Same cost is applicable for follow up  $IC_{50}$  /  $EC_{50}$  determination of a sample, at requested 12 concentrations, with 3 replicates per concentration.
- Samples should be preferably free of preservatives for testing in cellular assays. In case preservatives have been added, information should be provided as such samples will require additional testing of preservative controls for obtaining reliable results.