



# BPS SERVICES

Screening & Profiling | Expression | Cell Line Development

EXTENSIVE SERVICE OPTIONS  
TO ACCELERATE YOUR  
DRUG DISCOVERY  
PROGRAMS

Reliable, high quality results



## BREAK THE BOTTLENECKS.

Let us take your project directly from gene cloning and protein production to functional analysis. Services include :

- Protein expression and purification services
- Biochemical and cell-based assays for screening and profiling
- Antibody development services
- Molecular biology services
- Custom services : ranging from cell line development to assay development and screening

**Timely, reliable results at affordable pricing**

### Table of Contents

Custom Expression/Purification.....	2
Cell Line Development.....	4
Screening and Profiling Services.....	5
Antibody Development .....	8
Molecular Biology Services.....	9



## EXPERT TEAM, EXPERT CAPABILITIES.

### Our Team:

- 50% of the BPS team is comprised of Ph.D.-level scientists, five of whom have been here for 5 years!
  - Years of solid experience and expertise in expressing “difficult” enzymes with high activity and high purity
  - Successfully cloned and expressed over 1,000 different enzymes and enzyme complexes
  - Experienced scientists available to help guide projects where needed
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- Proteins manufactured on-site
  - Small and large scale project capabilities



# CUSTOM EXPRESSION/PURIFICATION

## Expression and Purification Services



E.coli

Baculovirus

Mammalian

Our team can help you with target generation using our portfolio of gene expression technologies. Constructs can be optimized for high purity and high yield protein expression as well as X-ray crystallography studies.

- Expertise in expressing highly active enzymes
- Fast turnaround time
- Activity testing
- Customizable QC
- Large quantities
- Flexible deliverables
  - Supernatants
  - Cell pellets
  - Plasmids

High Purity, High Yield

- Expression
- Scale-up
- Purification



# CUSTOM EXPRESSION/PURIFICATION

## Mammalian Expression by Transient Transfection



Subcloning/PCR Cloning

Optimization of Expression and Protein Characterization

Protein Production & Purification

Membrane and Microsome Preparations Available

Virus-Like Particles (VLPs) Available

## Baculovirus Expression



Subcloning/PCR Cloning

Recombinant Virus Production

Optimization of Expression

Protein Characterization

Protein Production & Purification

## E.coli Expression



Subcloning/PCR Cloning

Expression Screening

Optimization of Expression

Protein Characterization

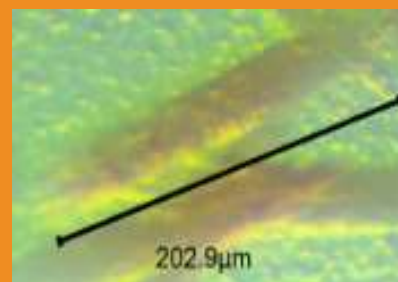
Protein Production & Purification

Inclusion Body/Refold Protocols

- Affinity purification performed using any of the following tags:

**GST-tag**  
**FLAG-tag**  
**His-tag**  
**Streptavidin-tag**  
**(Avi-tag®)**

- FPLC methods include: SEC, IEX, HIC
- Ultracentrifugation & Fractionation
- Crystallography grade proteins available:



# CELL LINE DEVELOPMENT

## Stable Cell Line Development Services



Let us help you reduce time and complexity with our stable cell line development services. BPS Bioscience's team of experts can generate stable cell lines.

- Fast turnaround time
- Customizable QC
- Delivery of multiple stable clones for internal validation
- Large range of background cell types available, including human and murine cell lines

### Mammalian Expression Vector

1. With our cell line development services, the gene of interest will be cloned into the desired mammalian expression vector.
2. The parent cell line will then be tested for its sensitivity to selection antibiotics and optimized for transfection conditions.
3. The stable cell line is generated by transfection of the expression construct into the parent cell line with subsequent antibiotic selection.
4. The individual stable clones will be expanded and screened by Western Blot for optimal expression of the protein of interest.
5. Functional validation will be performed to ensure that the final stable cell lines meet your requirements.

### Applications:

- Stable cell lines for compound screening
- Reporter Gene assays
- Cytokine Assays
- Ion Channel studies
- Protein expression for biochemical assays
- Fusion tagged protein for live cell imaging
- Immunoprecipitation



# SCREENING AND PROFILING

## Screening and Profiling Services



### Evaluate lead compounds

Using our extensive assay panel for biochemical and cell-based screening and profiling services.

### Save Time

By letting us screen your compounds of interest against our unique assay panels to determine potency or selectivity with our portfolio of >200 assays so you can focus on advancing your drug discovery program.

### Get Detailed Results

With all screening and profiling services, we provide a comprehensive report with both raw and analyzed data, graphs, detailed protocols, etc. Since we produce our proteins and enzymes in-house for use with these assays, and we also supply the same proteins to many of the CROs and companies offering HTS services, you can be confident that our quality and consistency are of the highest level.

### Biochemical Assay Methods Available

- AlphaScreen®
- Chemiluminescence
- Fluorescence Intensity
- Fluorescence Polarization (FP)
- Time-resolved fluorometric
- TR-FRET/FRET (HTRF)

### WHY BPS?

- Fast Turnaround Time
- Fully Customizable
- Numerous Unique Screening & Profiling Services
- Orthogonal Screening Platforms
- Standardized Screening Protocols

# SCREENING AND PROFILING

## Biochemical Assays



Our team of experts along with our broad services portfolio makes it easy to:

- Screen for inhibitors/targets
- Select from IC50 determination and single point concentrations
- Receive data within days of compound submission
- Perform follow-up studies using the same proteins manufactured in-house
- Get questions answered or project guidance in a time-efficient manner

### BPS Leads

- Extensive Immunotherapy panel, including many **unique** Immunotherapy targets
- 1st commercially available and largest Demethylase panel
- Over 20 **unique** Histone Methyltransferases
- 1st and most extensive PARP isozyme panel
- 1st and most extensive PDE isozyme panel
- 1st complete suite of HDAC and SIRT enzymes
- Extensive Bromodomain & HSP90 panels

Visit <http://bpsbioscience.com/biochemical-based-assays> for a detailed listing of Biochemical Assay target panels

### Biochemical Assay Target Classes

- Acetyltransferase
- Apoptosis
- Bromodomain
- Cell Surface Receptor
- DNA Methyltransferase
- HDAC/Sirtuin
- Histone Demethylase
- Histone Methyltransferase
- HSP90
- Immunotherapy
- Kinase
- Metabolic Enzymes
- Methyl-lysine Reader
- PARP
- PCSK9
- PDE
- Phosphatase
- Protease
- Pyruvate Kinase





# SCREENING AND PROFILING

## Cell Based Assays



BPS has developed a number of recombinant reporter cell lines to screen inhibitors and/or activators of various cell signaling pathways. If you are developing inhibitors specific to one of our pathway reporters, these cell-based systems offer a more complex and physiologically relevant setting than cell-free systems. This screening service is also a great tool that can be used to tease out the specific pathway that a particular compound is targeting; simply send us the compound and we can screen against our entire portfolio or a select few pathways. With any screen, we provide rapid, dependable profiling of compounds against the requested pathway-specific cell lines by EC<sub>50</sub> or IC<sub>50</sub> determination.

### Mammalian Systems:

- Stable Cell Lines
- Reporter Gene Assays
- Cytokine Assays
- Ion Channel Assays
- Tumor Cell Panel

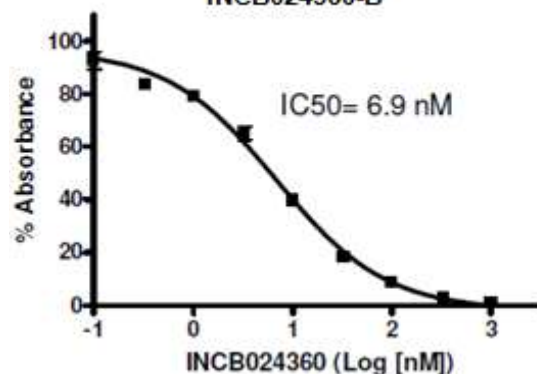
Various cell backgrounds: HEK, HeLa, A549, CHO-K1, Jurkat

Visit <http://bpsbioscience.com/cell-based-assays> for a detailed listing of Cell Based Assays

## Cell Based Assay Target Classes

- **Cell Signaling Pathways**
  - Hedgehog Pathway
  - NFκB Pathway
  - Nrf2 Antioxidant Pathway
  - Wnt/β-catenin Pathway
  - Many more
- **HDAC**
- **Immunotherapy Targets**
  - IDO
  - TDO
  - PD-1
  - Many More
- **PDE**
- **Cell Proliferation/Viability**

Inhibition of IDO1 in Cell-Based Assay By INCB024360-B



# ANTIBODY DEVELOPMENT SERVICES

## Therapeutic Antibody Services



Let BPS Bioscience manage the expression of the antibodies you need for your research.

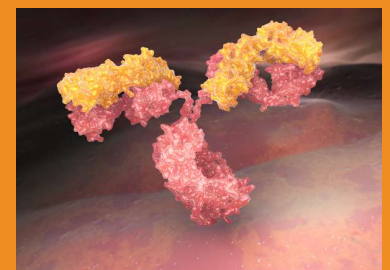
BPS provides mAb transient expression service by using a serum-free HEK293 suspension system.

### Pilot Expression and Purification

1. Evaluation and optimization
2. Scale up and purification of mAb expression by affinity chromatography
3. Delivery of purified antibody and complete project report with SDS-PAGE/Western blot analysis documenting the antibody production

### Capabilities:

- Antigen expression and purification
- Affinity maturation available
- Antibody characterization
- Binding affinity
- Epitope mapping
- Antibody-Antigen Co-crystallography



## Molecular Biology



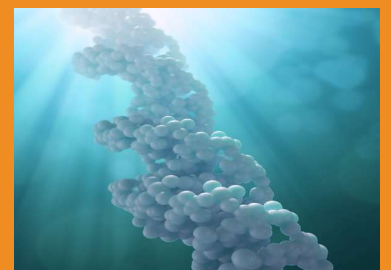
We offer a wide range of custom molecular biology services.

Gene Cloning Services – Let us clone your gene of interest into an expression plasmid of your choice:

- Full Gene Cloning
- Site -Directed Mutagenesis

Gene Expression and Cell Signaling Analysis – We offer flexible options for analyzing cell responses and signaling. You can provide us with cell pellets, lysates, or instructions for how you want your cells treated. We can step in at any stage of your experiment and provide the following services:

- qPCR
- Western Blot
- Immunoprecipitation





[WWW.BPSBIOSCIENCE.COM](http://WWW.BPSBIOSCIENCE.COM)



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