



Obatala Sciences, Inc.
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Obatala Sciences™ has developed a series of products and services to support investigation into the research fields of stem cell biology, regenerative medicine, and tissue engineering. Our services include primary cell isolation and expansion, 3D bio-scaffold cell culture, cell selection and enrichment, and animal studies. Obatala's dedicated research team offers its expertise to help its customers identify the appropriate service contract. To stream line this process, we ask our customers to fill out the service checklist at the end of this document after reading the explanation of each of our services.

In Vitro/In Vivo Studies: Obatala offers in vitro studies in 2D and 3D systems. Obatala's 3D cell culture system consists of setting up the systems with our proprietary human-derived hydrogel, Obagel™. Customers can request for their in vitro studies to be performed in either or both of our cell culture systems. Our cell culture services include cell isolation and expansion in 2D or 3D systems from tissues that are internally available at Obatala (human adipose, bone marrow, bone, or placenta) or from human- or animal-derived tissues provided by the customer. In addition to the isolation and expansion in our different cell culture systems, Obatala can perform lineage specific differentiation of cells, staining of cells and quantification of the staining if desired.

Additionally, Obatala offers in vivo studies in different animal models in a variety of animal species. Our most popular animal model is the pressure ulcer model in C57Bl/6 mice (see our blogpost about this model here), but we also offer animal models to study skin diseases/injuries, diabetes, cranial defects, and bone repair. Obatala is also ready to work with its customers to develop in vivo studies that will be appropriate for their research purposes. All animal studies are performed only after protocol review and approval by an independent, academically run Institutional Animal Care and Use Committee (IACUC). All studies involving de-identified human clinical tissue specimens are performed under protocols reviewed and approved by an independent Institutional Review Board.

Customers can request for different assays to be performed in both in vitro and in vivo studies. Below is a list of all assays available for our customers:

- A. Cell Selection/Enrichment:** Obatala offers magnetic bead-based selection/enrichment of cells. Customers can opt to select/enrich the desired cells using Obatala's validated panel of surface markers or provide information on the desired markers they wish to use.
- B. Flow Cytometry:** Obatala offers flow cytometry analysis for all in vitro or in vivo studies that involve cell culture in either 2D or 3D systems. Obatala's expertise involves performing analyses for stromal vascular cells (SVFs) and adipose-derived stromal/stem cells (ASCs); thus, our customers can choose flow cytometry analysis following ASC or SVF cell surface marker panels or request their own desired markers for analysis. In addition, Obatala can offer antigen expression analysis for an additional fee. These



services can be adapted to any cell type and specie of origin as required by Obatala's clients

- C. Gene Expression:** Obatala offers gene expression analysis for all in vitro or in vivo studies. Customers can choose to include analyses with polymerase chain reaction, DNA isolation, or RNA isolation analyses in their studies.
- D. Histology:** Obatala offers the option to perform histology if the customer is performing in vivo studies or providing tissue for cell isolation/expansion. Customers can request that their samples be returned to them as paraffin embedded blocks, fresh frozen samples, or stained/unstained slides. Obatala offers immunohistochemical or immunofluorescence staining of slides.
- E. Microscopy:** Obatala offers a variety of microscopy services that include phase contrast, fluorescent, or confocal microscopy. All of Obatala's microscopes are equipped with cameras able to take microscopy pictures for qualitative or quantitative analyses.
- F. Protein Expression:** Obatala offers proteomic analysis by mass spectrometry of cells and tissue samples. Additionally, we offer targeted proteomic analysis focused on Adipokine and Cytokine expression.
- G. Functionality:** Obatala offers functionality endpoint analyses to customers studying different disease models. These include but are not limited to glucose uptake, lipolysis and cell mitochondrial activity.
- H. Analysis of Data:** Obatala offers analyses of the results of all endpoints selected by the customer. Alternatively, customers can select for only the raw data to be reported. Analyses of data include image analysis using different quantification software, such as Cell Profiler and Image J. If the customer selects for the analysis of the resulting data, the data will be presented in a final report prepared by the Obatala research team.



Obatala's Services

In Vivo

In Vitro

Animal Model

3D

2D

- Histology
- Microscopy
- Flow Cytometry
- Data Analysis

- Functionality
- Gene Expression
- Protein Expression
- Histology
- Microscopy
- Flow Cytometry
- Cell Enrichment/ Selection
- Data Analysis

- Functionality
- Gene Expression
- Protein Expression
- Histology
- Microscopy
- Flow Cytometry
- Cell Enrichment/ Selection
- Data Analysis



Customer: _____

1. Category of Services needed (check all that apply):

- In Vitro Studies
- In Vivo Studies

2. In Vitro Services needed (check all that apply):

- Cell Culture
- Cell Selection
- Flow Cytometry
- Gene Expression
- Histology
- Microscopy
- Image Quantification
- Protein Expression
- Functionality

2.1. Cell Culture (check all that apply):

- Primary Cell Isolation
- Primary Cell Culture
- Primary Cell Expansion
- If so, how many cells desired

-What timeline for cell expansion desired

- Cell Culture in Bioscaffold for 3D
- Cell Lines Culture
- Timeline Required with Multiple Harvest Points
- If so, how many weeks

-How many individual treatment groups

- Cell Differentiation
- If so, which lineages

- Cell Staining post Differentiation
- Quantification of Cell Staining

2.2. Cell Selection/Enrichment (check all that apply):

-Population of interest:

- Selection by magnetic beads
- Use Obatala's recommended markers
- Specify any additional desired markers:
- Analysis Required:



- Pre/post-selection analysis
- Antigen expression analysis (additional fee)

2.3. Flowcytometry (check all that apply):

- Use Obatala's recommended ASC markers
- Use Obatala's recommended SVF markers
- Specify any additional desired markers:

-Analysis Required:

- Antigen expression analysis (additional fee)

2.4. Gene Expression (select all that apply):

- Polymerase Chain Reaction
- RNA isolation
- DNA isolation
- Specify type of primer/kit:

2.5. Histology (select all that apply):

-Tissue type(s):

-Number of sections:

- Paraffin embedded
- Fresh frozen
- Immunohistochemical staining
- Immunofluorescent staining

2.6. Microscopy (check all that apply):

- Phase Contrast
- Fluorescent
- Confocal
- Immunohistochemistry
- Immunofluorescence
- Number of slides:
- Number of images/slides:
 10x 20x Other

2.7. Protein Expression (check all that apply):

- Proteomic Analysis by Mass Spectrometry
- Proteomic Analysis of Adipokine/Cytokine
- If so, adipokine/cytokines expressed or secreted

2.8. Functionality:

- Glucose uptake
- Lipolysis



Cell mitochondrial activity
-If so, specify:

-Mitotracker
 Yes No

-Seahorse
 Yes No

2.9. Image Quantification:

CellProfiler
 ImageJ
 Yes No

-Please specify what would you like to quantify (i.e. protein stain relative to nuclear stain, co-localization of stains, size/shape of objects, etc.)

3. In Vivo Services needed (check all that apply):

Mouse study
 Pig study
 Other animal study
 Analysis of Data

3.1. Mouse study (select all that apply):

Number of animals
-Specify type/strain of mouse needed:

-Type of animal defect model employed:

-Length of time for animal study:

-Frequency of observation and measurement of animal model:

3.2. Pig study (select all that apply):

Number of animals
-Specify type/strain of pig needed:

-Type of animal defect model employed:

-Length of time for animal study:

-Frequency of observation and measurement of animal model:

3.3. Other animal study (select all that apply):

Number of animals
-Specify type/strain of animal needed:



-Type of animal defect model employed:

-Length of time for animal study:

-Frequency of observation and measurement of animal model:

3.4. Analysis of Data (check all that apply):

*Final report will include tables with results as mean \pm S.D.

Graphed Data (specify which type of graphs you require)

Other (specify what other type of data analysis you require)

-Estimated number of times data will be corrected/re-arranged by Obatala Sciences:

4. Meetings and Consultations

Type of required meetings:

Teleconferences (please select preferred program)

Skype

Zoom

Other

Phone

In Person

-Number of meetings required (in addition to budgeted consultation hours):

