



Standard Operating Procedure (SOP)
for
Image Data Submission
to
Indian Biological Images Archive (IBIA)
2024



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A. Introduction of IBIA

Indian Biological Images Archive (IBIA) is an online repository of biological images generated at biological research institutes and hospitals across India (Figure 1). We aim to collect, store, and analyze all types of biological images, including but not limited to multispectral and hyperspectral imaging, thermal imaging, microscopy images (confocal, simple microscope, scanning electron microscope, light sheet microscopy, etc.), agricultural images (captured in both fields and controlled environmental conditions), unmanned aerial vehicle (UAV) images, digital X-ray, CT, MRI, PET, Ultrasound, histopathology, and associated metadata. Moreover, we have plans to develop artificial intelligence-based image analysis pipelines to process these image data.

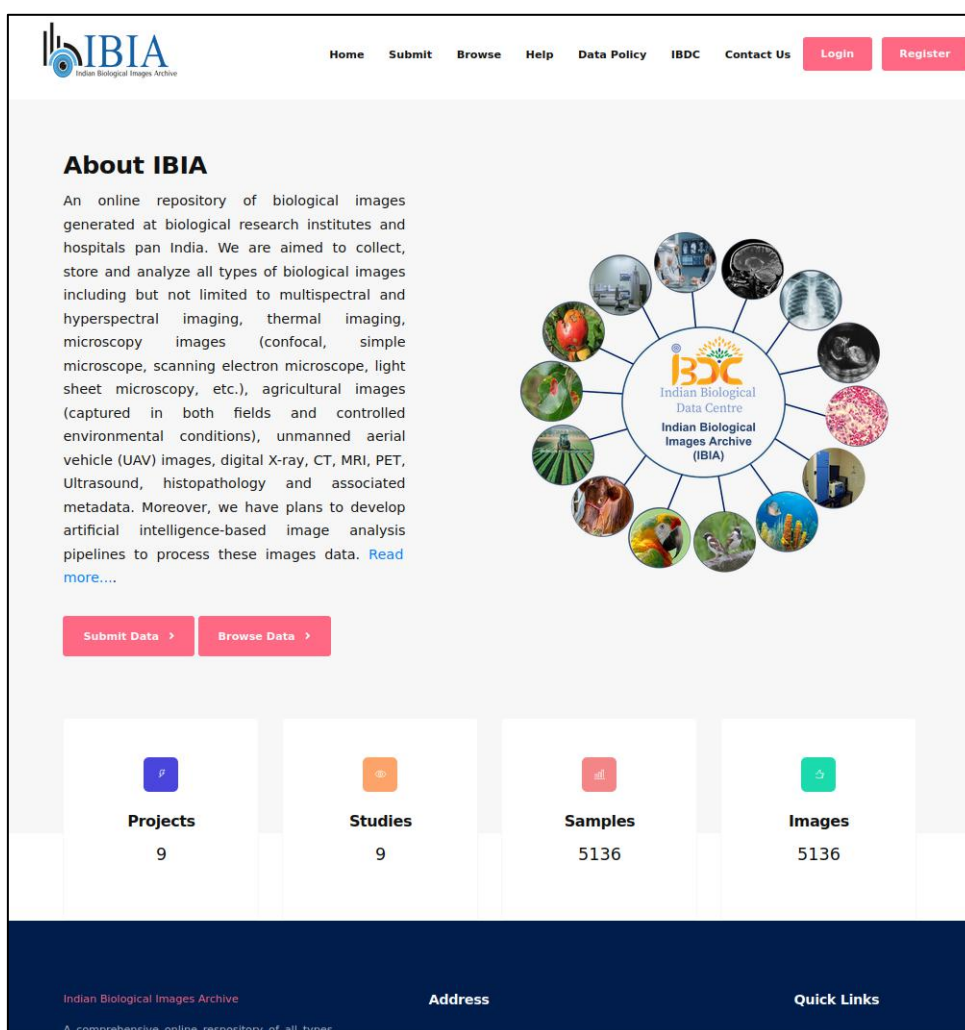


Figure 1. Snapshot of the Home Page of IBIA.

B. User Registration

To create a new account, the user must fill in all the asterisk-marked mandatory fields (including Username, Email, Organization, Password, ORCID, etc.) mentioned on the user registration page (Figure 2). After successful registration, the user will get the account activation link from the IBDC support team on the registered email address. On clicking the link, the user can confirm the activation of the account on the IBIA portal.

The image shows a web browser window displaying the IBIA (Indian Biological Image Archive) registration page. The page has a dark blue header with the IBIA logo on the left and navigation links (Home, Submit, Browse, Help, Data Policy, IBDC, Contact Us, Login, Register) on the right. The 'Register' button is highlighted in red. The main content area is a light gray box titled 'Register' containing a form with the following fields: Username* (test_user), Email* (test.user@gmail.com), First name* (Test), Last name* (Singh), Organization* (Regional Centre for Biotechnology (RCB), Faridabad), Designation* (Principal Investigator), Password* (masked with dots), Password confirmation* (masked with dots), Country* (India), and Orcid (empty). A 'Sign Up' button is at the bottom of the form. Below the form, there is a link 'Already have an account? Log In'. The footer is dark blue and contains three columns: 'Indian Biological Image Archive' (A comprehensive online repository of all types of biological images including but not limited to), 'Address' (Indian Biological Data Center, Regional Centre for Biotechnology), and 'Quick Links' (About us).

Figure 2. Snapshot of User Registration page of IBIA.

C. Getting started on the submission

Data Submission Overview

This section will familiarize the users with the overall data submission process. Registration followed by login is mandatory to submit the image data (with metadata) to IBIA. An activation link is sent at the user's registered email ID at the time of registration. The Registration process is complete after clicking on the activation link/URL. After successful login, the submission/upload of biological image data on the IBIA is completed through ten steps, as shown in the flowchart (Figure 3) below.

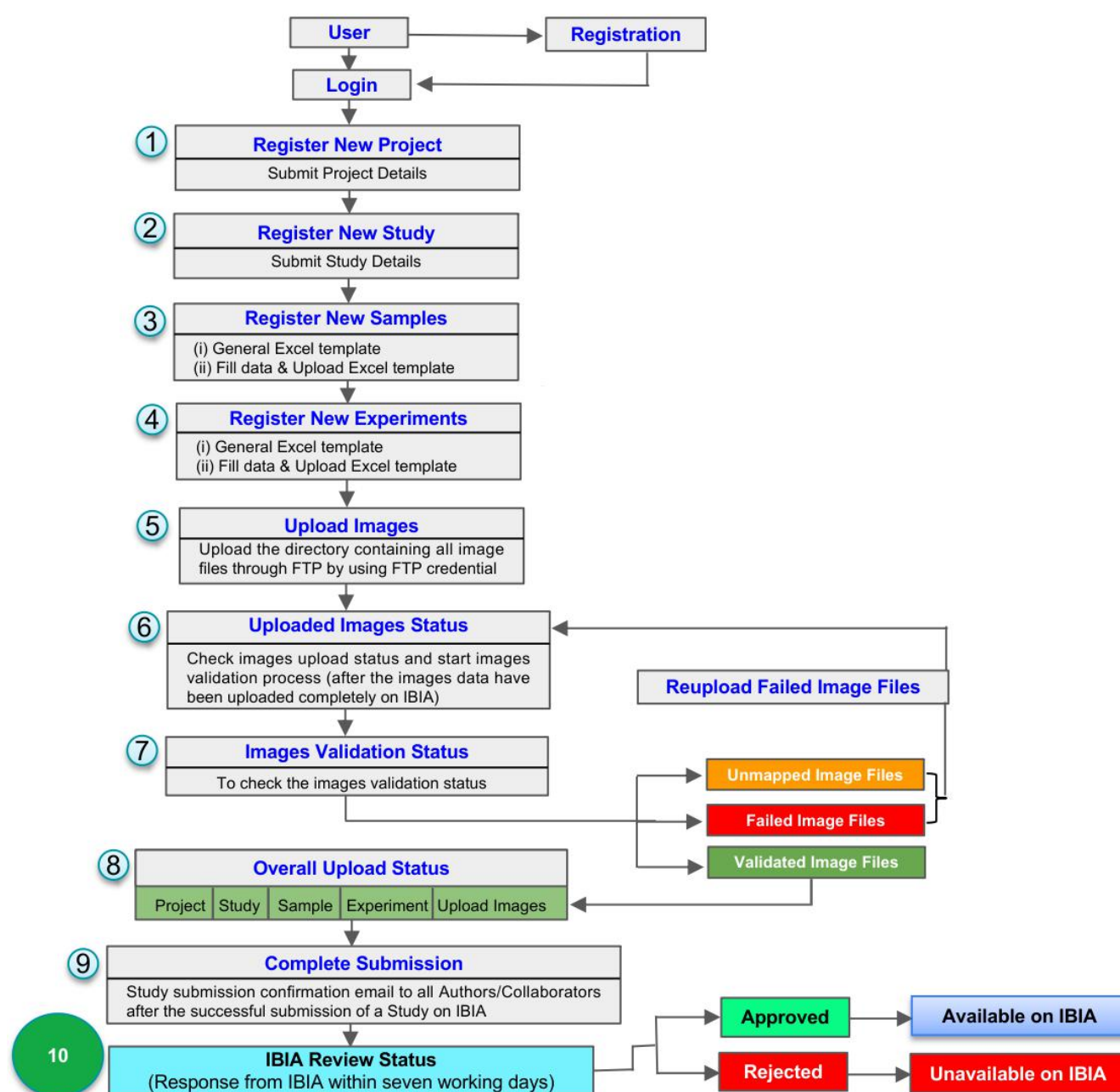


Figure 3. Data submission overview for submission of data on IBIA portal.

Briefly, Steps 1-5 are related to the data saving/upload by the submitter. Steps 6-8 include validating the submitted data by the submitter. If all the image files and associated metadata have been successfully uploaded and validated, the “Step 9: Complete Submission”, allows for the final submission of the study by the submitter. Finally, the submitted study passes through various quality, suitability, and integrity checks of IBIA to match the archive standards. The decision on a finally submitted study (approval/rejection) is made within seven working days by the IBIA review committee, and an email is sent to inform the submitter.

Moreover, the IBIA review decision is also available on the IBIA website as “Step 10: IBIA Review Status”. After the decision, an approved study will be available in the IBIA's “Study Browse” list. The studies with the “Open Access” license type will be available for public use (after the “Study Release Date”). A detailed, step-wise description of each step is given in the subsequent sections.

Step 1: Register New Project

At this step, the submitter can enter details about the new project such as the Project Title, Description, Publication, Funding agency, Grant number, Ethics statement, Any other information, Acknowledgments along with the Author/Collaborator details such as Name, Email, Designation, Role Type (Author or Collaborator) and Organization (Figure 4). Multiple Authors/Collaborators can be associated with a project whose details can be filled out using the option at the bottom. After filling in the required information, the submitter must save the filled project information through the “Save Project” button at the bottom of the page; otherwise, the filled information will be automatically deleted on page refresh. The saved project will be assigned a unique IBIA “Project Accession”, which can be used to register multiple studies within the same project at the next step i.e., “Step 2: Register New Study”. The IBIA “Project Accession” begins with the “IBIAP_” initial, followed by a ten-digit unique identifier.

IBIA: Indian Biological Images Archive

Welcome [User] Logout

MAIN

- Home
- Dashboard
- Help: New Data Submission

New Data Submission (Step 1 to 10)

- Register New Data
- Step 1: New Project**
- Step 2: New Study
- Step 3: New Samples
- Step 4: New Experiments
- Step 5: Upload Images
- Step 6: Images Status
- Step 7: Validation Status
- Step 8: Upload Status
- Step 9: Submit Finally
- Step 10: Review Status

User Submitted Data Browse

- Browse Registered Data
- Browse Projects
- Browse Studies
- Browse Samples
- Browse Experiments

Data Download

- Download Submitted Data

Browse IBIA Metadata List

- IBIA Metadata List

Request IBIA Metadata List Update

- Update IBIA Metadata

Data Summary

Step 1: Register New Project

(Download SOP for Images Data Submission to IBIA)

Note: Fields marked as * are mandatory

Project Title*

Collection of histopathological image dataset for grading breast invasive ductal carcinomas

Representative Image (supported image file formats are: .jpg, .png, .jpeg, .JPG, .PNG, .JPEG)

Case_2-01_96RFGI0.png Browse

(A representative image to depict the types of images to be submitted in the Project/Study)

Description (Maximum 300 words)*

In this dataset, a histopathological microscopy image dataset of 922 images related to 124 patients with IDC is introduced. This dataset is published and accessible through web via: <http://data.biox.com>. What makes this dataset distinct from the similar ones is that it contains equal number of specimens from each three grades of IDC, which led to around 50 specimens for each grade

Publication

<https://data.mendeley.com/datasets/w7jxc7g6/1>

(Preferably, PubMed ID/PubMed Central ID/URL)

Funding agency

N/A

(Name of the Funding Agency with address)

Grant number

N/A

Ethics statement

BreCaHAD_ethics_W59Zn5l.pdf Browse

(Ethical Clearance Certificate (a scanned copy, preferably in pdf format), if applicable)

Any other information

N/A

Acknowledgments

N/A

Upload any other additional file

--- Browse

Authors / Collaborators

Title*	First name*	Middle name	Last name
Prof.	Hamidreza		Bolhasani

Email*	Designation*	Role type*	Organization
avi@gmail.com	Principal Investigator	Author	N/A

Enter only in case of Multiple Authors i.e. if two or more Authors are given simultaneously to the same project

Add Author Remove Author

Figure 4. Snapshot of “Step 1: Register New Project” page of IBIA.

Step 2: Register New Study

In this step, the submitter is prompted to enter details about a new study they want to register, such as the "Project Accession" it belongs to, Study Title, the Number of Participants/Specimens, the Imaging Type (Imaging Technology used to capture images) and Imaging Subtype, a Summary description, Keywords, Access License Type, and the intended Release Date for the study data (Figure 5). Multiple studies can be registered within a project. If the "Imaging Type" of the submitter's choice is unavailable in the dropdown, the metadata (Sample, Experiment, and Instrument) must first be added (Annexure I and II). After getting the IBIA database administrator's approval (within a week), the "Imaging Type" will be available for the selection. The "Step 2: Register New Study" information must be saved by clicking "Save Study" at the bottom. Thus, a unique IBIA "Study Accession" will be assigned to the saved study, which can be used to register samples, experiments, and image files in the further steps.

IBIA: Indian Biological Images Archive

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New Data Submission (Step 1 to 10)

- Register New Data
 - Step 1: New Project
 - Step 2: New Study**
 - Step 3: New Samples
 - Step 4: New Experiments
 - Step 5: Upload Images
 - Step 6: Images Status
 - Step 7: Validation Status
 - Step 8: Upload Status
 - Step 9: Submit Finally
 - Step 10: Review Status
- User Submitted Data Browse
- Browse Registered Data

Data Summary Step 1: Register New Project **Step 2: Register New Study** Step 3: Register New Samples Step 4: Register New Experiments Step 5: Upload Images Step 6: Uploaded Images Status

Step 2: Register New Study

Note: Fields marked as * are mandatory

Select Project Accession* IBIAP_1000000050 Study Title* Collection of histopathological image dataset for grading breast invasive duct Number of Participants/Specimens* 124

Imaging Type* (If required, please add Samples, Experiments and Instruments metadata) Histopathology (HISTO) Imaging Subtype Diagnostic Pathology

Summary* (Maximum 300 words)

In this dataset, a histopathological microscopy image dataset of 922 images related to 124 patients with IDC is introduced. This dataset is published and accessible through web via: <http://databio.com>. What makes this dataset distinct from the similar ones is that it contains equal number of specimens from each three grades of IDC, which led to around 50 specimens for each grade.

Word Count: 61

Keywords* (e.g., Keyword1; Keyword2; Keyword3) IDC; histopathological microscopy Additional / Any Other Information Browse... No file selected.

Access Licence Type* Open Access Release Date* 30 / 06 / 2024

Save Study

Click one-by-one, to send a request for addition of Imaging Type-specific metadata on IBIA, if Imaging Type is unavailable in the drop-down list.

Figure 5. Snapshot of “Step 2: Register New Study” page of IBIA.

Step 3. Register New Samples

In this step, the submitter can choose “Select Study Accession”, “Generate New Sample Type ID”, and fill in mandatory fields like Scientific Name, Biological Entity, Laterality, Source Tissue, Source Cell, Cell Organelle, and the Number of Images. The submitter can add more study/imaging type-specific fields (if they are unavailable in the drop-down box; Figure 6; Annexure I and II). However, these appear on the portal after the IBIA team approves. Then, click the "Generate Excel Template" to generate an Excel sheet (Figure 7) for data upload. The data values must be provided in this template before upload. Any missing value must be filled with "N/A" and should not be left blank.

The auto-generated content (in the generated excel template file) must not be removed/modified while filling the values. The example filled template is depicted in Figure 8. Any changes in the auto-generated content of the excel template will make this erroneous and, thus, unacceptable by IBIA (while its upload after filling values).

All the required excel sheet cells must be filled with values, if the values are unavailable or missing for any cell, these must be filled with “N/A” value. After filling the required information, the template should be uploaded via the option “II. Upload Data through Excel Template (to Save Sample Data in IBIA portal)”, as depicted in Figure 9.

IBIA: Indian Biological Images Archive

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New Data Submission (Step 1 to 10)

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 - Step 7: Validation Status
 - Step 8: Upload Status
 - Step 9: Submit Finally
 - Step 10: Review Status

User Submitted Data Browse

- Browse Registered Data

Data Download

- Download Submitted Data

Browse IBIA Metadata List

- IBIA Metadata List

Step 3: Register New Samples

Note: Fields marked as * are mandatory

I. Generate Excel Template File (To fill Samples details in batch mode):

Select Study Accession* HISTOS_1000000134 Select / Generate Sample Type ID* Generate New Sample Type ID

Mandatory Fields (Required for All Imaging Types):

Homo sapiens 9606 Breast Not Available Breast tissue

Breast Cell N/A 922

Select from Study (Imaging Technology) Specific Fields: (Add more fields)

Note: In case of medical images, "ICD-11 Code" can be retrieved from: <https://icd.who.int/browse/2024-01/mms/en>

- Age at Diagnosis
- Bone involvement
- Cartilage involvement
- Cell Phenotype Studied***
- Date of Procedure
- De-identified Hospital ID
- De-identified Patient ID
- Depth of Invasion(mm)
- Disease/Tumor Progression Observed
- Disease/Tumor Recurrence Observed

Generate Excel Template See Example Generated Excel Template?

II. Upload Data through Excel Template (to Save Sample Data in IBIA portal):

Select Study Accession* Browse... No file selected. Upload Excel Template Data (See Example Filled Excel Template?)

Click to request for addition of more imaging type-specific fields, if unavailable in the drop-down list.

Figure 6. Snapshot of “Step 3: Register New Samples” page on IBIA.

	A	B	C	D	E	F
1	SMTID#39	SMT#52#4#6	1#1#1#1	1#1#1#1		
2	Sample Type ID	Sample Identifier*	Method used for Sample Collection*	Cell Phenotype Studied*		
3	HISTOSMT_10000000020					
4	HISTOSMT_10000000020					
5	HISTOSMT_10000000020					
6	HISTOSMT_10000000020					
7	HISTOSMT_10000000020					
8	HISTOSMT_10000000020					
9	HISTOSMT_10000000020					
10	HISTOSMT_10000000020					
11	HISTOSMT_10000000020					
12	HISTOSMT_10000000020					

Figure 7. Snapshot of “Generated Excel Template” file.

	A	B	C	D	E	F	G
1	SMTID#39	SMT#52#4#6	1#1#1#1	1#1#1#1			
2	Sample Type ID	Sample Identifier*	Method used for Sample Collection*	Cell Phenotype Studied*			
3	HISTOSMT_10000000020	01 BC G1 9057 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
4	HISTOSMT_10000000020	02 BC G1 9103 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
5	HISTOSMT_10000000020	03 BC G1 10959 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
6	HISTOSMT_10000000020	04 BC G1 10783 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
7	HISTOSMT_10000000020	05 BC G1 9610 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
8	HISTOSMT_10000000020	06 BC G1 7967 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
9	HISTOSMT_10000000020	07 BC G1 9106 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
10	HISTOSMT_10000000020	07 BC G1 9106 4x 2.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
11	HISTOSMT_10000000020	08 BC G1 3124 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
12	HISTOSMT_10000000020	09 BC G1 6437 4x 1.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			
13	HISTOSMT_10000000020	09 BC G1 6437 4x 2.jpg	Tissue Biopsy	Grading of breast invasive ductal carcinomas			

Figure 8. Snapshot of example filled excel template file.

Figure 9. The filled excel template upload option at the bottom of IBIA page.

Step 4. Register New Experiments

In this step, the users can provide the experimental details for the images to be uploaded. First of all, “Select Study Accession.” After that, “Generate New Experiment Type ID” (a unique combination of experimental design summary, acquired images annotation description, and instrument details) and then mandatory fields should be filled (which include IBIA Sample IDs, Experimental design summary, Acquired images annotation description, Instrument Name, Instrument Type, Instrument Manufacturer, Instrument Model and Image Type). Thereafter, “Select from Study (Imaging Technology) Specific Fields” which needs to be added in the excel template (to be generated). The submitter can send a request to add more instruments details and/or study/imaging type-specific fields (if they are unavailable in the drop-down boxes; Figure 10; Annexure II).

IBIA: Indian Biological Images Archive

Welcome [User] Logout

MAIN

Home

Dashboard

Help: New Data Submission

New Data Submission (Step 1 to 10)

Register New Data

Step 1: New Project

Step 2: New Study

Step 3: New Samples

Step 4: New Experiments

Step 5: Upload Images

Step 6: Images Status

Step 7: Validation Status

Step 8: Upload Status

Step 9: Submit Finally

Step 10: Review Status

User Submitted Data Browse

Browse Registered Data

Data Download

Download Submitted Data

Browse IBIA Metadata List

IBIA Metadata List

Request IBIA Metadata List Update

Update IBIA Metadata

Data Summary Step 1: Register New Project Step 2: Register New Study Step 3: Register New Samples **Step 4: Register New Experiments** Step 5: Upload Images Step 6: Uploaded Images Status

Step 4: Register New Experiments

Note: Fields marked as * are mandatory

I. Generate Excel Template File (To fill Experiments details in batch mode):

HISTOSM_1000000134 Generate New Experiment Type ID

Please fill mandatory fields (Required for all imaging types):

HISTOSM_10000007265
HISTOSM_10000007266

Biopsy of breast tumor was done.

Histopathology images were annotated using the standard protocols given in the literature.

(Download List of Sample IDs) Word Count: 6 Word Count: 12

Instrument Name* Instrument Type* Instrument Manufacturer* Instrument Model* Image Type*

Microscope Compound Light Microscopi Nikon Nikon Eclipse CH-L Original

(Add instrument details, if not available in the list given above.)

Select from Study (Imaging Technology) Specific Fields: (Add more fields)

Camera Pixel Size
Camera Used to Capture Images
Effective Pixel Size
Images Magnification*
Images Resolution (in MP)
Light Source Used
Numerical Aperture
Objective Lens Specifications
Slide Scanner Instrument Used
Software Used to Capture Images

Generate Excel Template (See Example Generated Excel Template?)

II. Upload Data through Excel Template (to Save Experiments Data in IBIA portal):

Select Study Accession Browse... No file selected. Upload Excel Template Data (See Example Filled Excel Template?)

Click to request for addition of instruments details, if unavailable in the existing drop-down list above.

Figure 10. Snapshot of “Step 4: Register New Experiments” page on IBIA.

The generated excel sheet template looks like as depicted in the Figure 11. **The auto-generated content (in the generated excel template file) must not be removed/modified while filling the values.** Any changes in the auto-generated content of the excel template will make this erroneous and, thus, unacceptable by IBIA (during its upload after filling values). All the required excel sheet cells must be filled with the values, if the values are unavailable or missing for any cell, these must be filled with “N/A” value. The images path and MD5 Checksum values should be filled carefully because these are used to ensure the integrity of the images.

SOP-IBIA

A	B	C	D	E	F	G	H	I
ETID#16	ET#SM#SI#IFN#MD#122#123#10#9#8	1#1#1#1#1#2#2#1#1#1	1#1#1#1#1#2#2#1#1#1	MD5 Checksum*	Image type (Any Other Information*)	Staining Type*	Images Magnification*	Tissue
Experiment Type ID	Sample ID	Sample Identifier	Image File Name with Path*					
HISTOET 10000000020	HISTOSM 10000006341	01_BC_G1_9057_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006342	02_BC_G1_9103_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006343	03_BC_G1_10959_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006344	04_BC_G1_10783_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006345	05_BC_G1_9610_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006346	06_BC_G1_7967_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006347	07_BC_G1_9106_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006348	07_BC_G1_9106_4x_2.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006349	08_BC_G1_3124_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006350	09_BC_G1_6437_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006351	09_BC_G1_6437_4x_2.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006352	10_BC_G1_6178_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006353	10_BC_G1_6178_4x_2.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006354	11_BC_G1_2655_4x_1.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006355	11_BC_G1_2655_4x_2.jpg		Not known	Not known			
HISTOET 10000000020	HISTOSM 10000006356	12_BC_G1_9031_4x_1.jpg		Not known	Not known			

Figure 11. Snapshot of “Generated Excel Template” file.

Once the experiment details are filled in the generated excel template (Figure 12), users can proceed for the next step i.e., “II. Upload Data through Excel Template (to Save Experiments Data on IBIA portal)”, given at the bottom of the same page (Figure 13).

C	D	E	F	G	H	I
1#1#1#1#1#2#2#1#1#1	1#1#1#1#1#2#2#1#1#1	MD5 Checksum*	Image type (Any Other Information*)	Staining Type*	Images Magnification*	Tissue / Tun
Sample Identifier	Image File Name with Path*					
01_BC_G1_9057_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/5af885980d42231791c0b18213ab84f	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
02_BC_G1_9103_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/8ddc32bc66ba282ad71420912c732951	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
03_BC_G1_10959_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/0ff0e7bc7fc9b302be45a6efae5d4d	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
04_BC_G1_10783_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/3dfc446079ee8833cd719068f0e3d17c	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
05_BC_G1_9610_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/a3cd753028c3520e94990e715a2be9f	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
06_BC_G1_7967_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/3f92626045b7b2b41eeb11e0dda41a8d	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
07_BC_G1_9106_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/c1eab6bcc1c64c562d001060b8fa262b	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
07_BC_G1_9106_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/79ca9f033abb6d751386a19abb2929f3	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
08_BC_G1_3124_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/c54f0b8e9d9df51aab2af26b52145	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
09_BC_G1_6437_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/4b693f1c8996c6398c49e06855b7e7e	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
09_BC_G1_6437_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/33bf139e3a403f23999df4be588d3094	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
10_BC_G1_6178_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/7288ad9d169cf060cc5784780514203b	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
10_BC_G1_6178_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/9a9d9d0d77cf47c34d61caf14e8f92e0	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
11_BC_G1_2655_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/0bf2fddcf319f0ce80d23a72a364faa24	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
11_BC_G1_2655_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/e723616c10a130186ae16380bc36aa13	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
12_BC_G1_9031_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/64213be308dfeefad7df54c1cc244f0	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
13_BC_G1_5361_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/35127202574b72ac4ebaa8d55ca9f6d7	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
14_BC_G1_3657_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/f9f0b1bbd87e501e9d495610ee303281	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
14_BC_G1_3657_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/bb43428c61284bc696d53506cd0d976	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
15_BC_G1_5387_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/7184bec1f287260477c1af7704c4d61f	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
16_BC_G1_9964_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/f646cc12c71dc7bf5b4d20ce16861f12	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
17_BC_G1_10956_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/1e17d843d4f5e7aa123d425d7b67a938	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
18_BC_G1_11012_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/f01f1c238e9ead3c2272902e8eb23c0	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
19_BC_G1_11541_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/65b775264f1b5b5c1c16209d527aee	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
20_BC_G1_10260_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/452691b28aa96dcf52d0d04fa0e4a67d	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
21_BC_G1_10668_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/bded9a9ce6953ae4c7ac949e06bcf2e	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
21_BC_G1_10668_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/b9e72ead69c457229f2c1d52be10da	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
22_BC_G1_10874_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/1c137f0a6e9ae562aa05726b1d3ccc42	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
23_BC_G1_10874_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/f944190d9fa00870bfa84b9fcd716cd	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
24_BC_G1_6963_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/4fb54f5b7c9f6dce1122f99ab1d1de1	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
25_BC_G1_7563_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/e4e16f3bad62bbf0852add116effb9dc	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
26_BC_G1_6332_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/70b112cd072f1099e07bdcbb747f0c13	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
27_BC_G1_8584_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/18d54bb03ba26e0451bd691e7fc08639	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
28_BC_G1_8938_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/c296622b9288020926905ec7951fa639	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
29_BC_G1_8998_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/v237957a961d1b3b4db9325cbb11de2fd	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
29_BC_G1_8998_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/66bd45f6171d268bb8456226ae324dec	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
30_BC_G1_3124_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/dfb203a2b101931d1ee8913b1a77a43	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
31_BC_G1_3124_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/3598da3752457665ad68b6f189defc0	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
32_BC_G1_3124_4x_1.jpg	BC IDC Grades Final/BC IDC Grade 1/6ed545f08d918187e225f3a1416b396	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A
32_BC_G1_3124_4x_2.jpg	BC IDC Grades Final/BC IDC Grade 1/66475b44fb32f0e0732e0b3327463c32	Not known	N/A	Hematoxylin and eosin (H&E)	4x	N/A

Figure 12. Snapshot of example filled excel template file.

IBIA: Indian Biological Images Archive

Welcome [User] Logout

MAIN

- Home
- Dashboard
- Help: New Data Submission

New Data Submission (Step 1 to 10)

- Register New Data
 - Step 1: New Project
 - Step 2: New Study
 - Step 3: New Samples
 - Step 4: New Experiments**
 - Step 5: Upload Images
 - Step 6: Images Status
 - Step 7: Validation Status
 - Step 8: Upload Status
 - Step 9: Submit Finally
 - Step 10: Review Status

User Submitted Data Browse

- Browse Registered Data

Data Download

- Download Submitted Data

Browse IBIA Metadata List

- IBIA Metadata List

Request IBIA Metadata List Update

- Update IBIA Metadata

Data Summary Step 1: Register New Project Step 2: Register New Study Step 3: Register New Samples **Step 4: Register New Experiments** Step 5: Upload Images Step 6: Uploaded Images Status

Step 4: Register New Experiments

Note: Fields marked as * are mandatory

I. Generate Excel Template File (To fill Experiments details in batch mode):

Select Study Accession* Please Select / Generate Experiment Type ID*

Please fill mandatory fields (Required for all imaging types):

Enter IBIA Sample IDs* Experimental design summary* (Maximum 300 words) Acquired images annotation description (in brief)* (Maximum 300 words)

(Download List of Sample IDs) Word Count: 0 Word Count: 0

Instrument Name* Instrument Type* Instrument Manufacturer* Instrument Model* Image Type*

(Add instrument details, if not available in the list given above.)

Select from Study (Imaging Technology) Specific Fields: (Add more fields)

Please Select Accession to See Fields List

Generate Excel Template (See Example Generated Excel Template?)

II. Upload Data through Excel Template (to Save Experiments Data in IBIA portal):

HISTOS_1000000134 Browse... E_IBIAP_1000...0000134.xlsx Upload Excel Template Data (See Example Filled Excel Template?)

Figure 13. The filled excel template upload option at the bottom of IBIA page.

Step 5. Upload Images

In this step, the submitter can upload the images directories/folders (containing the image files in the unzipped format only) on the IBIA server through an FTP client (such as FileZilla) using FTP credentials (Figure 14).

After FTP login through a FTP client, the submitter will land in the IBIA server space assigned to him/her as shown in the Figure 14. The submitter must upload the images containing main directory/folder within the automatically created “Study Accession” directory/folder space only (on the IBIA storage). If users face any difficulty, they may contact the IBIA team at ibiasupport@ibdc.rcb.res.in, for any further assistance.

Thus, Step 1 to 5 involves various types of information upload by the submitter. Further steps i.e., Step 6 to 8 are related to validation of the submitted information.

Step 5: Upload Images

Dear User, your FTP credentials are given below, please use the credentials to upload the images directory/folder (in unzipped format only) on IBIA server through any FTP client such as FileZilla.

- [Click to Download FileZilla for Linux](#)
- [Click to Download FileZilla for Windows](#)

Host (Port: 21)	Username	Password
14.139.42.247	IBDCI_100019	

After FTP login through a FTP client, the submitter will land in the IBIA server space assigned to him/her as shown in the Figure given below. Thereafter, please check images upload status by click at:-> [Step 6: Uploaded Images Status](#)

The submitter must upload the images containing main directory/folder within the automatically created Study Accession directory/folder space on IBIA storage. After uploading the images, please check images upload status by click at:-> [Step 6: Uploaded Images Status](#)

For any further assistance, please feel free to contact us at ibiasupport@ibdc.rcb.res.in

Figure 14. Snapshot of “Step 5: Upload Images” page of IBIA.

Step 6. Uploaded Images Status

In this step submitter can check the images main directory/folder upload status on the IBIA server and the disk space utilized by the uploaded images directory/folder (during or after uploading the images directory/folder through FTP). After the complete upload of the images' main directory/folder, please proceed with the "Start Validation" (if not Validated), given at the bottom (Figure 15). This will automatically check the integrity and accuracy of the uploaded images.

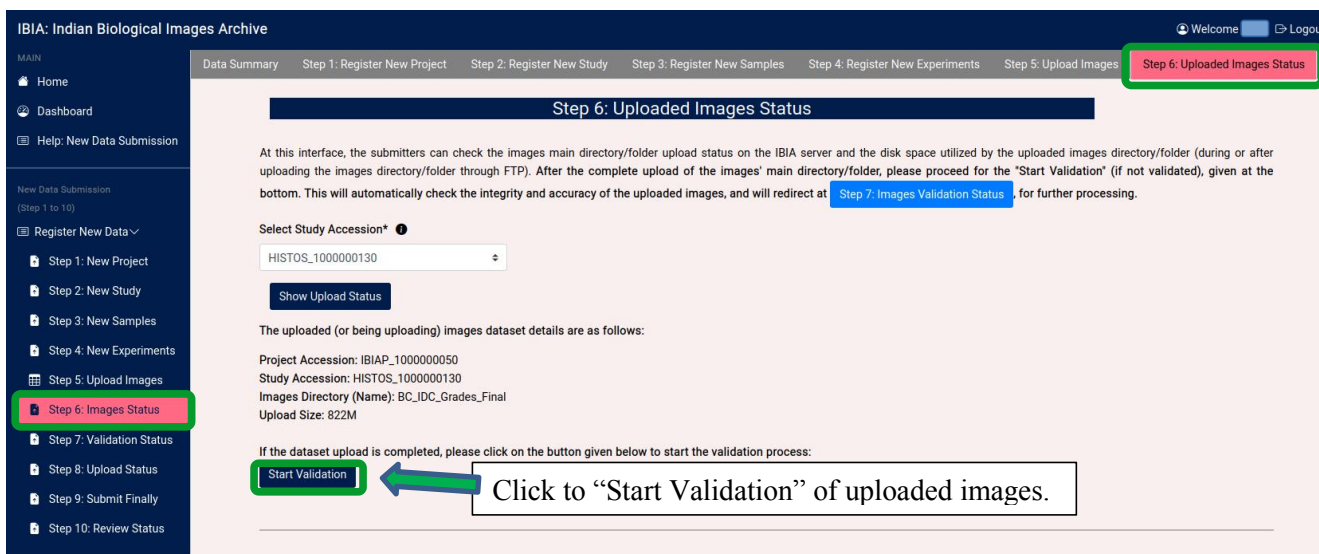


Figure 15. Snapshot of “Step 6: Uploaded Images Status” page of IBIA.

Step 7. Images Validation Status

In this step, the IBIA interface allows submitter to check the validation status of the uploaded image files. Each uploaded and validated image may have any one of the following three status: (i) Unmapped (if validation process did not start by the submitter after uploading the image directory/folder/file), (ii) Ok (if validated successfully during the validation process) and, (iii) Failed (if not validated correctly because of mismatch between user "uploaded md5 checksum" and "IBIA server calculated md5 checksum" values). In case of images with "Ok" status, nothing (regarding the validation process) is required from the submitter, however, for the "Unmapped" images, the validation process needs to be started through "Step 6". For "Failed" images, the reason for failing must be detected followed by the correction and re-validation until the status of these images become "Ok" (Figure 16).

IBIA: Indian Biological Images Archive

MAIN

Home Dashboard Help: New Data Submission

New Data Submission (Step 1 to 10)

Register New Data

Step 1: New Project Step 2: New Study Step 3: New Samples Step 4: New Experiments Step 5: Upload Images Step 6: Images Status **Step 7: Validation Status** Step 8: Upload Status Step 9: Submit Finally Step 10: Review Status

User Submitted Data Browse Browse Registered Data

Data Download Download Submitted Data

Browse IBIA Metadata List IBIA Metadata List

Request IBIA Metadata List Update Update IBIA Metadata

Data Summary **Step 7: Images Validation Status** Step 8: Overall Upload Status Step 9: Complete Submission Step 10: IBIA Review Status

Step 7: Images Validation Status

At this interface, the submitters can check their uploaded image files' validation status. Each uploaded and validated image may have any one of the following three status:

(i) **Unmapped** (if validation process did not start by the submitter after uploading the image directory/folder/file).
(ii) **Ok** (if validated successfully during the validation process).
(iii) **Failed** (if not validated correctly because of mismatch between user 'uploaded md5 checksum' and 'IBIA server calculated md5 checksum' values).

In case of images with "Ok" status, nothing (regarding the validation process) is required from the submitter; however, for the "Unmapped" images, the validation process needs to be started through [Step 6: Uploaded Images Status](#). For "Failed" images, the reason for failing must be detected followed by the correction (md5 checksum calculation and update and/or reload of the failed image files) and re-validation until the status of these images become "Ok".

Select Study ID*

Show Validation Status

The validation process has been started for Study ID: HISTOS_1000000130.

The overall validation results are as follows:

No. of Images Processed: 1
No. of Images Validated Successfully: 1
No. of Images with Failed Validation Status: 0
No. of Images with Unmapped Validation Status: 0

A detailed image-wise validation results are given below:

Show 10 entries Search:

Image	Image File (with path)	Image File Size (on IBIA)	User Uploaded MD5 Checksum	System Generated MD5 Checksum	Image File MD5 checksum Validation Status
	BC_IDC_Grades_Final/BC_IDC_Grade_1/4x/02_BC_G1_9103_4x_1.jpg	1.2M	8ddc32bc66ba282ad71420912c732951	8ddc32bc66ba282ad71420912c732951	Ok
	BC_IDC_Grades_Final/BC_IDC_Grade_1/4x/03_BC_G1_10959_4x_1.jpg	1.2M	0ff0e7bc7fc9b302bef45a6efee5dd2	0ff0e7bc7fc9b302bef45a6efee5dd2	Ok
	BC_IDC_Grades_Final/BC_IDC_Grade_1/4x/04_BC_G1_10783_4x_1.jpg	1.1M	3dfe446079ee8833cd719068f0e3d17c	3dfe446079ee8833cd719068f0e3d17c	Ok

Uploaded Image Files' MD5 checksum validation status

Figure 16. Snapshot of “Step 7: Images Validation Status” page of IBIA.

Step 8. Overall upload Status

The overall data upload status for submitted study records will be given in this step (Figure 17). Final submission of Study can be completed only when "Sample Status", "Experiments Status" and "Image Files Status" shows green background color. Thus, this interface provides the overall data upload status in a summarized manner to keep a track of the required data uploads, to complete submission in the next step.

IBIA: Indian Biological Images Archive

MAIN: Home, Dashboard, Help: New Data Submission

New Data Submission (Step 1 to 10): Register New Data, Step 1: New Project, Step 2: New Study, Step 3: New Samples, Step 4: New Experiments, Step 5: Upload Images, Step 6: Images Status, **Step 7: Validation Status**, **Step 8: Upload Status**, Step 9: Submit Finally, Step 10: Review Status

User Submitted Data Browse: Browse Registered Data

Data Download: Download Submitted Data

Browse IBIA Metadata List: IBIA Metadata List

Step 8: Overall Upload Status

The overall data upload status for submitted study records is given below in the table. Final submission of Study can be completed only when "No. of Registered Samples", "No. of Registered Experiments" and "Image Files MD5 checksum Validation Status" shows green background colour. Thus, this interface provides the overall data upload status in a summarized manner to keep a track of the required data uploads, to complete submission in the next step.

Search:

Project ID	Project Title	Study ID	Study Title	No. of Registered Samples	No. of Registered Experiments	Image Files MD5 checksum Validation Status
IBIAP_1000000042	Classify MRI images into four classes	MRIS_1000000083	Brain Tumor Classification (MRI)	174	174	Ok: 174
IBIAP_1000000050	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	HISTOS_1000000134	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	2	2	Ok: 2
IBIAP_1000000050	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	HISTOS_1000000130	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	922	922	Ok: 922
IBIAP_1000000041	CT images from cancer imaging archive with contrast and patient age	CTS_1000000082	The Cancer Genome Atlas Lung Adenocarcinoma Collection	100	100	Ok: 100
IBIAP_1000000060	PET scan images for diagnosis	PETS_1000000140	PET scan images for disease diagnosis	5	5	Ok: 5
IBIAP_1000000039	Reliable Tuberculosis Detection using Chest X-ray with Deep Learning, Segmentation and Visualization1	XRS_1000000081	Reliable Tuberculosis Detection using Chest X-ray with Deep Learning, Segmentation and Visualization	4200	4200	Ok: 4200
IBIAP_1000000059	Thyroid Ultrasound Images to Classify Benign and Malign Cases	USS_1000000139	Thyroid Ultrasound Images to Classify Benign and Malign Cases	134	134	Ok: 134

Showing 1 to 7 of 7 entries

Previous 1 Next

Figure 17. Snapshot of “Step 8: Overall Upload Status” page of IBIA.

Step 9. Complete Submission

This is the final step of the data submission process. If all the requirements for a complete submission are fulfilled for a Study, "Yes" button (under the column "Submit Finally") will appear for its final submission (Figure 18). After successful submission and getting approval from the IBIA review committee, the submitted study will be visible in the IBIA "Browse" list (Figure 19).

However, if all the requirements for a study are not met, "Incomplete Study" (under the column "Submit Finally") will appear until the submission requirements are completely fulfilled. In this case, you may like to contact IBIA team at ibiasupport@ibdc.rcb.res.in, for further help.

After successful submission of a study, an auto-generated confirmation email is sent to all the study authors/collaborators and IBIA Review Committee. The rejected study doesn't become available on IBIA.

IBIA: Indian Biological Images Archive Welcome amit Logout

MAIN

- Home
- Dashboard
- Help: New Data Submission

New Data Submission (Step 1 to 10)

- Register New Data
- Step 1: New Project
- Step 2: New Study
- Step 3: New Samples
- Step 4: New Experiments
- Step 5: Upload Images
- Step 6: Images Status
- Step 7: Validation Status
- Step 8: Upload Status
- Step 9: Submit Finally**
- Step 10: Review Status

User Submitted Data Browse

Data Summary Step 7: Images Validation Status Step 8: Overall Upload Status **Step 9: Complete Submission** Step 10: IBIA Review Status

Step 9: Complete Submission

This is the final step of the data submission process. If all the requirements to complete the submission are fulfilled for a Study, "Yes" button (under the column "Submit Finally") will appear for its final submission. After successful submission and getting approval from the IBIA review committee (the [IBIA Review Status](#) can be seen at the next step), the submitted study will be visible in the "Browse" list. However, if all the requirements for a study are not met, "Incomplete Study" (under the column "Submit Finally") will appear until the submission requirements are completely fulfilled. In this case, you may like to contact IBIA team at ibiasupport@ibdc.rcb.res.in, for further help.

Search:

Study ID	Study Title	Release Date	Submission Status	Submit Finally
MRIS_1000000083	Brain Tumor Classification (MRI)	April 20, 2024	Submitted	Already Submitted
HISTOS_1000000134	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	June 30, 2024	Not Submitted	Yes
HISTOS_1000000130	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	June 30, 2024	Not Submitted	Yes
PETS_1000000140	PET scan images for disease diagnosis	July 15, 2024	Submitted	Already Submitted
XRS_1000000081	Reliable Tuberculosis Detection using Chest X-ray with Deep Learning, Segmentation and Visualization	Oct. 15, 2020	Submitted	Already Submitted
CTS_1000000082	The Cancer Genome Atlas Lung Adenocarcinoma Collection	April 20, 2024	Submitted	Already Submitted
USS_1000000139	Thyroid Ultrasound Images to Classify Benign and Malign Cases	July 11, 2024	Submitted	Already Submitted

Showing 1 to 7 of 7 entries

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Figure 18. Snapshot of “Step 9: Complete Submission” page of IBIA.

Step 10. IBIA Review Status

Finally, submitted study passes through various quality, suitability, and integrity checks of IBIA to match the archive standards. Thus, the decision on a finally submitted study (approval/rejection) is made within seven working days by the IBIA Review Committee (Figure 19). After the decision, an approved study will be available in the IBIA's "Study Browse" list and an email will be sent immediately to the submitter about the review decision (approval/rejection) for the study. The studies with "Open Access" licence type will be available for the public use (after the "Study Release Date"). The screenshots of an "Open Access" study approved by IBIA Review Committee are depicted in Figures 20-24.

IBIA: Indian Biological Images Archive

Welcome Logout

MAIN

Home

Dashboard

Help: New Data Submission

New Data Submission (Step 1 to 10)

Register New Data

Step 1: New Project

Step 2: New Study

Step 3: New Samples

Step 4: New Experiments

Step 5: Upload Images

Step 6: Images Status

Step 7: Validation Status

Step 8: Upload Status

Step 9: Submit Finally

Step 10: Review Status

User Submitted Data Browse

Browse Registered Data

Data Download

Download Submitted Data

Browse IBIA Metadata List

IBIA Metadata List

Data Summary Step 7: Images Validation Status Step 8: Overall Upload Status Step 9: Complete Submission **Step 10: IBIA Review Status**

Step 10: IBIA Review Status

Finally, submitted study passes through various quality, suitability, and integrity checks of IBIA to match the archive standards. Thus, the decision on a finally submitted study (approval/rejection) is made within seven working days by the IBIA review committee. After the decision, an approved study will be available in the IBIA's "Study Browse" list and an email will be sent immediately to the submitters about the review decision (approval/rejection) for the study. The studies with "Open Access" licence type will be available for the public use (after the "Study Release Date"). The study records submitted by you for the IBIA Review Committee consideration are as follows:

Search:

Study Accession	Study Title	Release Date	Review Status	IBIA Review Committee Remarks	Date of Submission
MRIS_1000000083	Brain Tumor Classification (MRI)	April 20, 2024	Approved	This study will be useful for scientific community in future.	Apr 16, 2024
HISTOS_1000000130	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	June 30, 2024	Approved	Very useful study for IBDC.	May 31, 2024
HISTOS_1000000134	Collection of histopathological image dataset for grading breast invasive ductal carcinomas	June 30, 2024	Approved	Go ahead and submit the study on IBIA.	Jun 19, 2024
PETS_1000000140	PET scan images for disease diagnosis	July 15, 2024	Approved	This study will be useful for scientific community in future.	Jul 16, 2024
XRS_1000000081	Reliable Tuberculosis Detection using Chest X-ray with Deep Learning, Segmentation and Visualization	Oct. 15, 2020	Approved		Apr 08, 2024
XRS_1000000135	test study 53	June 21, 2024	Approved	Good study, please go ahead with submission process.	Jun 20, 2024
CTS_1000000082	The Cancer Genome Atlas Lung Adenocarcinoma Collection	April 20, 2024	Approved		Apr 16, 2024
USS_1000000139	Thyroid Ultrasound Images to Classify Benign and Malign Cases	July 11, 2024	Approved	Go ahead	Jul 12, 2024

Showing 1 to 8 of 8 entries

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Figure 19. Snapshot of “Step 10: IBIA Review Status” page of IBIA.

Sample IBIA Record

A study approved by IBIA Review Committee, will consist of mainly five sections *viz.*

(i) Project (includes Authors/Collaborators), (ii) Study, (iii) Sample(s), (iv) Experiment(s), and (v) Image Files, as depicted in Figures 20-24.

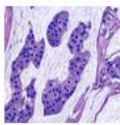
Study Complete Details	
Project	
Project Accession:	IBIAP_1000000050
Title:	Collection of histopathological image dataset for grading breast invasive ductal carcinomas
Representative Image:	
Description:	In this dataset, a histopathological microscopy image dataset of 922 images related to 124 patients with IDC is introduced. This dataset is published and accessible through web via: http://databiox.com . What makes this dataset distinct from the similar ones is that it contains equal number of specimens from each three grades of IDC, which led to around 50 specimens for each grade.
Publications:	https://data.mendeley.com/datasets/w7jcx7gj6/1
Funding agency:	N/A
Grant Number:	N/A
Ethics Statement:	Download
Any Other Information :	N/A
Additional File:	N/A
Acknowledgments:	N/A
Authors/Collaborators	
Study	
Sample(s)	
Experiment(s)	
Image Files	

Figure 20. Screenshot of an "Open Access" study approved by IBIA Review Committee.

Authors/Collaborators					
Sr.No	First name	Last name	Email	Organization	Designation
1	Hamidreza	Bolhasani	avi@gmail.com	N/A	Unspecified

Study	
Study Accession:	HISTOS_1000000134
Title:	Collection of histopathological image dataset for grading breast invasive ductal carcinomas
Imaging Type:	Histopathology (HISTO)
Imaging Sub-type:	Diagnostic Pathology
Summary:	In this dataset, a histopathological microscopy image dataset of 922 images related to 124 patients with IDC is introduced. This dataset is published and accessible through web via: http://databio.com . What makes this dataset distinct from the similar ones is that it contains equal number of specimens from each three grades of IDC, which led to around 50 specimens for each grade.
Keywords:	IDC, histopathological microscopy
Additional / Any Other Information:	N/A
Release Date:	June 30, 2024
Access Licence Type:	Open Access

Figure 21. Screenshot of an "Open Access" study approved by IBIA Review Committee.

Sample(s)								
Table 1. The sample types registered under this study are as follows:								
Project Accession	Study Accession	Sample Type ID	Organism	Taxon ID	Biological Entity	Laterality	Source Tissue	Source Cell
IBIAP_1000000050	HISTOS_1000000134	HISTOSMT_1000000022	Homo sapiens	9606	Breast	Not Applicable	Breast tissue	Breast cell
Table 2. The samples registered under this study are as follows:								
Show 10 entries		Search:						
Sample Type ID	Sample ID	Method used for Sample Collection	Cell Phenotype Studied					
HISTOSMT_1000000022	HISTOSM_10000007265	Biopsy	Breast cell					
HISTOSMT_1000000022	HISTOSM_10000007266	Biopsy	Breast cell					
Showing 1 to 2 of 2 entries				Previous 1 Next				

Figure 22. Screenshot of an "Open Access" study approved by IBIA Review Committee.

Experiment(s)

Table 3. The experiment types registered under this study are as follows:

Project Accession	Study Accession	Experiment Type ID	Instrument Name	Instrument Type	Manufacturer	Model
IBIAP_1000000050	HISTOS_1000000134	HISTOET_10000000021	Microscope	Compound Light Microscope	Nikon	Nikon Ci-L

Experimental Design Summary (HISTOET_10000000021)

Biopsy of breast tumor

Acquired Images Annotation Description (HISTOET_10000000021)

Histopathology images

Table 4. The experiments registered under this study are as follows:

Show entries Search:

Sample ID	Experiment Type ID	Experiment ID	Image type (Original / Derived / Unknown)	Any Other Information	Staining Type	Images Magnification	Tissue / Tumor Fixative Used
HISTOSM_10000007265	HISTOET_10000000021	HISTOE_10000007015	Original	N/A	N/A	N/A	N/A
HISTOSM_10000007266	HISTOET_10000000021	HISTOE_10000007016	Original	N/A	N/A	N/A	N/A

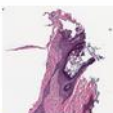
Showing 1 to 2 of 2 entries Previous **1** Next

Image Files

Figure 23. Screenshot of an "Open Access" study approved by IBIA Review Committee.

Image Files

Show entries Search:

Experiment ID	Image File Name (with path)	Image Preview	Image Size
HISTOE_10000007015	archive_4_MRI/Training/41528.svs	 Download Image	433M
HISTOE_10000007016	archive_4_MRI/Training/41530.svs	 Download Image	1.9M

Showing 1 to 2 of 2 entries Previous **1** Next

Figure 24. Screenshot of an "Open Access" study approved by IBIA Review Committee.

Important Notes

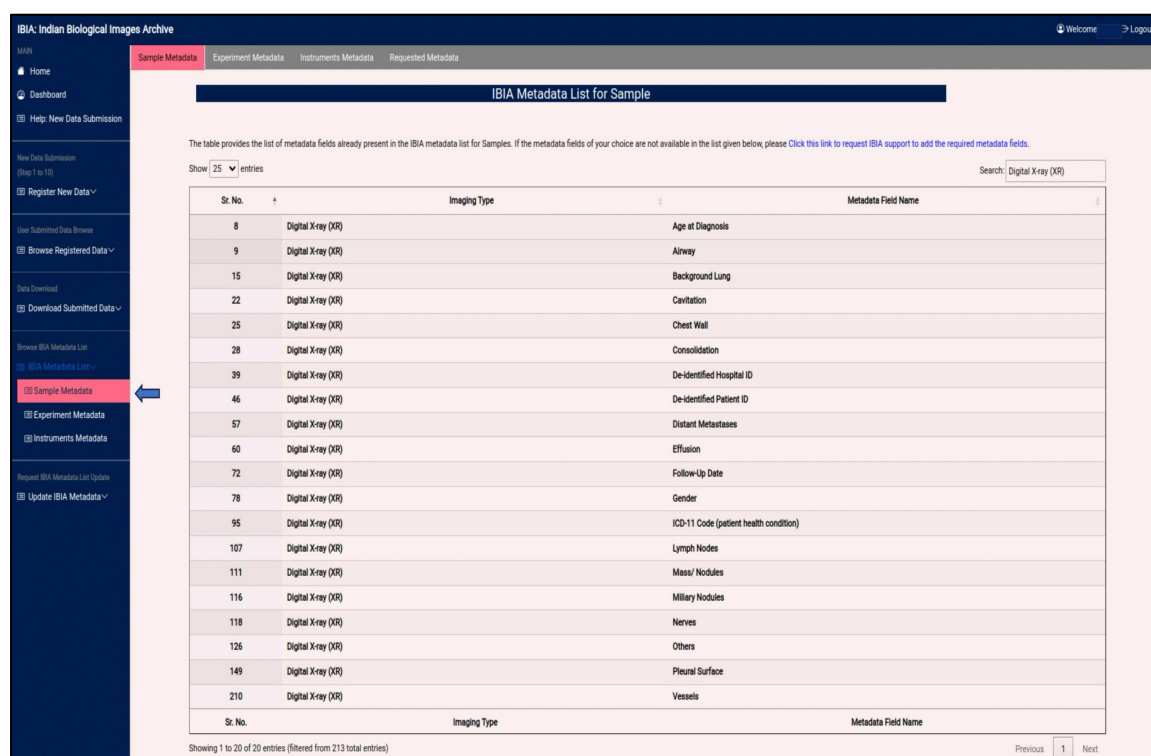
- If “Imaging Type” of your interest is unavailable on IBIA, please add the Samples and Experiments metadata fields through the portal after login. This will automatically appear after the approval of respective metadata fields by IBIA database administrator.
- Study submissions at IBIA will be completed only after getting approval from the IBIA Review Committee.
- The asterisk marked fields are mandatory to be filled.
- Do not edit or change the format of the IBIA generated Excel template files.
- Do not leave any cell blank in excel file templates. Alternately use “N/A” in place of missing or blank values in your data.
- In case of any assistance, please feel free to contact us at ibiasupport@ibdc.rcb.res.in

Annexures

Annexure I

Browse IBIA Metadata List

Submitters can visualize the list of metadata available on IBIA by clicking on “IBIA Metadata List”. In the dropdown list “Sample Metadata” (Figure 1.0) can be seen where column “Imaging Type” along with their corresponding “Metadata Field Name” column (Figure S1).



IBIA: Indian Biological Images Archive

Welcome | Logout

Sample Metadata | Experiment Metadata | Instruments Metadata | Requested Metadata

IBIA Metadata List for Sample

The table provides the list of metadata fields already present in the IBIA metadata list for Samples. If the metadata fields of your choice are not available in the list given below, please [Click this link to request IBIA support to add the required metadata fields.](#)

Show 25 entries

Search: Digital X-ray (XR)

Sr. No.	Imaging Type	Metadata Field Name
8	Digital X-ray (XR)	Age at Diagnosis
9	Digital X-ray (XR)	Airway
15	Digital X-ray (XR)	Background Lung
22	Digital X-ray (XR)	Cavitation
25	Digital X-ray (XR)	Chest Wall
28	Digital X-ray (XR)	Consolidation
39	Digital X-ray (XR)	De-identified Hospital ID
46	Digital X-ray (XR)	De-identified Patient ID
57	Digital X-ray (XR)	Distant Metastases
60	Digital X-ray (XR)	Effusion
72	Digital X-ray (XR)	Follow-Up Date
78	Digital X-ray (XR)	Gender
95	Digital X-ray (XR)	ICD-11 Code (patient health condition)
107	Digital X-ray (XR)	Lymph Nodes
111	Digital X-ray (XR)	Mass/ Nodules
116	Digital X-ray (XR)	Miliary Nodules
118	Digital X-ray (XR)	Nerves
126	Digital X-ray (XR)	Others
149	Digital X-ray (XR)	Pleural Surface
210	Digital X-ray (XR)	Vessels

Showing 1 to 20 of 20 entries (filtered from 213 total entries)

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Figure S1. Snapshot of “Sample Metadata” of IBIA Metadata List.

Likewise, “Experiment Metadata” (Figure S2) contain the two column “Imaging Type” and “Metadata Field Name” where experimental aspects of the instruments have been listed.

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Sample Metadata **Experiment Metadata** Instruments Metadata Requested Metadata

IBIA Metadata List for Experiment

The table provides the list of metadata fields already present in the IBIA metadata list for Experiments. If the metadata fields of your choice are not available in the list given below, please [Click this link](#) to request IBIA support to add the required metadata fields.

Show 10 entries Search: X

St. No.	Imaging Type	Metadata Field Name
1	Magnetic Resonance Imaging (MRI)	Acquisition matrix
10	Histopathology (HISTO)	Camera Pixel Size
15	Digital X-ray (XR)	Contrast / Bolus administration route
18	Digital X-ray (XR)	Contrast / Bolus agent used
20	Digital X-ray (XR)	Contrast / Bolus Ingredient
25	Digital X-ray (XR)	Detector type
30	Histopathology (HISTO)	Effective Pixel Size
31	Microscopy (MICRO)	Excitation wavelength
66	Computed Tomography (CT)	Matrix size
80	Microscopy (MICRO)	Pixel dwell time

Showing 1 to 10 of 30 entries (filtered from 136 total entries)

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Figure S2. Snapshot of “Experiment Metadata” of IBIA Metadata List.

The third and the last option in the “IBIA Metadata List” is “Instruments Metadata” (Figure S3) where seven column can be seen that contain details about the instruments e.g; Instrument Name, Instrument Type, Instrument Manufacturer, Instrument Model, IBIA Status and IBIA Remarks along with Imaging Type.

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Sample Metadata Experiment Metadata **Instruments Metadata** Requested Metadata

IBIA Metadata List for Instruments

The table provides the list of Instruments' metadata fields already present in the IBIA metadata list and user requested new metadata fields with their IBIA status. If the metadata fields of your choice are not available in the list given below, please [Click this link](#) to request IBIA support to add the required metadata fields.

Show 10 entries Search:

St. No.	Imaging Type	Instrument Name	Instrument Type	Instrument Manufacturer	Instrument Model	IBIA Status	IBIA Remarks
1409	Digital X-ray (XR)	X-ray Machine	Digital radiography systems	GE Healthcare	GE XR200	Approved	Remarks
1408	Digital X-ray (XR)	X-ray Machine	Fixed X-ray	GE Healthcare	GE XR400	Approved	Remarks
1407	Digital X-ray (XR)	X-ray Machine	Analog X-ray systems	RAJ BIOSIS PRIVATE LIMITED	RBX-1000	Approved	Remarks
1406	Digital X-ray (XR)	X-ray Machine	Digital radiography systems	RAJ BIOSIS PRIVATE LIMITED	RBX-2000	Approved	Remarks
1405	Digital X-ray (XR)	X-ray Machine	Portable X-ray	RAJ BIOSIS PRIVATE LIMITED	RBX-3000	Approved	Remarks
1404	Digital X-ray (XR)	X-ray Machine	Digital fluoroscopy systems	GE Healthcare	GE XR500	Approved	Remarks
1403	Digital X-ray (XR)	X-ray Machine	Fixed X-ray	RAJ BIOSIS PRIVATE LIMITED	RBX-4000	Approved	Remarks
1402	Digital X-ray (XR)	X-ray Machine	Digital fluoroscopy systems	RAJ BIOSIS PRIVATE LIMITED	RBX-5000	Approved	Remarks
1401	Digital X-ray (XR)	X-ray Machine	Analog X-ray systems	Adonis Medical Systems PRIVATE LIMITED	AMS-XR100	Approved	Remarks
1400	Digital X-ray (XR)	X-ray Machine	Digital radiography systems	Adonis Medical Systems PRIVATE LIMITED	AMS-XR200	Approved	Remarks

Showing 1 to 10 of 1,409 entries

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Figure S3. Snapshot of “Instrument Metadata” of IBIA Metadata List.

Annexure II

Request IBIA Metadata List Update

This step provide an option to include the missing or new metadata fields inside the IBIA. A submitter can request to include the required metadata fields (missing in the IBIA current list) via clicking on the “Sample/Experiment” option depicted through an arrow mark in Figure S4. The user will have to choose the required imaging technology from the “Select Imaging Type” dropdown list. After that select Sample or Experiment from “Select Metadata Category” dropdown list then enter the name of the required metadata in “Metadata Field Name”.

Submitter may request multiple metadata fields at one go using “Add More” option or may go for bulk metadata upload via “Sample/Experiment (Bulk)” option (Figure S5) and click on the “Click to Download Excel Template File” then fill the downloaded excel template file and upload it using “Choose file” button for bulk metadata upload request (Figure S6). Submitter may remove the unnecessary entry by using “Remove” button. At the end click on the “Submit” button to send the final request. The submitter request will be reviewed (within a week) and included in IBIA Metadata list, only after the IBIA Review Committee approve it.

IBIA: Indian Biological Images Archive

MAIN

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- Help: New Data Submission

New Data Submission (Step 1 to 10)

- Register New Data ✓

User Submitted Data Browse

- Browse Registered Data ✓

Data Download

- Download Submitted Data ✓

Browse IBIA Metadata List

- IBIA Metadata List ✓

Request IBIA Metadata List Update

- Update IBIA Metadata ✓
- Requested Metadata
- Sample / Experiment** ←
- Sample / Experiment (Bulk)
- Instruments Metadata
- Instruments Metadata (Bulk)

Form for submitting a request (to the IBIA database administrator) to add more metadata fields in Sample/Experiment

Please fill the details in the form given below and submit for further processing by the IBIA database administrator. The approval process may take upto one week to complete. This form is suitable to add upto 10 fields simultaneously. However, to add more than 10 fields simultaneously, you may like to submit the request through [bulk addition request form](#).

Select Imaging Type*

Digital X-ray (XR)

(Please select the Imaging Type to which your metadata belongs.)

Select Metadata Category*

Sample

(Please select the category to which your metadata belongs.)

Metadata Field Name*

Chest Wall

(Please enter the name of the metadata field which needs to be included in the IBIA metadata field list, e.g., BMI, Hypertension, Diabetes, Smoking status, Plant growth phase, etc.)

Add More Remove

Submit

Figure S4. Snapshot of “Sample/Experiment” to update IBIA Metadata list.

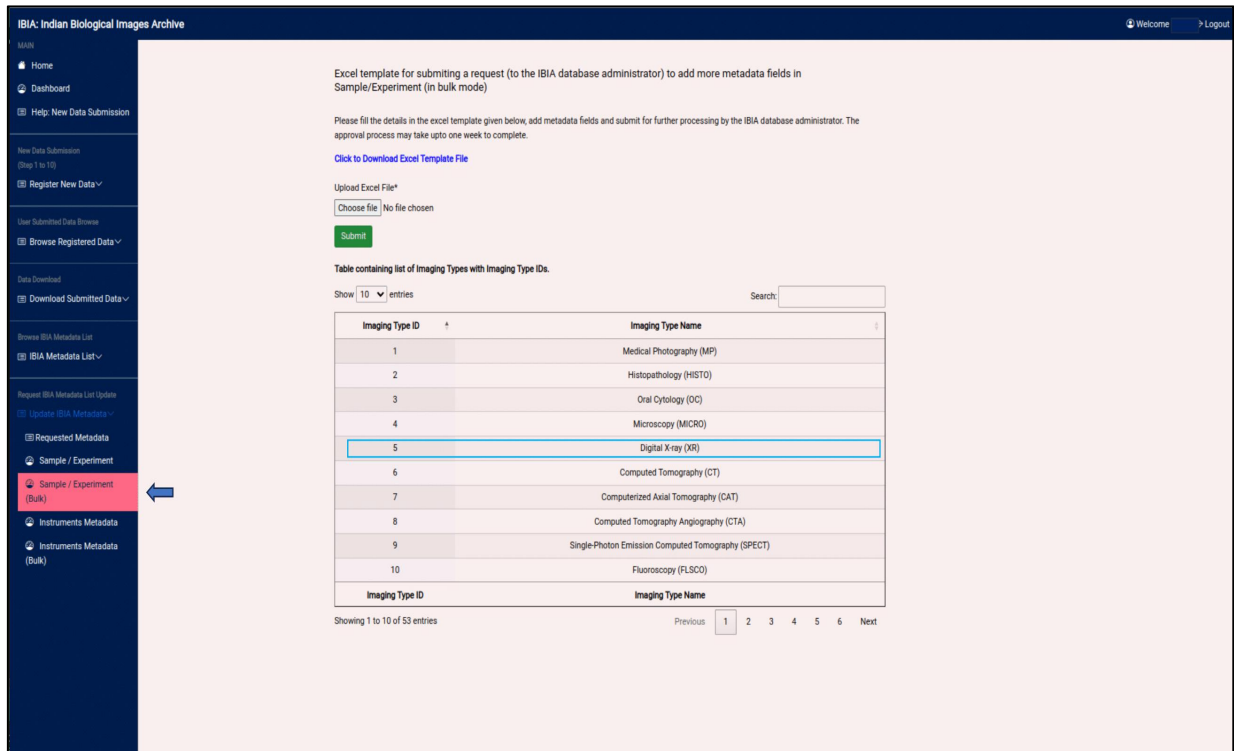


Figure 5. Snapshot of “Sample/Experiment (Bulk)” to update IBIA Metadata list.

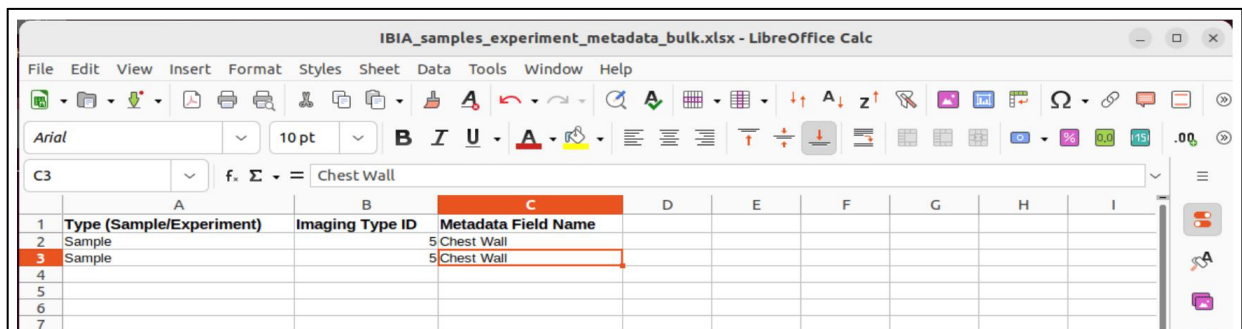


Figure S6. Snapshot of “Excel Template File” for Sample/Experiment Metadata (Bulk) upload to update IBIA Metadata list in batch mode.

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Welcome [User] Logout

MAIN

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- Help: New Data Submission

New Data Submission (Step 1 to 10)

- Register New Data

User Submitted Data Browse

- Browse Registered Data

Data Download

- Download Submitted Data

Browse IBIA Metadata List

- IBIA Metadata List

Request IBIA Metadata List Update

- Update IBIA Metadata
- Requested Metadata
- Sample / Experiment
- Sample / Experiment (Bulk)
- Instruments Metadata**
- Instruments Metadata (Bulk)

Form for submitting a request (to the IBIA database administrator) to add more instruments information

Please fill the instrument(s) details in the form given below and submit for further processing by the IBIA database administrator. The approval process may take upto one week to complete. This form is suitable to add a limited number of instruments (say less than 5 instruments) one-by-one. However, to add more than five instruments simultaneously, you may like to submit the request through [bulk addition request form](#).

Select Imaging Type*

Digital X-ray (XR)

(Please select the Imaging Type for which you want to add instrument details.)

Instrument Name*

X-ray Machine

(Please enter the Instrument Name which needs to be included in the IBIA Instruments list. e.g., MRI Machine, PET Machine, N/A, etc.)

Instrument Type*

Portable X-ray

(Please enter the Instrument Type which needs to be included in the IBIA Instruments list. e.g., Open-Bore MRI Machine, Closed-Bore MRI Machine, N/A, etc.)

Instrument Manufacturer*

GE Healthcare

(Please enter the Instrument Manufacturer Name which needs to be included in the IBIA Instruments list. e.g., Lenovo, Hitachi Healthcare, Philips Healthcare, Leica, Zeiss, N/A, etc.)

Instrument Model*

GE-XR300

(Please enter the Instrument Model Name which needs to be included in the IBIA Instruments list. e.g., Zeiss LSM 800, Olympus VS120, Nikon Ti2, Canon Apilo 500, N/A, etc.)

Submit

Figure S7. Snapshot of “Instrument Metadata” to update IBIA Instruments Metadata list.

After submitting a request to add metadata into Sample and Experiment, the submitter may also request to include metadata related to instruments via “Instruments Metadata” option (Figure S7). To submit the request for inclusion of Instruments metadata (in batch mode), the submitter may choose “Instruments Metadata (Bulk)”. Thereafter, “Click to Download Excel Template File” then fill the downloaded excel template file and upload it using “Choose file” button (Figure S8-S9). However, the requested metadata, if valid, will be available on IBIA after getting approval from the IBIA database administrator (within a week of the request to include).

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MAIN

- Home
- Dashboard
- Help: New Data Submission

New Data Submission
(Step 1 to 10)

- Register New Data

User Submitted Data Browse

- Browse Registered Data

Data Download

- Download Submitted Data

Browse IBIA Metadata List

- IBIA Metadata List

Request IBIA Metadata List Update

- Update IBIA Metadata

- Requested Metadata
- Sample / Experiment
- Sample / Experiment (Bulk)
- Instruments Metadata
- Instruments Metadata (Bulk)**

Excel template for submitting a request (to the IBIA database administrator) to add more instruments information (in bulk mode)

Please fill the details in the excel template given below, add metadata fields and submit for further processing by the IBIA database administrator. The approval process may take upto one week to complete.

[Click to Download Excel Template File](#)

Upload Excel File*

Choose file | No file chosen

Submit

Table containing list of Imaging Types with Imaging Type IDs.

Show 10 entries

Search:

Imaging Type ID	Imaging Type Name
1	Medical Photography (MP)
2	Histopathology (HISTO)
3	Oral Cytology (OC)
4	Microscopy (MICRO)
5	Digital X-ray (XR)
6	Computed Tomography (CT)
7	Computerized Axial Tomography (CAT)
8	Computed Tomography Angiography (CTA)
9	Single-Photon Emission Computed Tomography (SPECT)
10	Fluoroscopy (FLSCO)

Showing 1 to 10 of 53 entries

Previous 1 2 3 4 5 6 Next

Figure S8. Snapshot of “Instrument Metadata (Bulk)” to update IBIA Instruments Metadata list in batch mode.

	A	B	C	D	E	F	G
	Imaging Type ID	Instrument Name	Instrument Type	Instrument Manufacturer	Instrument Model		
2	5	Digital X-ray (XR)	Portable X-ray	RAJ BIOSIS PRIVATE LIMITED	RBX-3000		
3	5	Digital X-ray (XR)	Portable X-ray	GE Healthcare	GE-XR300		
4							
5							
6							
7							
8							

Figure S9. Snapshot of the filled “Excel Template File” to request the addition of Instruments Metadata on IBIA in the batch mode.