

Genome Sequence Archive (GSA) Quick Start Guide

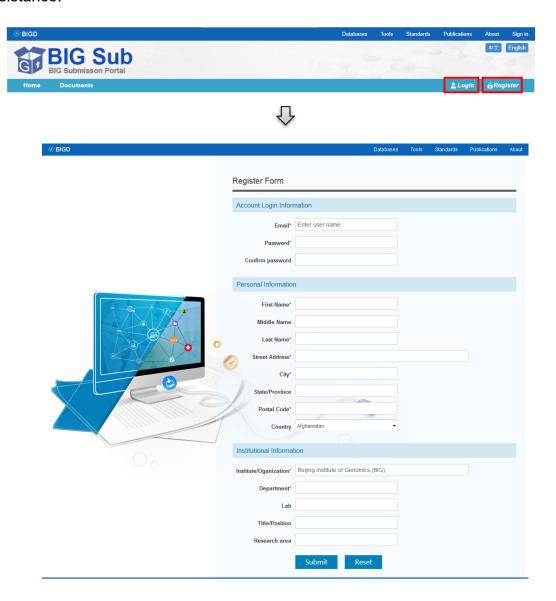
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Introduction

The Genome Sequence Archive (GSA) is a data repository for archiving raw sequence reads. It accepts data submissions from all over the world and provides free access to all publicly available data for global scientific communities.

Log in to the BIG Submission Portal

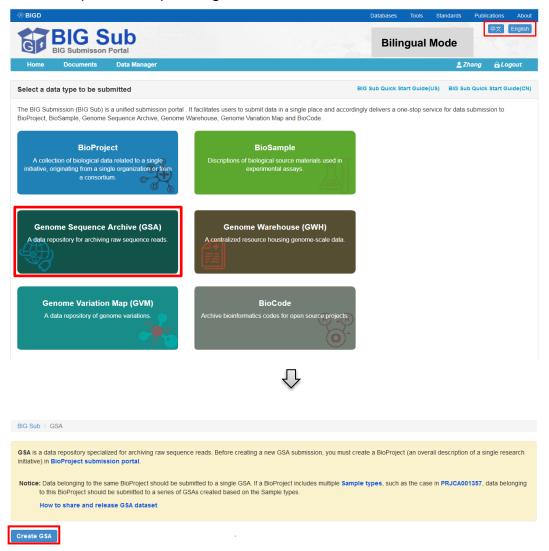
Login to the BIG Submission Portal (BIG Sub, https://bigd.big.ac.cn/gsub/): Click the 'login' tab, then login. If you do not have an account yet, click the 'Register' tab to create one. If you have any problems about your account, please contact bigd-admin@big.ac.cn for assistance.



Notice: After logged in to the BIG Submission Portal, you can follow the steps below to finish the submission.

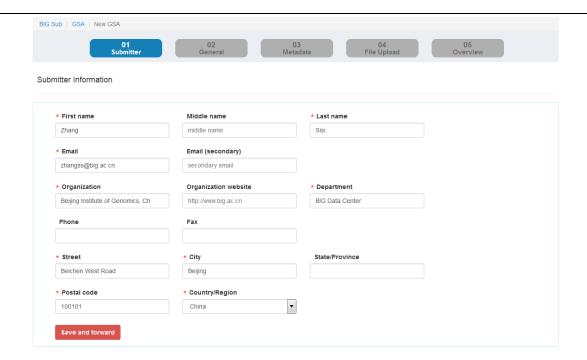
Create new GSA Submission

The BIG Sub provides a browser-based user interface for submitting GSA metadata as well as various options for uploading data files.



The page tabs presented by the Submission wizard are:

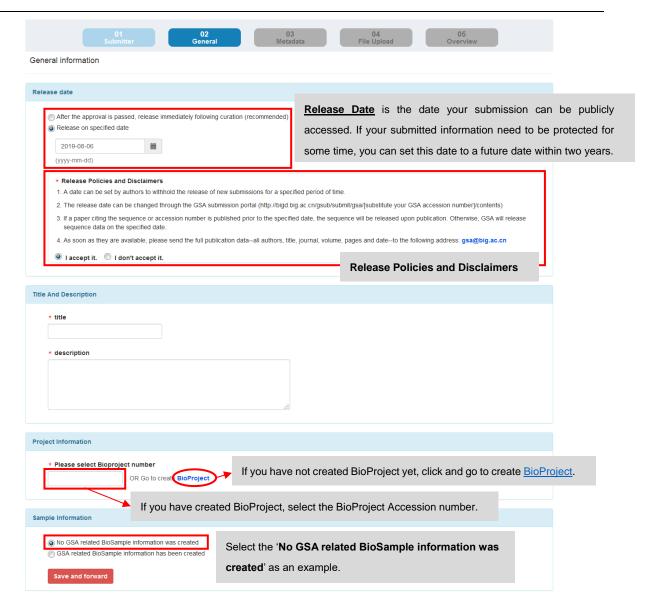
Submitter – the name and email information are auto-filled if you have logged in, and
in this case, the system is able to identify the person who is entering the data in the
form.



• General information – this page collects general descriptive information about the GSA's Release Date, Title and Description, Project Information and Sample Information. This step links your existing project (PRJCA#) or samples (SAMC#) with your GSA data.

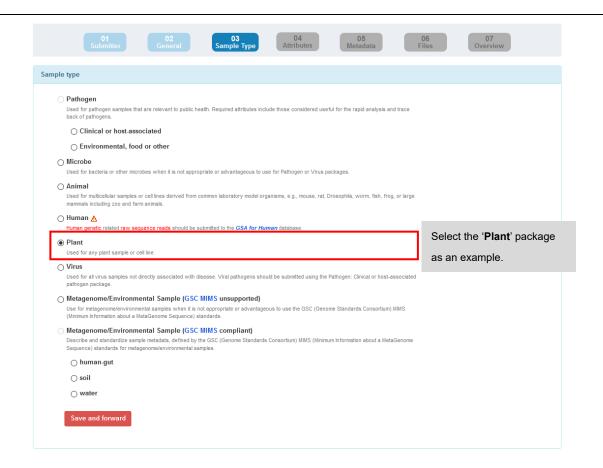
Notice: If you have already created GSA related Biological Sample(s) in the <u>BioSample</u> <u>database</u>, please select the 'GSA related BioSample information has been created'. Then follow the wizard to complete the submission.

If you have not created GSA related Biological Sample(s), please select the 'No GSA related BioSample information was created'. Then follow the wizard to complete the submission.



Notice: If you select 'Release immediately following curation', the records will be released after the approval passed. If you select 'Release on a specified date', the GSA will be released on the date you specify.

• **Sample Type** –this page provides a preview of the sample type that submitter is asked to supply during the submission process.



Notice: If you determine that your human data must be submitted via **GSA Human database**, please delete your current submission and contact us at gsa@big.ac.cn.

- Attributes this page allows you to upload attributes information about multiple samples in a single table. To finish the procedure, you should:
 - Download the BioSample submission template table Plant.us.xlsx. For column explanations and examples, please see the e.g.Plant.us.xlsx. For more information, please see the Help.

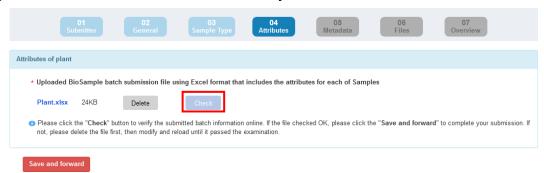
Notice: Downloading new template ensures that you get the most current and correct version.



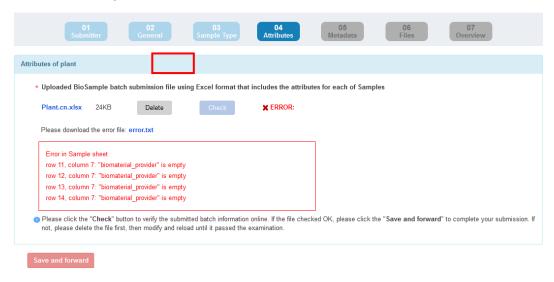
2) Fill in the template table and double-check it before uploading. Use the Selection box to select your completed table.



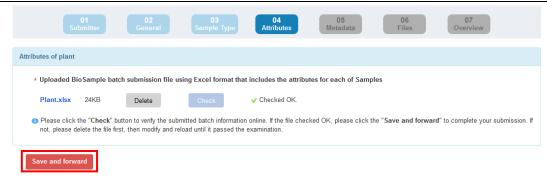
3) Then click the 'Check' button to verify the submitted batch information online.



4) If the file has passed the examination, please click the 'Save and forward' button to complete your submission. If not, please click the 'Delete' button. You should edit and re-upload the file until it is correct.

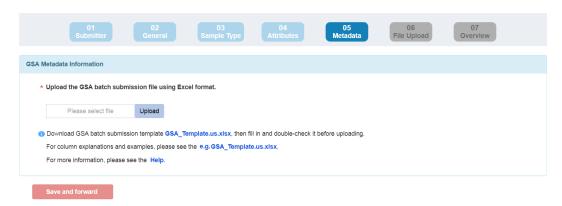






- Metadata this page allows you to upload metadata information about the raw sequences, including Experiments and Runs. To finish the procedure, you should:
 - Download the GSA submission template table GSA_Template.cn.xlsx. For column explanations and examples, please see the e.g.GSA_Template.cn.xlsx.
 For more information, please see the Help.

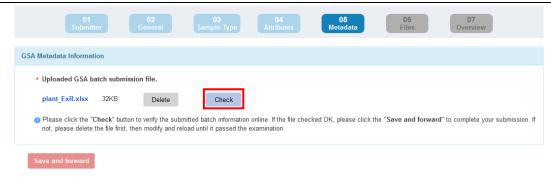
Notice: Downloading new template ensures that you get the most current and correct version



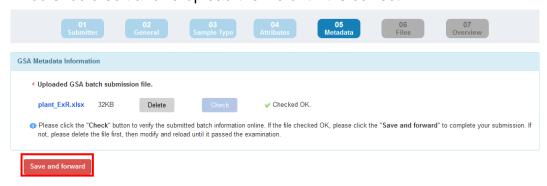
2) Fill in the template table and double-check it before uploading. Use the Selection box to select your completed table.



3) Then click the 'Check' button to verify the submitted batch information online.



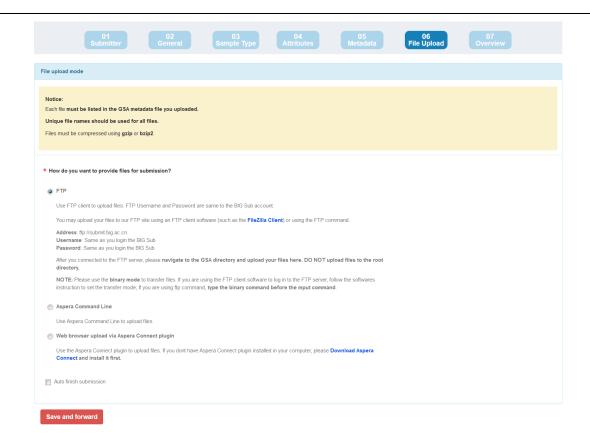
4) If the file has passed the examination, please click the 'Save and forward' button to go to the next step of the submission. If not, please click the 'Delete' button. You should edit and re-upload the file until it is correct.



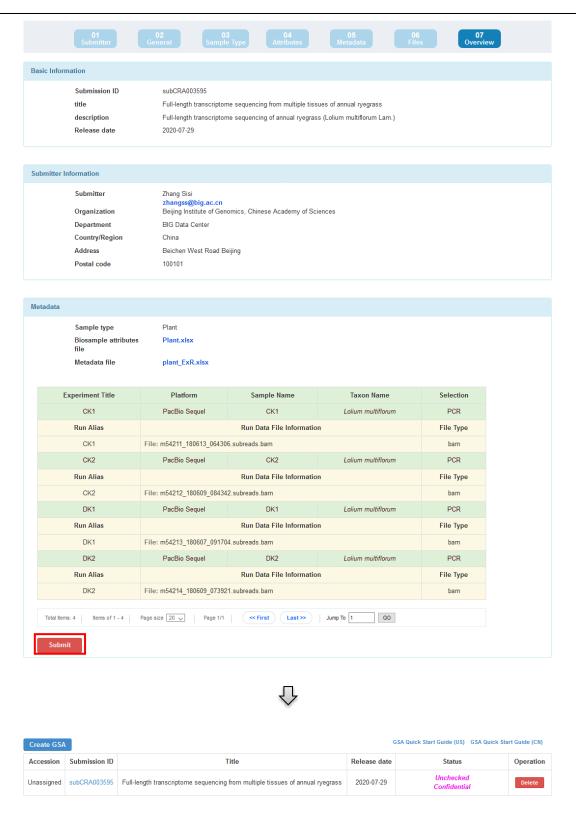
File Upload – this page allows you to select the file upload method, including FTP,
 Aspera Command Line (Recommend) and Web browser upload via Aspera
 Connect plugin. You can also upload your files before the metadata submission
 if you choose the FTP or Aspera Command Line method.

Notice:

- Please remember to check the names and MD5 checksums of the sequence files, which must be the same as those you filled in the batch submission table.
 Otherwise, your files cannot be archived correctly.
- 2) If you choose the Aspera Command Line to upload files, please write down the Aspera Command Line information.



Overview – this page presents a summary of the provided information. On this step, please be careful to check the details of your submission. If you need to make changes, go back by clicking the relevant tab then edit. If everything is correct, click the 'Submit' button to complete the submission.



After completing the submission, please wait for data curation. We will check both metadata and the sequence files and send feedbacks to your registered Email if they are not perfectly correct. So, please **pay attention to your mail feedbacks**. After the curation, your data will be archived to a single GSA set and the assigned accession number will be shown in your GSA list.



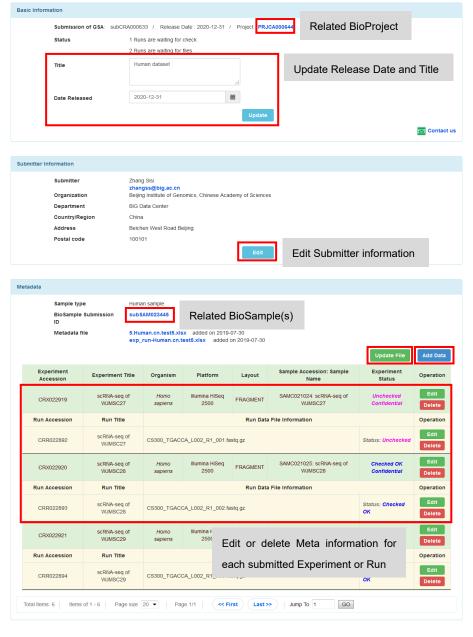
Notice:

- Each new submission receives a temporary Submission ID in the form of sub#, like subCRA003595. Please provide this ID when contacting the GSA Working Team. DO NOT use the temporary Submission ID in the publication or <u>BIG Search</u>.
- 2) After the submission, you will get the **GSA Accession** numbers in the form of CRA#, like CRA002926. **Please use this number in a publication or <u>BIG Search</u>**.

How to Edit, Delete or Add New Data

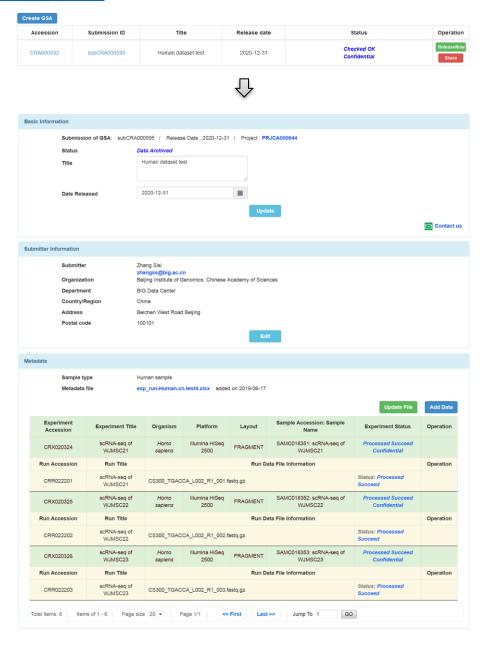
Before the GSA data are archived, you can click the **Submission ID** to enter the Overview page. On this page, you can 1) update the **Release date** and **Title**; 2) edit the **Submitter information**; 3) Append data by clicking the '**Add Data**' button, for more information, please see '<u>Create new GSA Submission</u>'; 4) edit or delete Metadata information for each submitted Experiment or Run; and 5) upload or update data files by clicking '**Upload File**' button.

Notice: For more detail about submission status and the available operations, please go to 'Status and Operation'.



After the GSA data are archived (Status is Checked OK; confidential), you can click the Submission ID to enter the Overview page. On this page, you can 1) update the Release Date and Title; 2) edit the Submitter information; 3) Append data by clicking the 'Add Data' button, for more information, please see 'Create new GSA Submission'; and 4) upload or update data file by clicking the 'Upload File' button. If you still want to change the Metadata information for each submitted Experiment or Run, please contact us at gsa@big.ac.cn.

Notice: For more detail about submission status and the available operations, please go to 'Status and Operation'.



How to Share Your Data

After logging into the BIG Sub system and entering the GSA submission portal, please find the 'Share' button in the 'Operation' column of this list as shown below.



Click the '**Share**' button, you can get the '**Shared UR**L' as shown in the figure below. Send this URL to the editors for peer review.



Notice: The Shared URL is a temporary link only for editors' data review. For your data security, please do not disclose this link to the public. Please click on the 'Cancel Share' button to cancel the data sharing when the data review is finished.

How to Release Your Data

After the article is published, you can click on the 'Release Now' button in the 'Operation' column of the list as shown below.



Click 'Yes' in the 'confirmation box' to trigger the release. The release of GSA will trigger the release of the related BioProject and BioSample(s), so you DO NOT need to release BioProject and BioSample in their respective system again.



It will take several hours to release a GSA dataset, depending on its data size. After they are released, all the data of the GSA dataset can be retrieved from the BIG Search portal within 14 hours.

Data File Uploading

Three methods are offered for data uploading: Aspera Command Line, FTP and Aspera

Connect plugin. Please choose one to upload your data. If you need any help during data

file uploading, please contact the GSA Working Team at gsa@big.ac.cn or QQ group:

548170081.

NOTICE:

1. Unique file names should be used for all files, and each file must be listed in the GSA

metadata file you uploaded.

2. Files must be compressed using gzip or bzip2.

3. Uploaded files will be removed after they are archived.

Aspera Command Line

Use Aspera Command Line to upload files. You may use the following command to

upload files via Aspera Comand Line:

[path/to/ascp/] -P33001 -i [path/to/key/file] -QT -I100m -k1 -d [path/to/folder/containing/files]

aspsub@submit.big.ac.cn:uploads/[user dir]

Where:

[path/to/ascp/]:

Microsoft Windows: C:\Program Files\Aspera\Aspera Connect\bin\ascp.exe

or

C:\users\[username]\AppData\Local\Programs\Aspera\Aspera Connect\bin\ascp.exe

Mac OS X: /Applications/Aspera/Connect.app/Contents/Resources/ascp (for admin's

installation)

or

/Users/[username]/Applications/Aspera/Connect.app/Contents/Resources/ascp (for

non-admin's installation)

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Linux: /opt/aspera/bin/ascp or /home/[username]/aspera/connect/bin/ascp

[path/to/key/file] must be an absolute path, e.g.: /home/keys/aspera.openssh

[path/to/folder/containing/files] needs to specify the local folder that contains all the

files to upload.

[user dir] user directory. You can click the Submission ID to enter the Overview page.

On this page, click the 'Add Data' button and enter the "04 Files" page to find the user

directory information.

Get the key file

Notice:

1) Please make a new subdirectory for each new submission. Your submission

subfolder is a temporary holding area and will be removed once the whole

submission is complete.

2) Do not upload complex directory structures or files that do not contain sequence

data.

FTP Upload

We recommend to use an FTP client software to upload files. FTP Username and

Password are same to the BIG Sub account.

NOTICE: Please use the binary mode to transfer files. If you are using the FTP client

software (such as FileZilla Client) to log in to the FTP server, follow the tool's instruction

to set the transfer mode; If you are using FTP command, type the binary command

before the **mput** command.

Transmitting your data files to the GSA FTP site

Address: ftp://submit.big.ac.cn

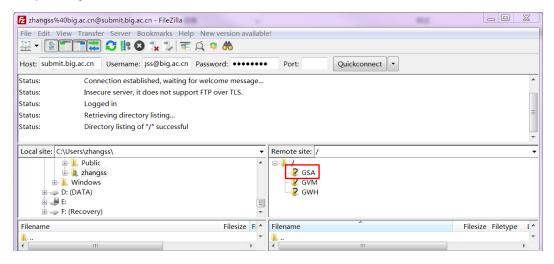
User: Same as you login the BIG Sub

Password: Same as you login the BIG Sub

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After you connected to the FTP server:

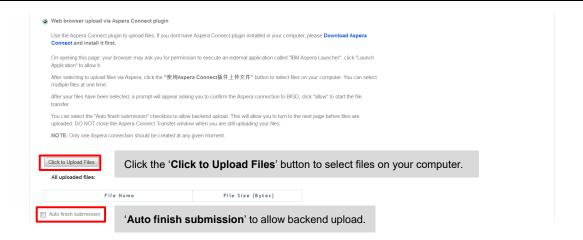
- Navigate to the GSA folder.
- 2. Upload your files here.



Web browser upload via Aspera Connect plugin

Use the Aspera Connect plugin to upload files. If you do not have Aspera Connect plugin installed in your computer, please **Download Aspera Connect and install it first.**

- On opening the File Upload page, your browser may ask you for permission to execute an external application called 'IBM Aspera Launcher', click 'Launch Application' to allow it.
- 2. After selecting to upload files via Aspera, click the 'Click to Upload Files' button to select files on your computer. You can select multiple files at one time.
- 3. After your files have been selected, a prompt will appear asking you to confirm the Aspera connection to BIGD, click 'allow' to start the file transfer.
- 4. You can select the 'Auto finish submission' checkbox to allow backend upload. This will allow you to turn to the next page before the uploading is completed. DO NOT close the Aspera Connect Transfer window when you are still uploading your files.

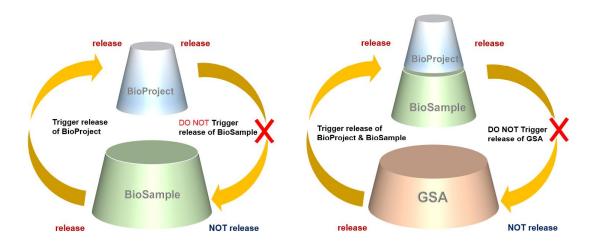


Notice: Only one Aspera connection should be created at any given moment.

Release of linked BioProject/BioSample/GSA

Release rules of linked BioProject, BioSample, and GSA are as follows:

- The release of the BioProject records DO NOT trigger the release of the other linked data.
 - 2. The release of the BioSample records JUST triggers the release of its BioProject.
 - 3. The release of the GSA nucleotide sequence data DO trigger the release of the linked BioProject and BioSample records.



Notice: Therefore, please carefully fill in the '**release time**' of a BioProject, BioSample and GSA. Once published, the representative data or information can be retrieved or downloaded by other users.

Status and Operation

GSA Status and Operation

subCRA000595

Human dataset test

CRA000532

Create GSA Title Operation Release date Accession Submission ID Status Unfinished at the OverView step Delete Unassigned subCRA000654 human 2019-08-06 Confidential Unchecked Unassigned subCRA000653 Human dataset 1 2020-12-31 Delete Unfinished at the Attributes step Delete Unassigned subCRA000652 microbe dataset 2019-08-05 Deleted subCRA000651 Human dataset 2 2020-12-31 Unassigned Confidential

2020-12-31

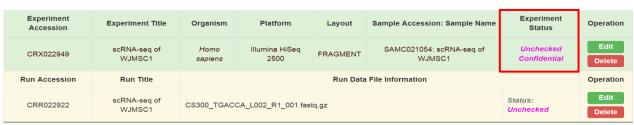
Checked OK Confidential

No.	Status	Description	Operation	
1	Unfinished at the General Info step	Finished the Submitter step and enter	Edit ^[1] ; Delete	
'	ommished at the General into step	the general info step.		
		Finished the General info step. If not		
2	Unfinished at the Sample Type step	created GSA related Biological	Edit ^[1] ; Delete	
		Sample(s), enter the Sample type step.		
3	Unfinished at the Attributes step	Finished Sample type step, enter the	Edit[1]: Doloto	
3	Ommistied at the Attributes step	Attributes step	Edit ^[1] ; Delete	
4	Unfinished at the Metadata step	Finished the Attributes step, enter the	Edit ^[1] ; Delete	
T		GSA metadata step.	Luit 4, Deiete	
5	Unfinished at the File Upload step	Finished the GSA metadata step, enter	Edit ^[1] ; Delete	
	Ommistied at the File Opioad Step	the File Upload step.	Luit 7, Delete	
6	Unfinished at the Overview step	Enter the overview step.	Edit ^[1] ; Delete	
7	Unchecked	All the information are submitted,	Edit ^[1] ; Delete	
		waiting for check.		
	Checked failed		Edit ^[1] ; Delete; Reload	
8		Data file(s) processed error.	data file via FTP or	
			Aspera Command	

			Line ^[2]
9	Checked OK	Data file(s) Processed succeed and GSA Accession number is assigned.	Release Now; Share
10	Deleted	Deleted	

^[1]: You can click the **GSA Submission ID** to enter the Overview page to edit GSA related metadata. For more detail, please see 'How to Edit, Delete or Add New Data'.

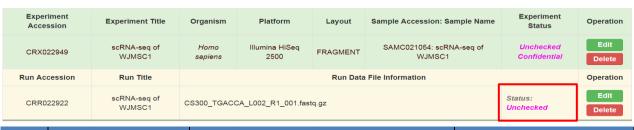
Experiment Status and Operation



No.	Status	Description	Operation
1	Unchecked	Metadata submitted and waiting for check.	Edit ^[1] ; Delete
2	Checked OK	Metadata Checked OK	Edit ^[1] ; Delete
3	Checked failed	Metadata Checked failed	Edit ^[1] ; Delete
5	Deleted	Deleted	

^{[1]:} You can click the **GSA Submission ID** to enter the Overview page to edit the Experiment metadata. For more details, please see 'How to Edit, Delete or Add New Data'.

Run Status and Operation



No.	Status	Description	Operation
1	Unchecked	Metadata submitted and waiting for check.	Edit ^[1] ; Delete

^{[2]:} For more details for data file upload, please see 'Data File Upload'.

2	Checked OK	Metadata Checked OK	Edit ^[1] ; Delete
3	Checked failed	Metadata Checked failed	Edit ^[1] ; Delete
4	Uploaded Succeed	Data file(s) uploaded succeed, waiting for processing.	
5	Processing	Data file(s) under processing.	
6	Processed succeed	Data file(s) processed succeed	
7	Processed error	Data file(s) processed error	Edit ^[1] ; Delete; Reload data file via FTP or Aspera Command Line ^[2]
8	Deleted	Deleted	

^{[1]:} You can click the **GSA Submission ID** to enter the Overview page to edit Run metadata. For more detail, please see 'How to Edit, Delete or Add New Data'.

^{[2]:} For more detail for data file upload, please see 'Data File Upload'.