

Quartet Data Portal User Guide for WGS Quality Assessment Report

1. Preparation

QDP Address	https://chinese-quartet.org/
OSSUtil	https://docs.chinese-quartet.org/tools/ossutil/
Input files	The files should be one of the following options: Pair-end FASTQ files, with suffixes of _R1.fastq.gz and _R2.fastq.gz or _R1.fq.gz and _R2.fq.gz . unzipped VCF files, with suffixes of .vcf .

2. Log on to QDP

2.1 QDP account

1) If you have a request for the reference materials, please go to <http://chinese-quartet.org/#/materials> to request the reference materials. The Quartet team will contact you for further confirming your information and send you a registration email.

The screenshot shows the 'Reference Materials' page on the Quartet Data Portal. The page features four columns of reference materials, each with a 'Request' button highlighted in red. Below each button is a table listing the materials and their colors.

Name of DNA Reference Material	Color
FDU_Quartet_DNA_D5_20171028	Blue
FDU_Quartet_DNA_D6_20171028	Green
FDU_Quartet_DNA_F7_20171028	Yellow

Name of RNA Reference Material	Color
FDU_Quartet_RNA_D5_20171028	Blue
FDU_Quartet_RNA_D6_20171028	Green
FDU_Quartet_RNA_F7_20171028	Yellow

Name of Protein Reference Material	Color
FDU_Quartet_Protein_D5_20171028	Blue
FDU_Quartet_Protein_D6_20171028	Green
FDU_Quartet_Protein_F7_20171028	Yellow

Name of Metabolite Reference Material	Color
FDU_Quartet_Metabolite_D5_20171028	Blue
FDU_Quartet_Metabolite_D6_20171028	Green
FDU_Quartet_Metabolite_F7_20171028	Yellow

2) If you do not have a request for the reference materials, please send an email to quartet@fudan.edu.cn for a QDP account.

2.2 Log on to QDP

Address: <http://chinese-quartet.org/>

The Quartet Data Portal only supports access from modern browsers, such as Chrome, Safari, Firefox or Edge.

We're announcing the release of our new documentation service >>> <https://docs.chinese-quartet.org> <<<

The Quartet Project

Quality Control and Data Integration of Multi-omics Profiling

[Request Reference Materials](#) [Download MultiOmics Data](#) [Analyze Your Omics Data](#)

Multi-omics (or molecular phenomics) profiling at the genomic, transcriptomic, proteomic, and metabolomic levels is the cornerstone of high-throughput technologies for discovering biomarkers for precision medicine. However, the lack of quality control procedures of multi-omics profiling during data generation and data analysis can lead to false findings, raising serious concerns about the reliability of multi-omics studies.

The Quartet Project provides publicly accessible multi-omics reference materials and practical tools to enhance the reproducibility and reliability of multi-omics results. Well-characterized multiomics reference materials and quality control metrics pertinent to precision medicine study purposes can be used to measure and mitigate technical variation, enabling more accurate cross-batch and cross-omics data integration in increasingly large-scale and longitudinal studies such as the International Human Phenome Project.

Data Portal Summary			
Release v1.0 (October 18, 2021)			
Cell Lines	Omics	Reference Materials	Reference Datasets
4	6	20	16
Platforms	Sites	Libraries	Files
26	27	1323	2646

Quartet
中华家系1号

For the Quality Control of Omics Data

[Account Login](#)

Please enter your username.

Please enter your password.

[Register](#) [Forgot Password?](#)

[Login](#)

[Data Policies](#) [Help](#) [Feedback](#)

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2.3 Select Quality Assessment> QC Apps

The Quartet Data Portal only supports access from modern browsers, such as Chrome, Safari, Firefox or Edge.

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Quality Control and Data Integration of Multi-omics Profiling

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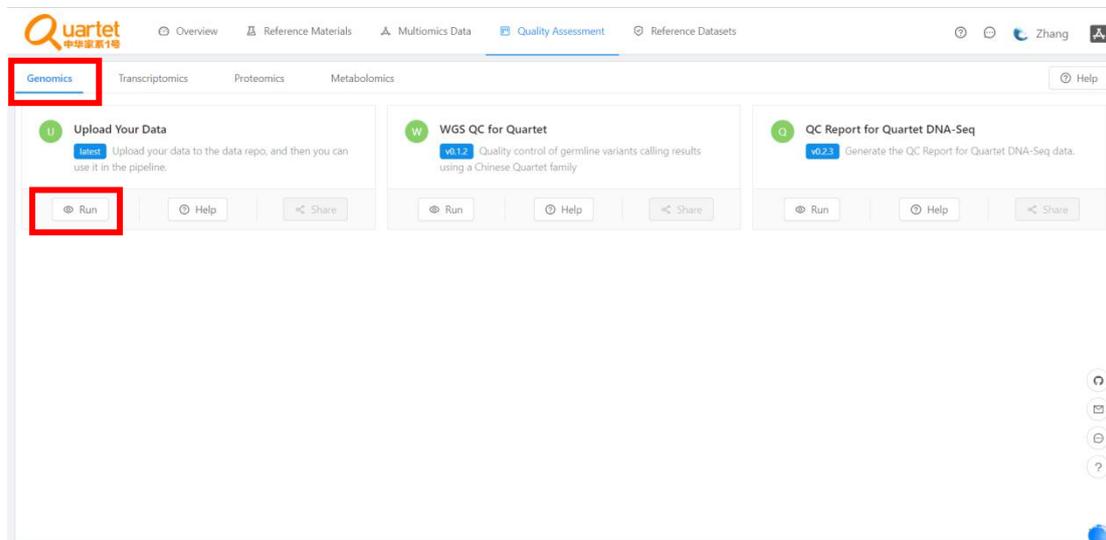
Multi-omics (or molecular phenomics) profiling at the genomic, transcriptomic, proteomic, and metabolomic levels is the cornerstone of high-throughput technologies for discovering biomarkers for precision medicine. However, the lack of quality control procedures of multi-omics profiling during data generation and data analysis can lead to false findings, raising serious concerns about the reliability of multi-omics studies.

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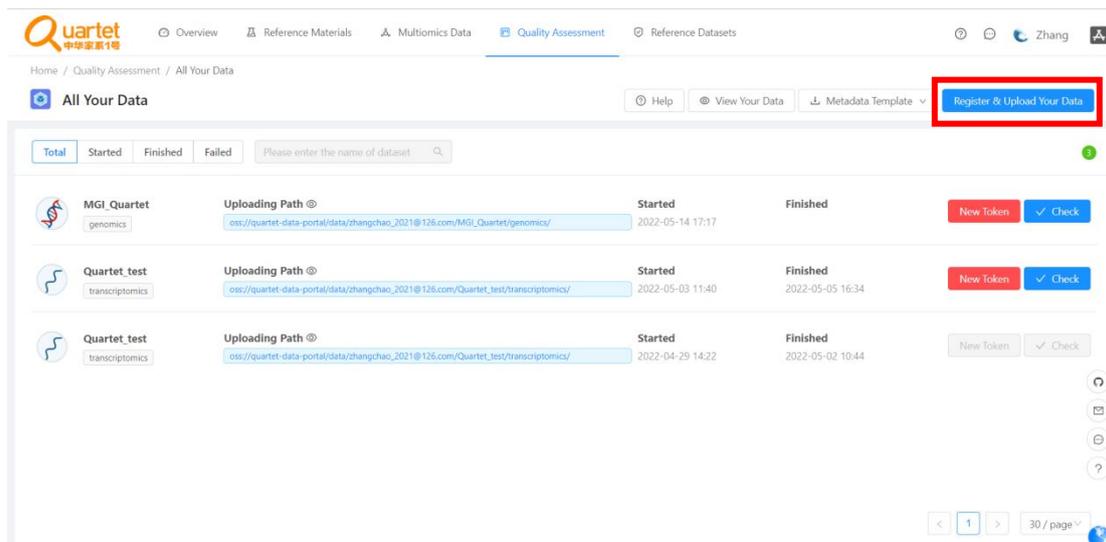
3. Upload DNA sequencing data

3.1 Select Genomic> Upload Your Data> Run



The screenshot shows the Quartet web interface. The top navigation bar includes 'Overview', 'Reference Materials', 'Multiomics Data', 'Quality Assessment', and 'Reference Datasets'. The 'Quality Assessment' section is active, showing three main options: 'Upload Your Data', 'WGS QC for Quartet', and 'QC Report for Quartet DNA-Seq'. The 'Upload Your Data' option is highlighted with a red box, and its 'Run' button is also highlighted with a red box.

3.2 Click the symbol called “Register & Upload Your Data”



The screenshot shows the 'All Your Data' section of the Quartet web interface. The top navigation bar is the same as in the previous screenshot. The 'All Your Data' section has a search bar and a 'Register & Upload Your Data' button highlighted with a red box. Below this, there is a table of data uploads.

	Uploading Path	Started	Finished	
 MGI_Quartet genomics	oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/	2022-05-14 17:17		New Token Check
 Quartet_test transcriptomics	oss://quartet-data-portal/data/zhangchao_2021@126.com/Quartet_test/transcriptomics/	2022-05-03 11:40	2022-05-05 16:34	New Token Check
 Quartet_test transcriptomics	oss://quartet-data-portal/data/zhangchao_2021@126.com/Quartet_test/transcriptomics/	2022-04-29 14:22	2022-05-02 10:44	New Token Check

3.3 Fill in Dataset Name, DataType select Genomics, and click Submit

The screenshot shows the 'Register & Upload Your Omics Data' form in the Quartet Data Portal. The form includes the following fields:

- Dataset Name:** MGI_Quartet_test
- Contact Email:** zhangchao_2021@126.com
- Manager:** zhangchao_2021@126.com
- DataType:** Genomics
- Description:** (Empty text area)

The 'Submit' button is highlighted with a red box, indicating the next step in the process.

3.4 Click the symbol called "New Token". Copy the authorizedCode, which is for subsequent ossbrowser login

The screenshot shows the 'New Token Information (Only Show Once)' dialog box. The dialog contains the following information:

- Download:** A button to download the token information.
- authorizedCode:** A long alphanumeric string used for subsequent login.

In the background, a table of datasets is visible, with 'New Token' buttons highlighted in red for each row, indicating the next step in the process.

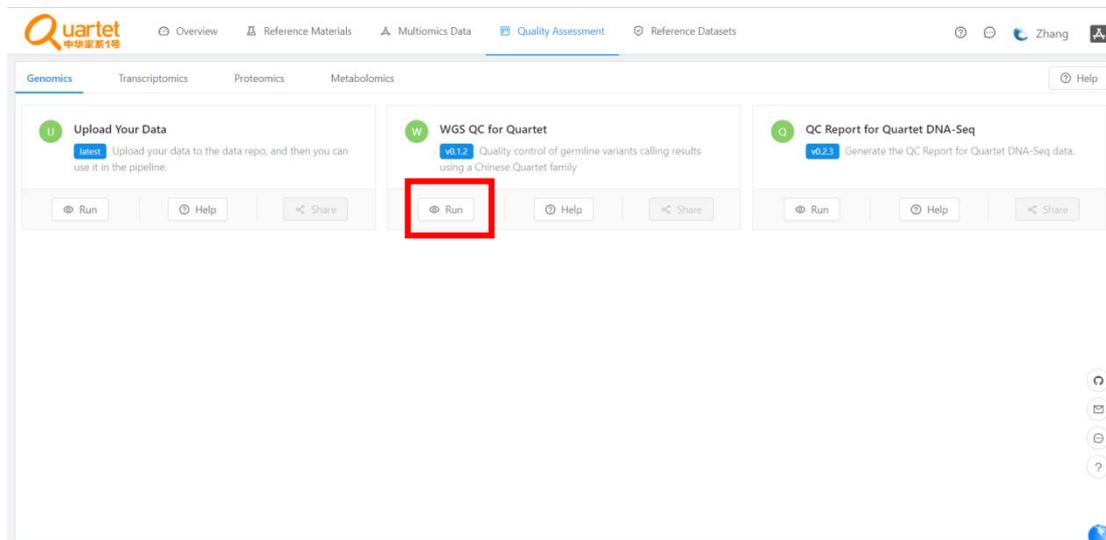
3.5 Please follow the ossutil document to upload your data.

ossutil is a user friendly command line tool to upload data to the Quartet Data Portal. It supports the following operating systems: Windows, Linux, and macOS. You can download and install the ossutil version that best suits your requirements.

<https://docs.chinese-quartet.org/tools/ossutil/>

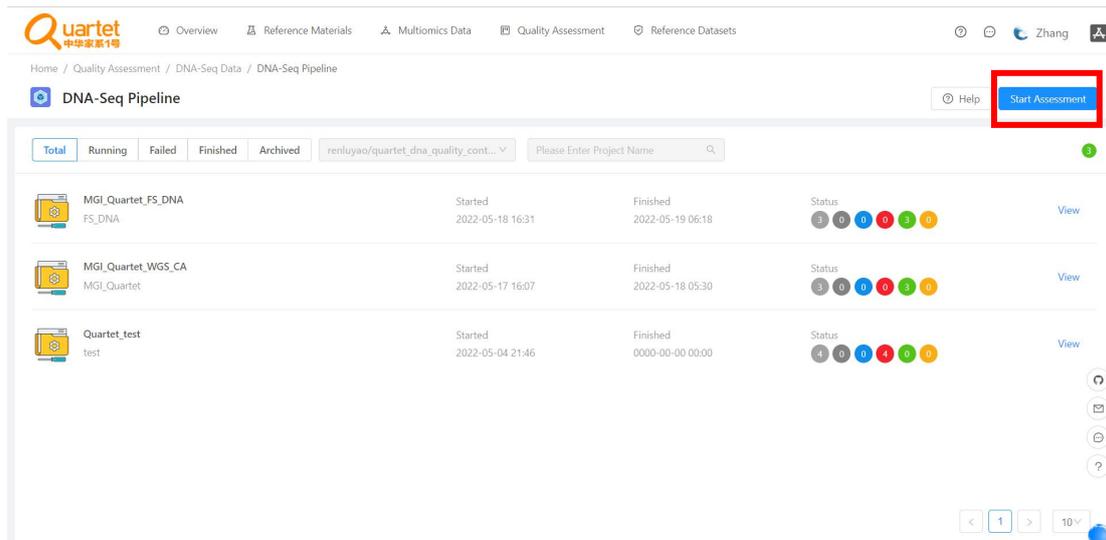
4. Run WGS app

4.1 Select Genomic> WGS QC for Quartet> Run



The screenshot shows the Quartet web interface. The top navigation bar includes 'Overview', 'Reference Materials', 'Multiomics Data', 'Quality Assessment', and 'Reference Datasets'. The 'Quality Assessment' tab is selected. Below the navigation bar, there are three main panels: 'Upload Your Data', 'WGS QC for Quartet', and 'QC Report for Quartet DNA-Seq'. The 'WGS QC for Quartet' panel is highlighted with a red box, and its 'Run' button is also highlighted with a red box. The 'QC Report for Quartet DNA-Seq' panel is also visible.

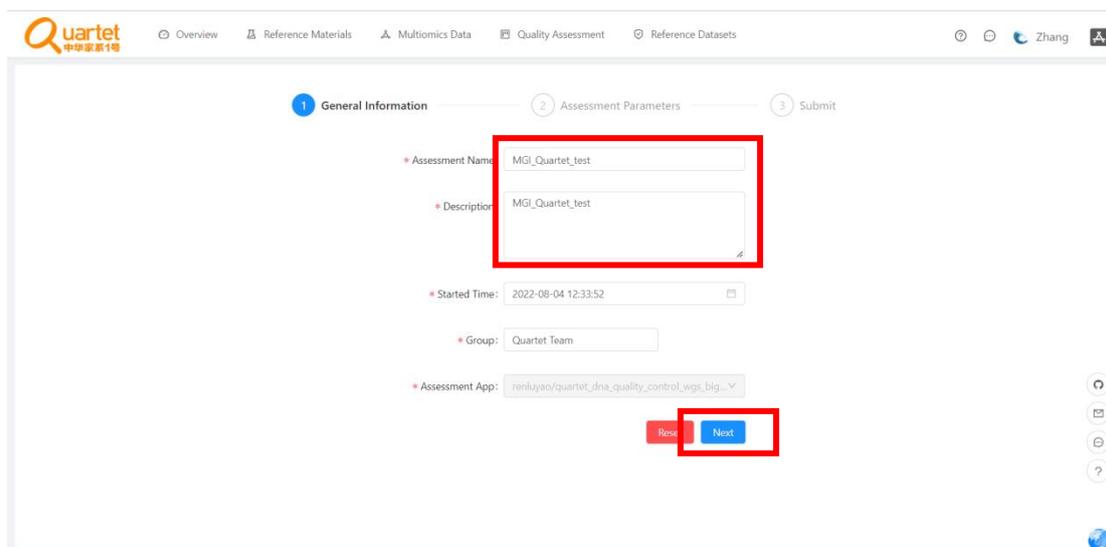
4.2 Click the symbol called “Start Assessment”



The screenshot shows the Quartet web interface. The top navigation bar includes 'Overview', 'Reference Materials', 'Multiomics Data', 'Quality Assessment', and 'Reference Datasets'. The 'Quality Assessment' tab is selected. Below the navigation bar, there is a 'DNA-Seq Pipeline' section. The 'Start Assessment' button is highlighted with a red box. Below this, there is a table with columns for 'Total', 'Running', 'Failed', 'Finished', and 'Archived'. The table contains three rows of data:

Total	Running	Failed	Finished	Archived	Project Name	Status	View
3	0	0	3	0	renluyao/quartet_dna_quality_cont...	3 0 0 3 0	View
3	0	0	3	0	MGI_Quartet_WGS_CA MGI_Quartet	3 0 0 3 0	View
4	0	4	0	0	Quartet_test test	4 0 4 0 0	View

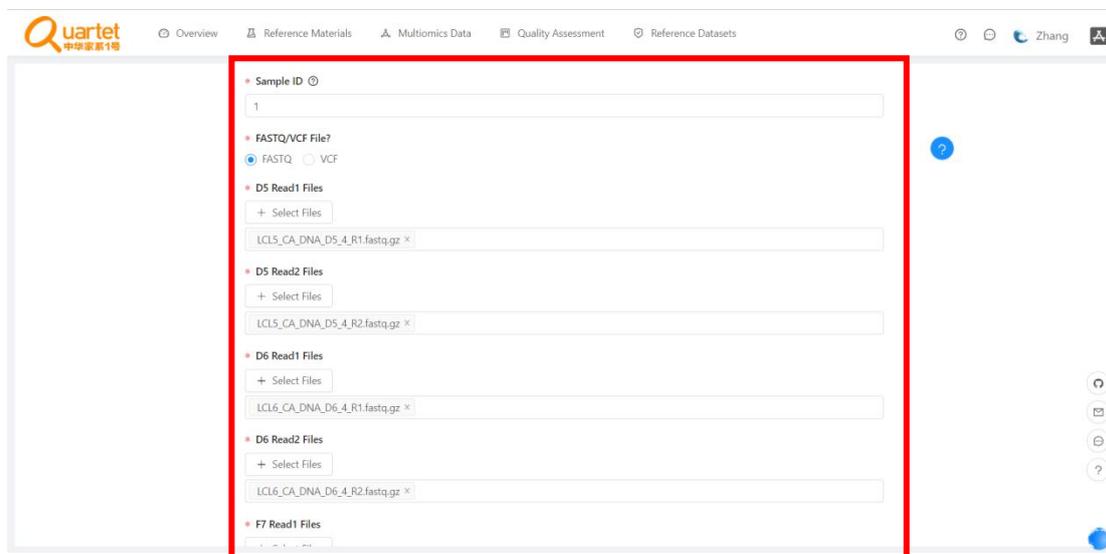
4.3 Fill in Assessment Name and Description. Then click Next.



The screenshot shows the 'General Information' step of the Quartet assessment setup process. The 'Assessment Name' and 'Description' fields are highlighted with a red box and contain the text 'MGI_Quartet_test'. The 'Next' button is also highlighted with a red box. The interface includes a navigation bar with 'Overview', 'Reference Materials', 'Multiomics Data', 'Quality Assessment', and 'Reference Datasets'. The 'Assessment App' is set to 'renliujiao/quartet_dna_quality_control_wgs_big'.

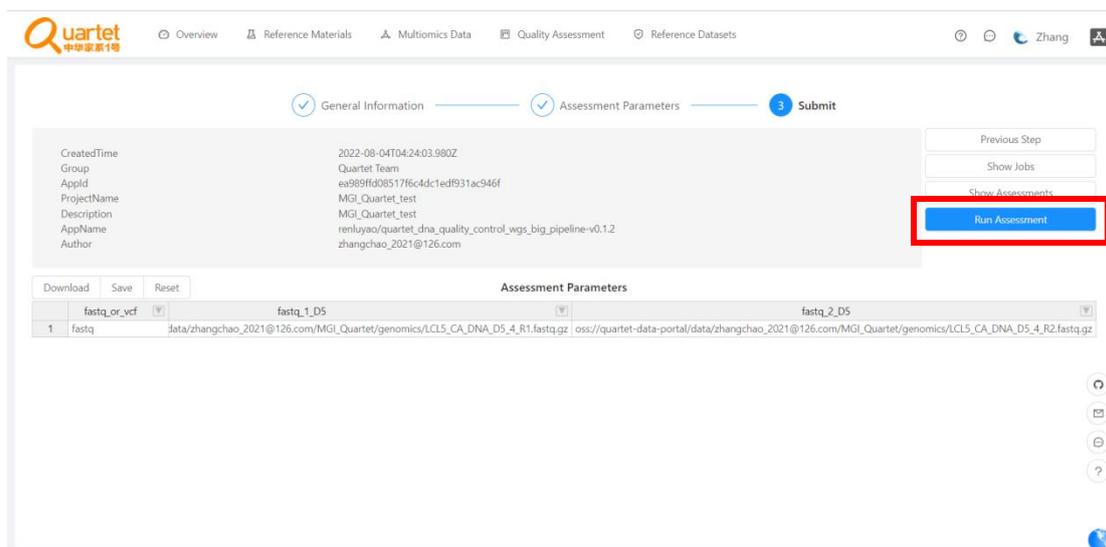
4.4 Fill in Sample information

Sample ID should be numbers. It is set D5+D6+F7+M8 Four samples as a group, Sample ID for one group of samples filled in 1, Sample ID for two groups of samples filled in 2, Sample ID for three groups of samples filled in 3. Assessment Parameters can be downloaded and checked.

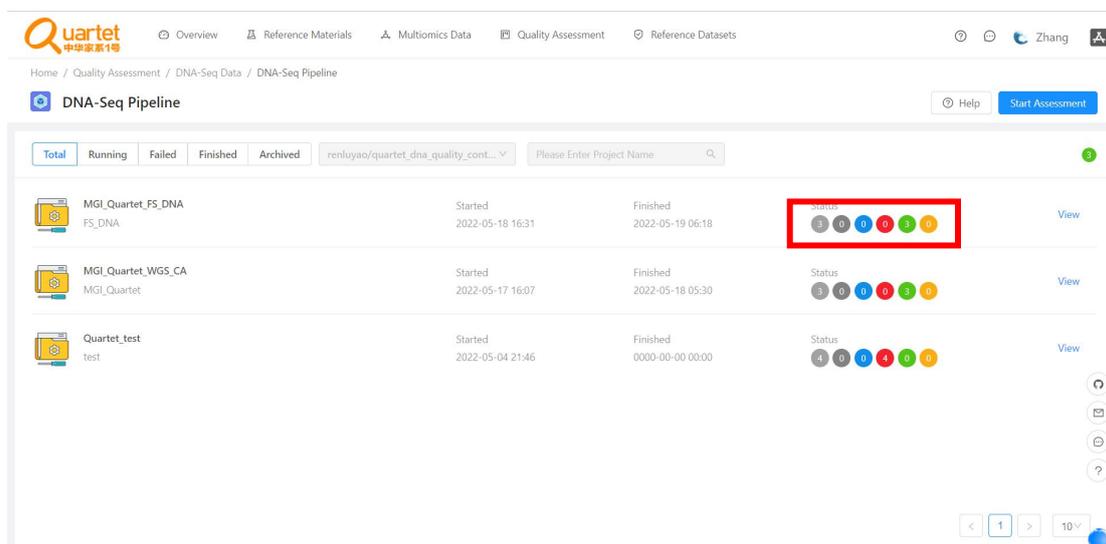


The screenshot shows the 'Sample ID' step of the Quartet assessment setup process. The 'Sample ID' field is highlighted with a red box and contains the number '1'. The 'FASTQ/VCF File?' section is also highlighted with a red box and shows 'FASTQ' selected. The 'D5 Read1 Files', 'D5 Read2 Files', 'D6 Read1 Files', and 'D6 Read2 Files' sections are also highlighted with a red box and show file names like 'LCL5_CA_DNA_D5_4_R1.fastq.gz'.

4.5 Click the symbol called “Run Assessment”



4.6 Check the status of Run Assessment



5. Results and Report

5.1 Select Genomic> QC Report for Quartet DNA Seq-Run

The screenshot shows the Quartet web interface with the 'Quality Assessment' tab selected. The 'QC Report for Quartet DNA-Seq' workflow is visible, and the 'Run' button is highlighted with a red box.

5.2 Click the symbol called “New QC Report”

The screenshot shows the Quartet web interface with the 'DNA-Seq QC Report' table. The 'New QC Report' button is highlighted with a red box.

Report Name	Category	Report Tool	Version	Created At	Finished At	Status	Action
MGI_Quartet_FS_DNA		quartet-dseqc-report	v0.2.3	2022-05-19 20:45	2022-05-19 20:58		Result Download
MGI_Quartet_FS_DNA		quartet-dseqc-report	v0.2.3	2022-05-19 20:13	2022-05-19 20:19		Result Show Log
MGI_Quartet_WGS_CA		quartet-dseqc-report	v0.2.3	2022-05-18 19:16	2022-05-18 19:30		Result Download
MGI_Quartet_WGS_CA		quartet-dseqc-report	v0.2.3	2022-05-18 18:01	2022-05-18 18:15		Result Download
MGI_Quartet_WGS_CA		quartet-dseqc-report	v0.2.3	2022-05-18 17:00	2022-05-18 17:00		Result Show Log Refresh
MGI_Quartet_WGS_CA		quartet-dseqc-report	v0.2.3	2022-05-18 16:24	2022-05-18 16:24		Result Show Log Refresh
MGI_Quartet_WGS_CA		quartet-dseqc-report	v0.2.2	2022-05-18 09:27	2022-05-18 09:33		Result Download Refresh

5.3 Follow the Steps as prompted

New QC Report

Step1: Choose Report Step2: Load Project & Submit

Notices
Please select the expected quality assessment tool from the following list, after selecting the tool, the corresponding guidance message will appear.

Category	Name	Description	Version	Github
<input checked="" type="radio"/>	QC Report for Quartet DNA-Seq	Generate the QC Report for Quartet DNA-Seq data.	v0.2.3	Github

New QC Report

Step1: Choose Report **Step2: Load Project & Submit**

Notices
Please select the completed project from the dropdown menu below and the QC report tool will automatically extract the required data from the results file generated by the 'WGS QC for Quartet' app and generate a QC report. If you do not find the expected project, please check whether the corresponding analysis has been completed properly.

MGI_Quartet_FS_DNA
 MGI_Quartet_FS_DNA
 MGI_Quartet_WGS_CA

```

{
  "description": "FS_DNA",
  "appName": "renluyao/quartet_dna_quality_control_wgs_big_pipeline-v0.1.2",
  "appId": "ea989ff08517f6c4dcdedf931ac946f",
  "author": "zhangchao_2021@126.com",
  "groupName": "Quartet Team",
  "startedAt": "2022-05-18 16:31",
  "finishedAt": "2022-05-19 06:18",
  "samples": [
    {
      "fastq_2_F7": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL7_FS_DNA_F7_1_R2.fastq.gz",
      "fastq_1_F7": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL7_FS_DNA_F7_1_R1.fastq.gz",
      "fastq_2_D6": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL6_FS_DNA_D6_1_R2.fastq.gz",
      "fastq_1_D6": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL6_FS_DNA_D6_1_R1.fastq.gz",
      "fastq_2_M8": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL8_FS_DNA_M8_1_R2.fastq.gz",
      "fastq_1_D5": "oss://quartet-data-portal/data/zhangchao_2021@126.com/MGI_Quartet/genomics/LCL5_FS_DNA_D5_1_R1.fastq.gz",
      "facta.on.wrf": "facta"
    }
  ]
}
    
```

Cancel Submit

DNA-Seq QC Report [New QC Report](#)

Report Name	Category	Report Tool	Version	Created At	Finished At	Status	Action
MGI_Quartet_FS_DNA		quartet-dseq-report	v0.2.3	2022-05-19 20:45	2022-05-19 20:58		Result Download
MGI_Quartet_FS_DNA		quartet-dseq-report	v0.2.3	2022-05-19 20:13	2022-05-19 20:19		Result Show Log
MGI_Quartet_WGS_CA		quartet-dseq-report	v0.2.3	2022-05-18 19:16	2022-05-18 19:30		Result Download
MGI_Quartet_WGS_CA		quartet-dseq-report	v0.2.3	2022-05-18 18:01	2022-05-18 18:15		Result Download
MGI_Quartet_WGS_CA		quartet-dseq-report	v0.2.3	2022-05-18 17:00	2022-05-18 17:00		Result Show Log
MGI_Quartet_WGS_CA		quartet-dseq-report	v0.2.3	2022-05-18 16:24	2022-05-18 16:24		Result Show Log
MGI_Quartet_WGS_CA		quartet-dseq-report	v0.2.2	2022-05-18 09:27	2022-05-18 09:33		Result Download

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