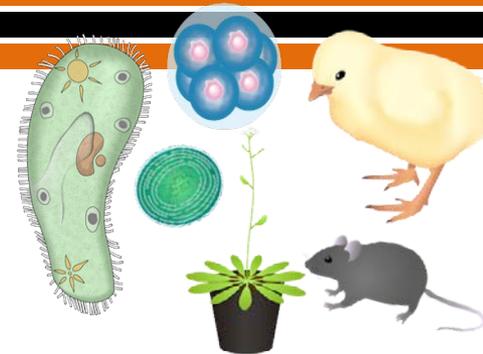


2014-08-20

ゲノム支援拡大班会議(神戸ポートピアホテル)



Togo picture gallery by DBCLS is Licensed under a [Creative Commons 表示 2.1 日本](#) (c)

BioProject, BioSample, DRA への データ登録

古屋典子

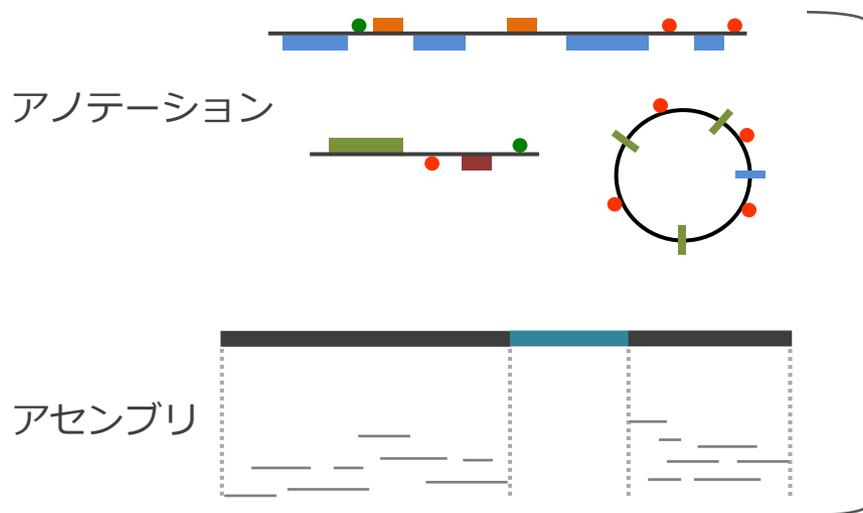
Noriko Furuya, PhD

国立遺伝学研究所 DDBJ センター、アノテータ
senior curator, DDBJ center, National Institute of Genetics

INSDC*の塩基配列データベースには、大きく2種類

* INSDC:

DDBJ center, EMBL-EBI, NCBI



DDBJ / ENA / GenBank

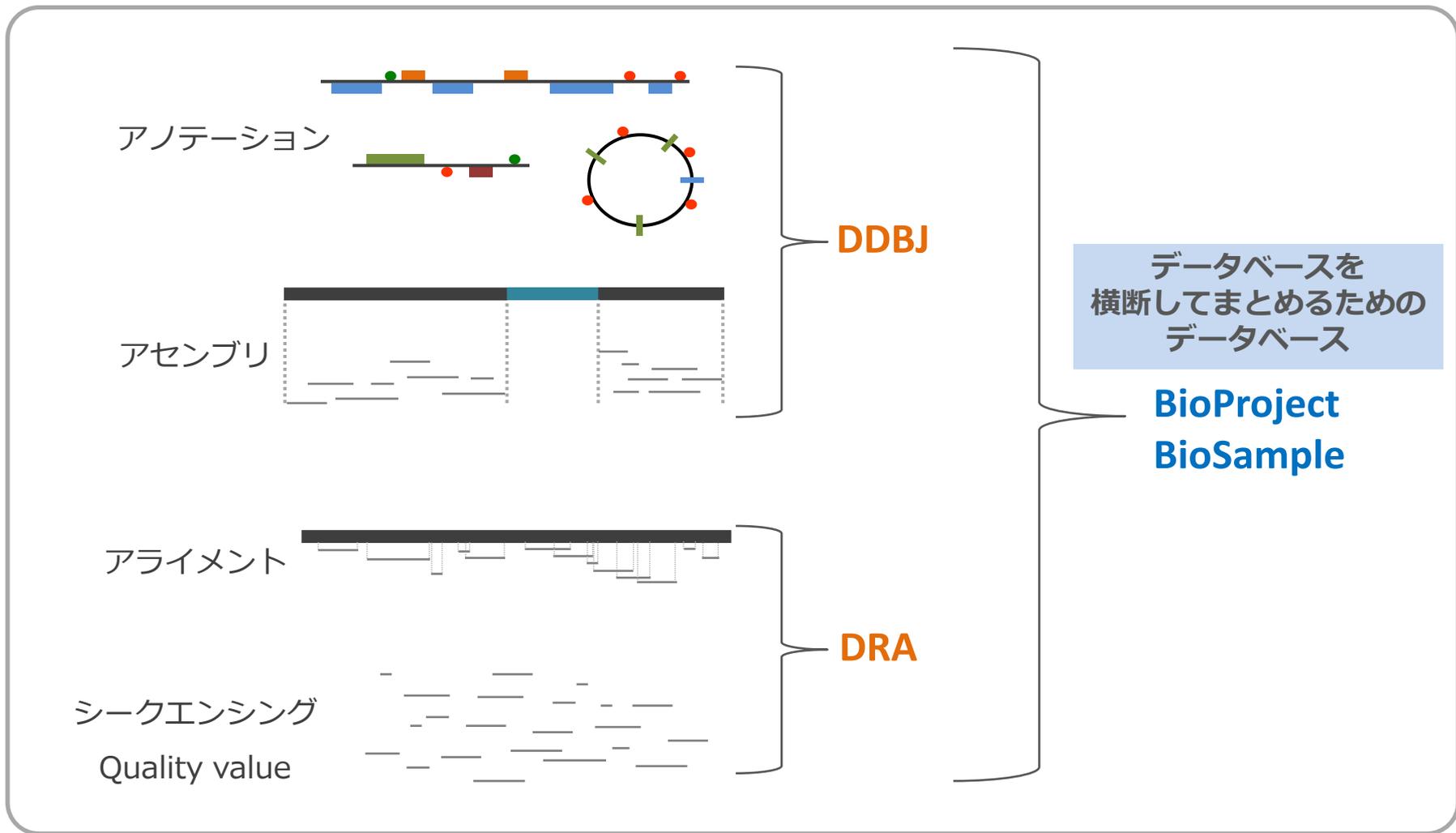


DRA / ENA / SRA

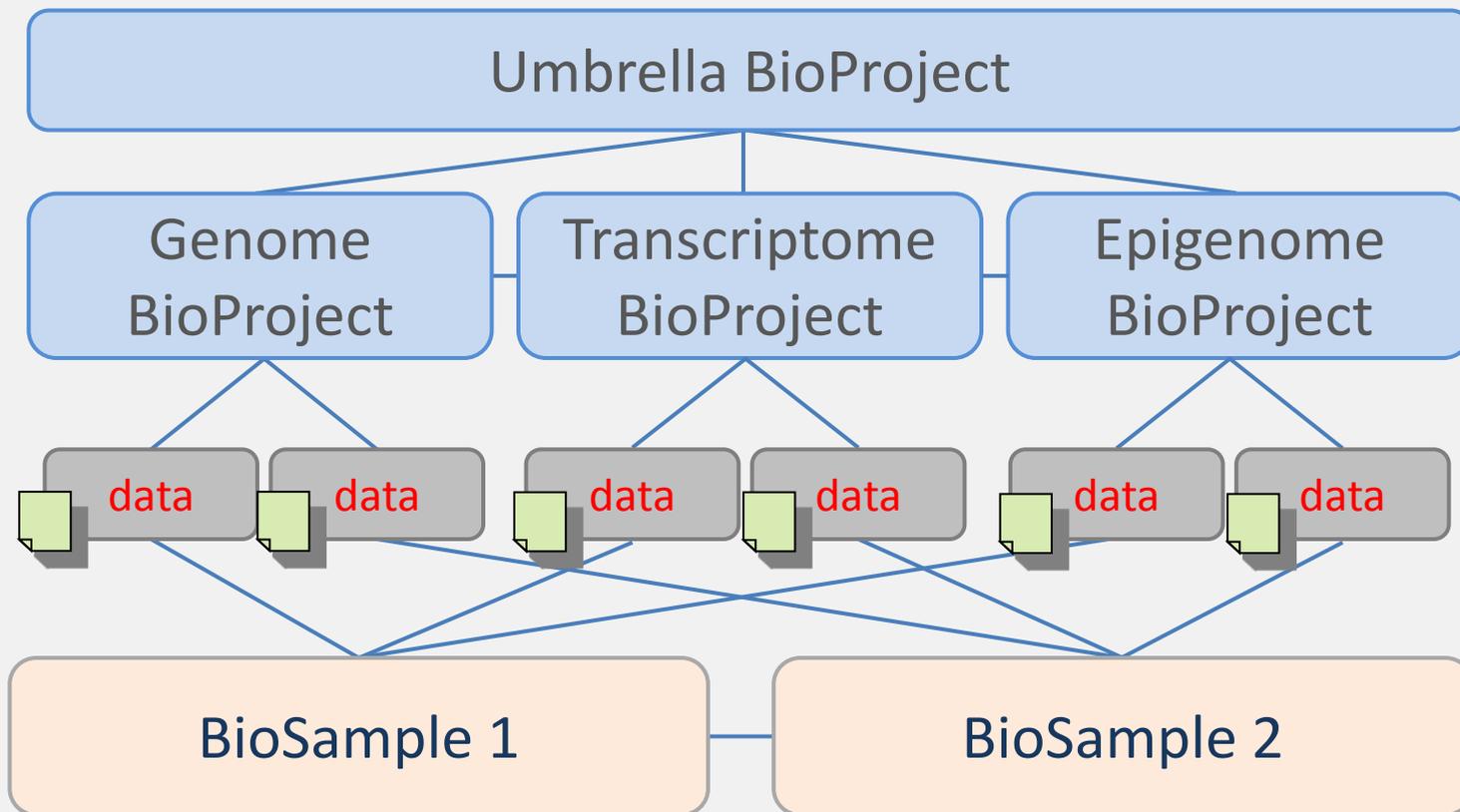
(Sequence Read Archive)

シーケンシング
Quality value

DDBJセンターの中には、DDBJとDRAの2種類



BioProject と BioSample は、「プロジェクト」と「サンプル」という切り口で、多様なデータを組織化する



同じIDを引用しデータに関連付ける

DRA は、次世代シーケンサ由来の1次データを格納する



DRA 登録には、メタデータとデータファイルが必要

メタデータ

metadata = "data about data"

- * サブミッション情報 Submission
Submitter, Organization etc.
- * 研究情報 Study (=BioProject)
Title, Purpose, Grant etc.
- * サンプル情報 Sample (=BioSample)
Scientific name, Location etc.
- * 実験情報 Experiment
platform, spot length etc.
- * ラン情報 Run
file name, MD5 value etc.

データファイル

シーケンスデータ もしくは アライメントデータ

シーケンスデータ

Roche 454 : .sff もしくは .fastq
Illumina : .fastq もしくは .qseq
Applied Biosystems : .csfasta と .QV.qual
Ion Torrent : .sff もしくは .fastq
Helicos Heliscope : .sms もしくは .fastq
Complete Genomics : .fastq
Pacific Biosciences : .fastq

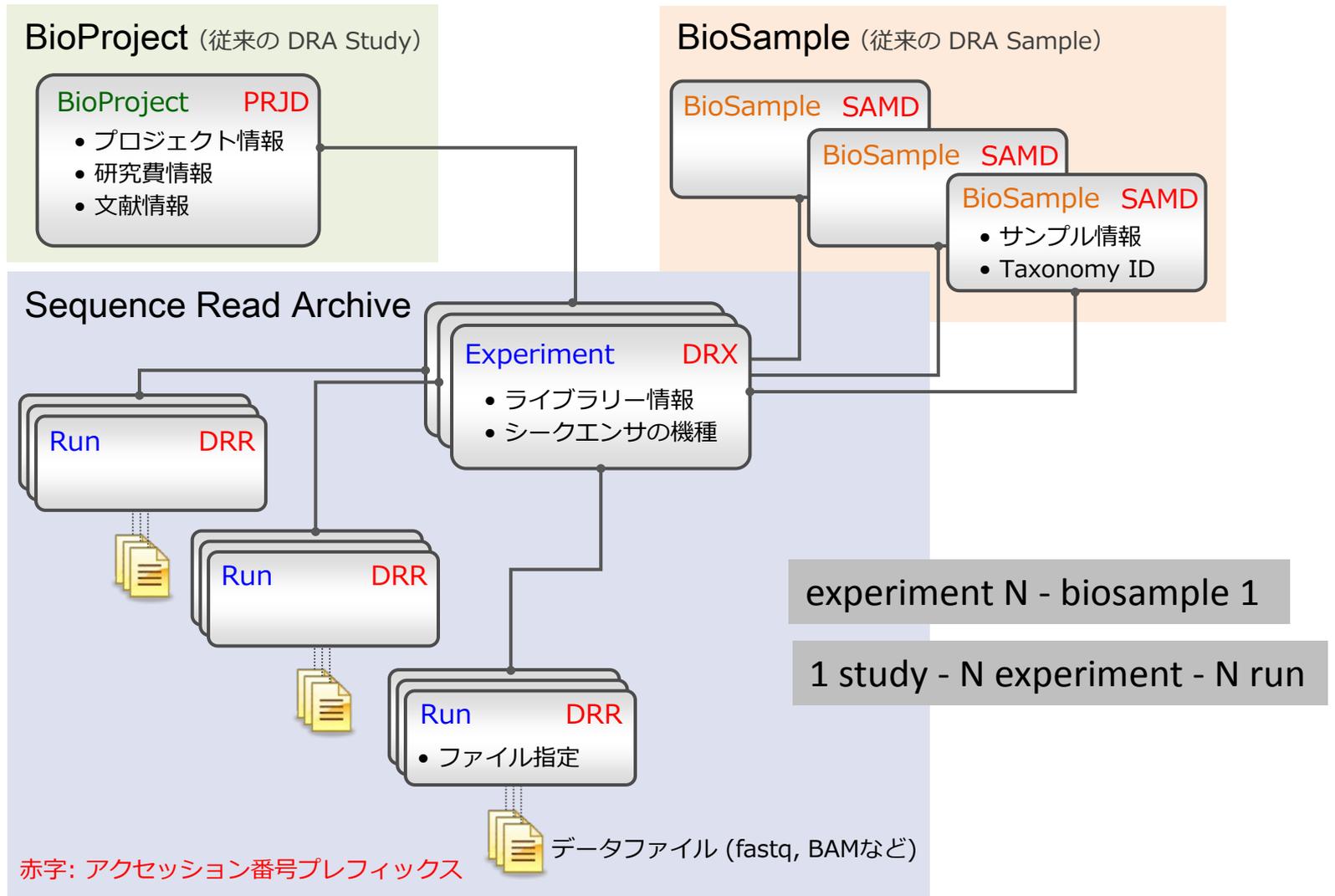
アライメントデータ (3点セット)

- 1) BAM
- 2) リファレンス配列
- 3) SN-リファレンス配列の対応表

データベースで公開する



メタデータは、複数のオブジェクトで構成される



メタデータは、機械処理に適した XML ファイルで管理

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<EXPERIMENT_SET>
  <EXPERIMENT accession="DRX0xxxxxx" center_name="NIG" alias="furuya-0001_Experiment_0001">
    <TITLE>WGS of Musa balbisiana var. liukuensis</TITLE>
    <STUDY_REF accession="DRP00xxxx" refcenter="NIG" refname="furuya-0001_Study_0001"/>
    <DESIGN>
      <DESIGN_DESCRIPTION></DESIGN_DESCRIPTION>
      <SAMPLE_DESCRIPTOR accession="DRS0xxxxxx" refcenter="NIG" refname="furuya-0001_Sample_0001"/>
      <LIBRARY_DESCRIPTOR>
        <LIBRARY_STRATEGY>WGS</LIBRARY_STRATEGY>
        <LIBRARY_SOURCE>GENOMIC</LIBRARY_SOURCE>
        <LIBRARY_SELECTION>RANDOM</LIBRARY_SELECTION>
        <LIBRARY_LAYOUT>
          <PAIRED/>
        </LIBRARY_LAYOUT>
        <POOLING_STRATEGY>multiplexed libraries</POOLING_STRATEGY>
      </LIBRARY_DESCRIPTOR>
      <SPOT_DESCRIPTOR>
        <SPOT_DECODE_SPEC>
          <SPOT_LENGTH>250</SPOT_LENGTH>
          <READ_SPEC>
            <READ_INDEX>0</READ_INDEX>
            <READ_CLASS>Technical Read</READ_CLASS>
            <READ_TYPE>Adapter</READ_TYPE>
            <BASE_COORD>1</BASE_COORD>
          </READ_SPEC>
          <READ_SPEC>
            <READ_INDEX>1</READ_INDEX>
            <READ_CLASS>Application Read</READ_CLASS>
            <READ_TYPE>Forward</READ_TYPE>
            <BASE_COORD>5</BASE_COORD>
          </READ_SPEC>
        </SPOT_DECODE_SPEC>
      </SPOT_DESCRIPTOR>
    </DESIGN>
    <PLATFORM>
      <ILLUMINA>
        <INSTRUMENT_MODEL>Illumina MiSeq</INSTRUMENT_M
      </ILLUMINA>
    </PLATFORM>
    <PROCESSING>
      <PIPELINE>
        <PIPE_SECTION>
          <STEP_INDEX>1</STEP_INDEX>
          <PREV_STEP_INDEX>NIL</PREV_STEP_INDEX>
```

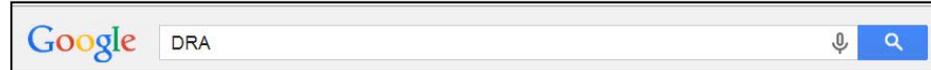
Spot Descriptor には、
アダプター配列などの
technical read も設定可能

※ <SPOT_DESCRIPTOR> の記載例
<http://trace.ddbj.nig.ac.jp/dra/example.html>

インターフェース上でメタデータを作成後、
XMLファイルを出し入れすることで、
technical reads を表現することが出来ます。

まずは、DRA ウェブサイトを CHECK !

DRA HP: <http://trace.ddbj.nig.ac.jp/dra/index.html>



メンテナンスなどの
NEWS



The screenshot shows the DDBJ Sequence Read Archive (DRA) homepage. At the top, there is a navigation bar with links for 'Login & Submit', 'Databases', 'English', and 'Contact'. Below this is a search bar with the text 'Google' and 'DRA' entered. The main content area features a 'News' section with two recent updates: one from August 13, 2014, regarding a summer holiday, and another from August 6, 2014, regarding a system update for fastq files. Below the news is a paragraph describing the DRA database and its international collaborations. At the bottom, there are three main service buttons: '検索 DRAsearch', 'DRA Handbook', and 'DDBJ slideshare'. A footer section contains three columns of links: 'Databases' (including Nucleotide Sequence Database, Sequence Read Archive, Trace Archive, Omics Archive, BioProject, BioSample, and Japanese Genotype-phenotype Archive), 'Resources' (including getentry, ARSA, TXSearch, BLAST, Vector Screening System, ClustalW, Read Annotation Pipeline, and MIGAP), and 'DDBJ Information' (including DDBJ RSS, DDBJ on Twitter, DDBJ on Youtube, DDBJ on slideshare, DDBJing, and DDBJ FTP Site). A site map and other utility links are also present at the very bottom.

登録開始・再開
“D-way” ログイン

DRASearch

DRA登録マニュアル

登録開始前に、マニュアルをゴ－読ください

DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html>

DRA登録の流れ

1. 新規 D-way アカウントの作成

2. BioProject の登録

3. BioSample の登録

4. 新規 DRA Submission の作成

5. データファイルの転送

6. メタデータの作成

7. Validation 成功

8. アクセッション番号の受領

案

支援依頼者

登録実務担当者

D-wayアカウントと
Password を共有

作業

作業

作業

BP/BS
「登録者情報」
実務担当者

作業

DRA
「登録者情報」
実務担当者

D-wayで、アクセッ
ション番号を共有

作業

BP/BS/DRA
「登録者情報」
支援依頼者
に変更

1. 新規 D-way アカウントの作成 (1)

登録アカウントHandbook: <http://trace.ddbj.nig.ac.jp/book/account.html>

D-way: <https://trace.ddbj.nig.ac.jp/D-way/>

Account information for dradev

Update

First Name	Noriko
Last Name	Furuya
Middle Name	
E-mail	trace@ddbj.nig.ac.jp
Organization	National Institute of Genetics
Department (1)	CIB-DDBJ
Department (2)	DRA Developers
Lab / Group	
Country	Japan
Zip code	
State/Prefecture	
City	
Street	
Post Office	
Phone	5566 Ext.
Fax	55666
URL	

Center for DRA

Center Name OR

Center Full Name

Technical Contact

Name

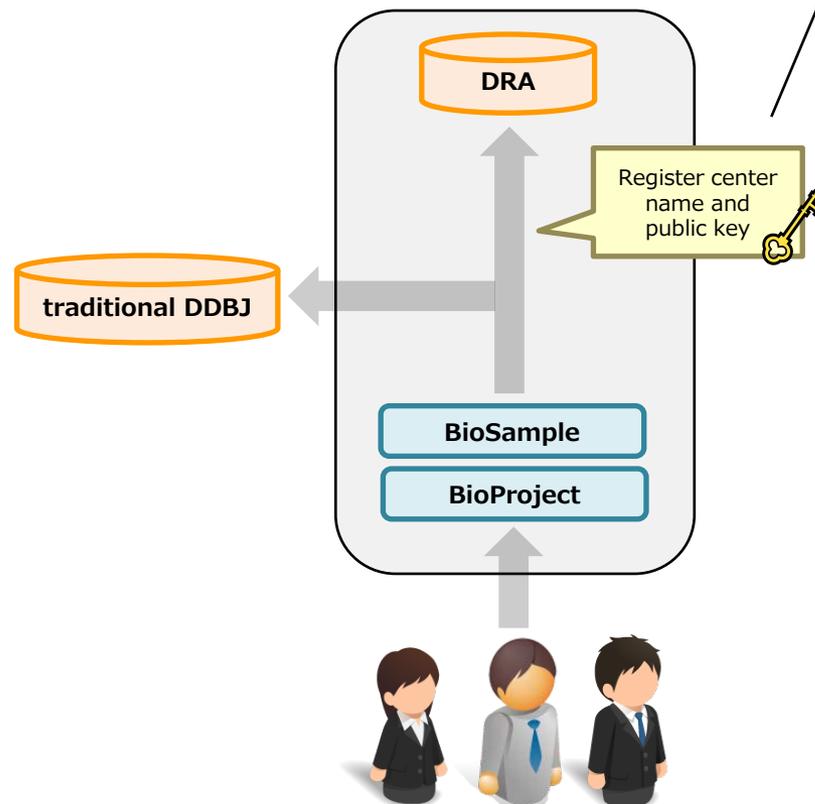
E-mail

Public Key

Center name

公開鍵の登録

DRA に登録するためには、“Center name” と “公開鍵” の登録が必要



1. 新規 D-way アカウントの作成 (2)

公開鍵/秘密鍵: <http://trace.ddbj.nig.ac.jp/book/account.html#DRA> への登録権限を追加

DRA への登録権限を追加

DDBJ Sequence Read Archive (DRA) ヘデータを登録するため、アカウントに center name と公開鍵を登録します。Center name は DRA が組織に対して割り振っている略号です。公開鍵はユーザの認証に用いられます。

公開鍵/秘密鍵ペアの生成

Windows



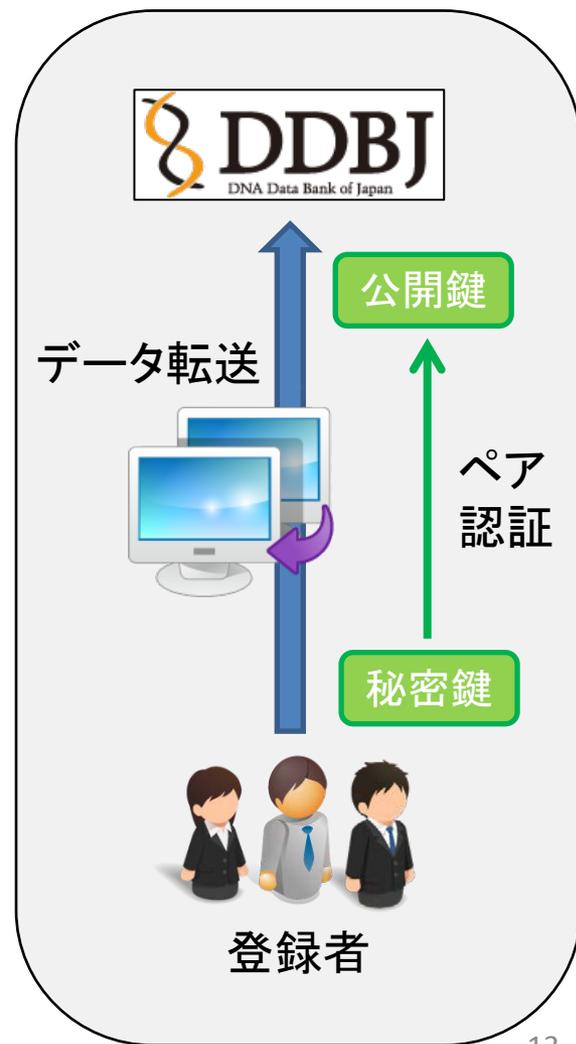
"PuTTY Key Generator" をインストールし、起動します。下のように設定し [Generate] をクリックします。



ウィンドウのなかでマウスポインターをランダムに動かして鍵を生成させます。生成される公開鍵と秘密鍵を保存します。

Mac OS X
Unix

Center name と公開鍵の登録



2. BioProject の登録 (1)

BioProject Handbook: <http://trace.ddbj.nig.ac.jp/bioproject/submission.html>

D-way: <https://trace.ddbj.nig.ac.jp/D-way/>

Sequence Read Archive

Home Handbook FAQ Search Download Pipeline About DRA

News

2014年08月13日 **New**: DDBJ 夏季休業のお知らせ (8/14-15) [less](#)

2014年08月14日 (木)~15日(金)、DRAおよびBioProject、BioSampleの窓口対応は休業となります。D-way 登録システム、DRA および BioProject、BioSample 検索システムは引き続きご利用可能です。

2014年08月06日 **New**: 登録システムがリード長が一定ではない fastq ファイルに対応 [less](#)

DRA 登録システムがリード長が一定ではない fastq ファイルに対応いたしました。マニュアル

- ・リード長が揃っている fastq ファイル: Run の file type で fastq を選択
- ・リード長が一定ではない fastq ファイル: Run の file type で generic_fastq を選択

DDBJ Sequence Read Archive (DRA) は Roche 454 GS System®, Illumina Genome Analyzer®, Applied Biosystems SOLiD® System などの次世代シーケンサからの出力データのためのデータベースです。DRA は International Nucleotide Sequence Database Collaboration (INSDC) のメンバーであり、NCBI Sequence Read Archive (SRA) と EBI Sequence Read Archive (ERA) との連携協力のもと、運営されています。従来のキャピラリーシーケンサからの出力データは DDBJ Trace Archive に登録してください。

検索 DRASearch | DRA Handbook | DDBJ slideshare

Databases: Nucleotide Sequence Database, Sequence Read Archive, Trace Archive, Omics Archive, BioProject, BioSample, Japanese Genotype-phenotype Archive

Resources: getentry, ARSA, TVSearch, BLAST, Vector Screening System, ClustalW, Read Annotation Pipeline, MLAGP

DDBJ Information: DDBJ RSS, DDBJ on Twitter, DDBJ on Youtube, DDBJ on slideshare, DDBJing, DDBJ FTP Site

TOP | DRA | BioProject | BioSample

dradev | Account | Password | Logout

D-way

Account: dradev

DDBJ Sequence Read Archive (DRA)

BioProject

BioSample

TOP | DRA | BioProject | BioSample

dradev | Account | Password | Logout

D-way

BioProject submission list for dradev

Submit new Project

Temporary Submission ID	BioProject ID	Status	Title	Project Type	Created Date
PSUB003562	----	In progress		----	2014-08-07
PSUB003476	----	In progress	xx	----	2014-07-14
PSUB003348	----	In progress	xxxxxxxxxxxxxxxxxxxx	----	2014-05-26
PSUB003313	PRJDB2864	Cancel	test	primary	2014-05-12
PSUB000611	----	Cancel	test 20130425	primary	2012-09-07
PSUB000488	----	In progress	s	----	2012-08-08
PSUB000486	----	In progress		----	2012-08-08
PSUB000124	----	In progress	hogex	----	2012-03-17
PSUB000034	----	In progress	TEST SUBMISSION FOR DEMO	----	2011-12-02

[Submit new Project] ボタンから、
新規作成

2. BioProject の登録 (2)

Submitter > General info > Project type > Target > Publication > Overview の順。
赤色のアスタリスク記号 (*)は、必須項目。英語入力。

TOP | DRA | BioProject | BioSample dradev | Account | Password | Logout

D-way

BioProject Temporary Submission ID: PSUB000488

SUBMITTER GENERAL INFO PROJECT TYPE TARGET PUBLICATION OVERVIEW

Project Description

Project title*: Retinal transcriptome profiling at transcription start sites after axonal injury

Description*: In order to comprehensively study changes in gene transcription at transcription start sites. Using CAGE data, we attempted to determine dynamic changes in the regulation of the transcriptional network mediating RGC death after axonal injury.

Provide enough information in the description (more than 100 characters) for other users to interpret the data.

Comments to DDBJ staff:

Project initiative which is already registered in the BioProject. Yes No

Links

Link	URL	Delete
		Delete

Add another Link

Grants

Agency	Agency abbreviation	Grant ID	Grant title	Delete
Japanese Ministry of Educa	MEXT	221S0002	Genome Science	Delete

Add another Grant

Consortium



Grant

Agency : Japanese Ministry of Education, Culture, Sports, Science and Technology
Agency abbreviation : MEXT
Grant ID : 221S0002
Grant title: Genome Science

Description:
研究の目的やゴールについて、100文字以上、記述

2. BioProject の登録 (3)

TOP | DRA | **BioProject** | BioSample dradev | Account | Password | Logout

D-way

BioProject Temporary Submission ID: PSUB000488

SUBMITTER GENERAL INFO **PROJECT TYPE** TARGET PUBLICATION OVERVIEW

Project data type
Project data type*: Transcriptome

Sample scope/Material/Capture
Sample scope*: Monoisolate Material*: Transcriptome Capture*: Whole
Methodology*: Sequencing

Objective*
Raw Sequence Reads :
Sequence :
Analysis :
Assembly :
Annotation :
Variation :
Epigenetic Markers :
Expression :
Maps :
Phenotype :
Other :

Continue

Capture
The scale, or type, of information that the study is designed to generate from the sample material.

Whole
Clone Ends
Exome
Targeted Locus/Loci
Random Survey
Other

青文字にカーソルを当てると、解説文がポップアップで表示。

最後に [Submit] ボタンをクリックした後、D-way 上で修正は出来ません。アナテータにメール (bioproject@ddbj.nig.ac.jp) で知らせてください。
アナテータが査定を行ってから、BioProject IDを発行するので、少しお時間がかかります。

3. BioSample の登録 (1)

BioSample Handbook: <http://trace.ddbj.nig.ac.jp/biosample/submission.html>

D-way: <https://trace.ddbj.nig.ac.jp/D-way/>

[Submit new Sample] ボタンから、新規作成。
左から右に向かって、順にタブを移動。

TOP | DRA | BioProject | **BioSample** | dradev | Account | Password | Logout

D-way

BioSample Temporary Submission ID: SSUB000002

SUBMITTER | GENERAL INFO | **SAMPLE TYPE** | ATTRIBUTES | PUBLICATION | COMMENTS | OVERVIEW

Sample type

Core Package*:

- General Sample
- Genome, metagenome or marker sequences (MlxS compliant)
 - Environmental/Metagenome
 - Cultured Bacterial/Archaeal
 - Eukaryotic
 - Viral
 - Specimen
 - Survey related

Environmental package (MlxS Sample):

- No package
- air
- host-associated
- human-associated
- human-gut
- human-oral
- human-skin
- human-vaginal
- microbial
- miscellaneous
- plant-associated
- sediment
- soil
- wastewater
- water

Continue

“General Sample”
= 主に、transcriptome

“Genome, metagenome or marker sequences”
= WGSやメタゲノムなど

16S rRNA, 18S rRNA などのマーカー配列の場合は、“Survey related”

3. BioSample の登録 (2)

BioSample Handbook: <http://trace.ddbj.nig.ac.jp/biosample/submission.html>

D-way: <https://trace.ddbj.nig.ac.jp/D-way/>

[Download BioSample worksheet]
をクリック。

sample dradev | Account | Password | Logout

D-way

BioSample Temporary Submission ID: SSUB000002

SUBMITTER GENERAL INFO SAMPLE TYPE **ATTRIBUTES** PUBLICATION COMMENTS OVERVIEW

Attributes

Attributes file name *: ファイルを選択 選択されていません

Download BioSample worksheet

Download and edit the worksheet in spreadsheet program or text editor.
Be sure to upload tab-delimited text file and NOT excel spreadsheet.

External Link

NCBI Taxonomy

Continue

template.tsv

すべてのダウンロードを表示

HOME > Sample Attribute

サンプル属性

List all sample attributes

Sample type (Core Package)

- General Sample
- Genome, metagenome or marker sequences (MixS compliant)
- Environmental/Metagenome Genomic Sequences (MIMS)
- Cultured Bacterial/Archaeal Genomic Sequences (MIGS)
- Eukaryotic Genomic Sequences (MIGS)
- Viral Genomic Sequences (MIGS)
- Specimen Marker Sequences (MIMARKS)
- Survey related Marker Sequences (MIMARKS)

Environmental package (MixS Sample)

- No package
- air
- host-associated
- human-associated
- human-gut
- human-oral
- human-skin
- human-vaginal
- microbial
- miscellaneous
- plant-associated
- sediment
- soil
- wastewater
- water

DEFINITION DOWNLOAD

Sample type を選択し、DEFINITION ボタンで attribute の定義と書式を見ることができます。DOWNLOAD ボタンで BioSample ワークシートをダウンロードすることができます。

Name	Synonyms	Description (Japanese)	Description	Value format
sample name*		Sample name は登録者がサンプルに付ける名前です。Sample name のフォーマットは決まっていますが、簡潔でサンプルをよく表している名前を使うことを推奨します。Sample name は Submission においてユニークする必要があります。登録後は Sample name を変更することができません。	Sample name is a name that you choose for the sample. It can have any format, but we suggest that you make it concise, unique and consistent within your lab, and as informative as possible. Every sample name from a single submitter must be unique in a submission. Sample name cannot be changed after registration.	
organism*		NCBI Taxonomy database に登録されている最も下位のランクの生物名 (適切な場合は species まで)。データベースに登録されていない場合、未登録の生物に関する情報をできるだけ記入してください。DDBJ スタッフが NCBI Taxonomy に未登録の生物を申請します。	The most descriptive organism name for this sample (to the species, if relevant) in the NCBI Taxonomy database. If it is not in the database, provide as much information about the organism as possible and the DDJB staff apply a new TaxID to NCBI Taxonomy.	
taxonomy id*		NCBI Taxonomy identifier. 個別の生物、メタゲノム、環境サンプルに割り当てられています。	NCBI Taxonomy identifier. This is appropriate for individual organisms, some metagenomes and environmental samples.	
sample title		Sample Title は公開された DDJB サンプルレコードのヘッダーとして表示されます。"sample title" が入力されていない場合、sample type と organism name を組み合	Sample title will appear in the final DDJB BioSample record as the header for your sample. The title should be short and informative.	

Attributeの項目定義が分からない時は、ウェブで、「サンプル属性」を参照。

該当項目を選択後、
[DEFINITION] ボタンをクリック

サンプル条件ごとに、異なる項目が表示

3. BioSample の登録 (4)

TOP | DRA | BioProject | BioSample dradev | Account | Password | Logout

D-way

BioSample Temporary Submission ID: SSUB000002

SUBMITTER GENERAL INFO SAMPLE TYPE ATTRIBUTES PUBLICATION COMMENTS OVERVIEW

Attributes

Attributes file name * 選択されていません

[Download BioSample worksheet](#)
Download and edit the worksheet in spreadsheet program or text editor.
Be sure to upload tab-delimited text file and Microsoft Excel spreadsheet.

External Link

NCBI Taxonomy

開く

Downloads

attributes.tsv

attributes.tsv Delete

*sample name *organism *taxonomy id sample title strain breed cultivar isolate label description *biome *collection_date *feature *geo_loc_name *lat_lon *material *project_name rel_to_oxygen *smp_collect_device smp_mat_process *sample_size chem_administration *elev methane misc_param organism_count oxy_stat_samp perturbation smp_store_dur smp_store_loc smp_store_temp temp *depth alkalinity alkyl_diethers aminopept_act ammonium bacteria_carb_prod biomass bishomohopanol bromide calcium carb_nitro_ratio chloride chlorophyll diether_lipids diss_carb_dioxide diss_hydrogen diss_inorg_carb diss_org_carb diss_org_nitro diss_oxygen glucosidase_act magnesium mean_frict_vel mean_peak_frict_vel n_alkanes nitrate nitrite nitro org_carb org_matter org_nitro ph part_org_carb petroleum_hydrocarb phaeopigments phosphate phosphlipid_fatt_acid potassium pressure redox_potential salinity silicate sodium sulfate sulfide tot_carb tot_nitro tot_org_carb turbidity water_content density particle_class porosity sediment_type tidal_stage bioproject id sample comment GW_1L_120728 groundwater metagenome 717931 Groudwater sample 1L 120728 MID-37 urban 2012-07-28 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 39 m PRJDB2908 MID sequence: TACACACACT GW_1L_121107 groundwater metagenome 717931 Groudwater sample 1L 121107 MID-41 urban 2012-11-07 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 39 m PRJDB2908 MID sequence: TAGGTAGAT GW_1U_120728 groundwater metagenome 717931 Groudwater sample 1U 120728 urban 2012-07-28 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 17 m PRJDB2908 MID sequence: CGACGTGACT GW_1U_121107 groundwater metagenome 717931 Groudwater sample 1U 121107 MID-40 urban 2012-11-07 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 17 m PRJDB2908 MID sequence: TACGCTGCT GW_2L_120728 groundwater metagenome 717931 Groudwater sample 2L 120728 MID-39 urban 2012-07-28 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 39 m PRJDB2908 MID sequence: TACAGATCGT GW_2L_121107 groundwater metagenome 717931 Groudwater sample 2L 121107 MID-43 urban 2012-11-07 university campus Japan:Saitama, Saitama University 35.862263 N 139.609454 E ground water Analysis of sequences collected from groundwater 10.0 m 39 m PRJDB2908 MID sequence: TCCGACTAGT GW_2L_120728 groundwater metagenome

最後に [Submit] ボタンをクリックした後、D-way上で修正は出来ません。アナテータにメール (biosample@ddbj.nig.ac.jp) で知らせてください。
アナテータが査定を行ってから、BioSample ID を発行するので、少しお時間がかかります。

4. 新規 DRA Submission の作成

DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html#DRA> へのデータ登録方法

TOP **DRA** Project List | BioProject | BioSample test01 | Account | Password | Logout

D-way

DRA submission list for test01

Create new Submission(s) Number of submission:

Submission ID	Accession	Status	Creation Date	Hold Date
<input type="text"/> <input type="button" value="Reset"/>				
test01-0005		new	2014-03-12	----
test01-0004		metadata_submitted	2014-02-19	2016-02-20
test01-0003	DRA001721	completed	2014-02-18	2016-03-03
test01-0002	DRA001720	public	2014-02-17	----
test01-0001		metadata_submitted	2014-02-17	2014-03-06

クリックして、
新規 DRA Submission
を作成

DRA 登録のステータス一覧

ステータス	状態
new	メタデータの投稿前
metadata_submitted	メタデータが投稿された
data_validating	データファイルの Validation 中
data_error	データファイルの Validation エラー
submission_validated	メタデータとデータファイルの Validation が完了
completed	アクセッション番号が発行された
confidential	非公開
public	公開

5. データファイルの転送

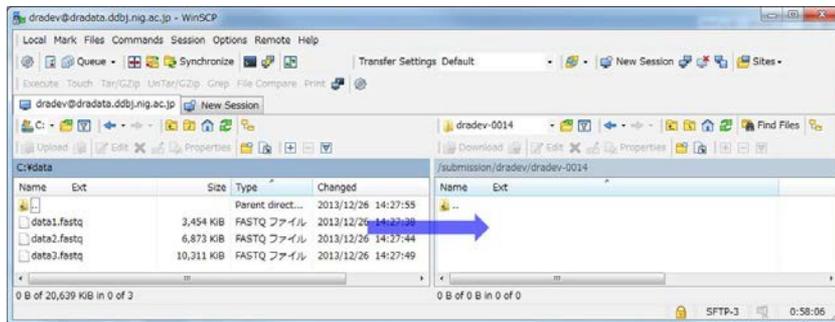
DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html#シークエンスデータのアップロード>

SCP (Secure Copy) 転送

sshの機能を使ってセキュリティの高いファイル転送を行う。
認証情報と、やり取りされるデータとの両方が、暗号化されてネットワーク上を流れる。

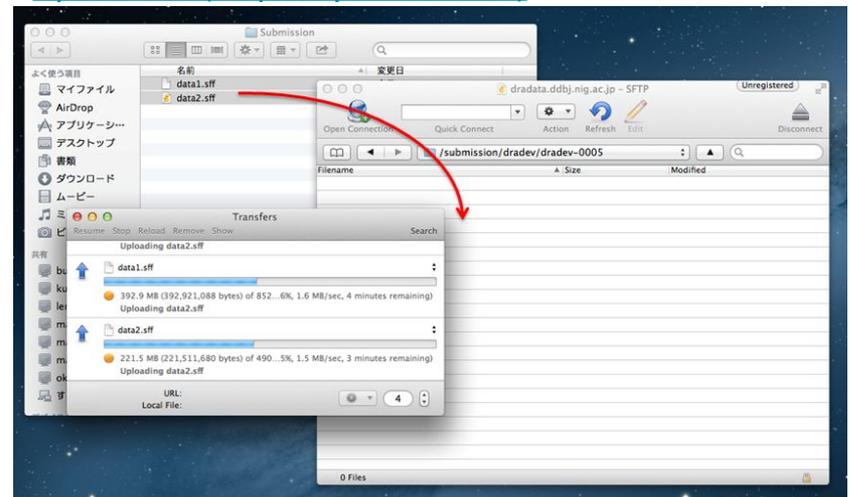
Windows

[WinSCP \(http://winscp.net/eng/download.php\)](http://winscp.net/eng/download.php)



Mac OS X

[Cyberduck \(http://cyberduck.ch\)](http://cyberduck.ch)



Linux / Mac OS X

ターミナル

```
$ scp <Your Files> <D-way Login ID>@dradata.ddbj.nig.ac.jp:~/<Submission ID>  
Enter passphrase for key '/home/you/.ssh/id_rsa':  
$ ssh <D-way Login ID>@dradata.ddbj.nig.ac.jp
```

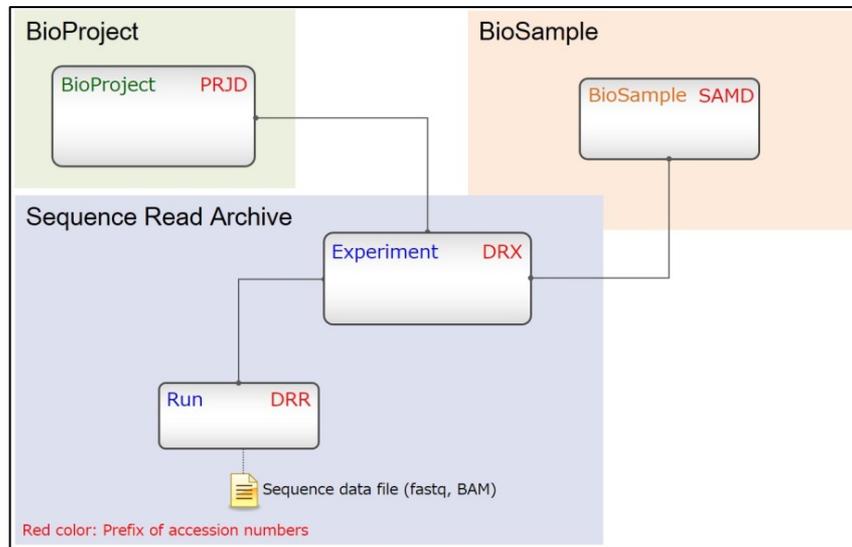
新DRA登録システム(2014-05-12開始)

technical readsを残したまま登録したい場合は、XMLの修正が必要になりました。(P. 8 参照)

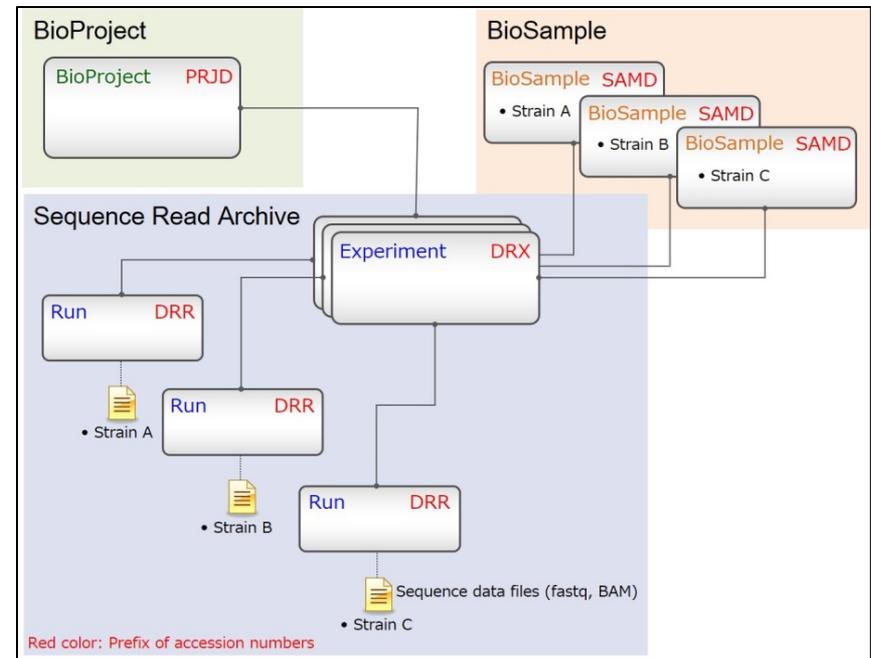
6. メタデータの作成 --- object の構成 ---

DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html#メタデータの作成>

最もシンプルなケース



3つの菌株の比較ゲノム解析のケース



6. メタデータの作成 --- Submission ---

Submission > Study > Sample > Experiment > Run > (Analysis) の順に、英語で入力
赤色のアスタリスク記号 (*) は、必須項目

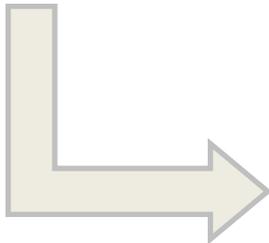
TOP | DRA | Project List | BioProject | BioSample test01 | Account | Password | Logout

D-way

Submission ID : test01-0005

Submission ID	Accession #	Status	Creation Date	Hold Date
test01-0005		new	2014-03-12	----

Submit / Update Metadata



Submission ID : test01-0005

Submit

Submission Study Sample Experiment Run Analysis

Center Name
Center Name*: NIG Lab Name*: lab, dept2, dept1, org

Hold/Release
Hold Until*: Hold Until 2016-03-20
 Immediate

Submitter
Add Submitter

#	Name*		Delete
1	first middle last		Delete
2	first middle last 2	test01@test.test.com	Delete
3	first middle last 3	test01@test.test.test.com	Delete

Save Study>

公開日を、2年後まで選択可能

この段階では、登録者情報は、登録実務担当者。

6. メタデータの作成 --- Study/Sample ---

該当する BioProject ID を 1つ 選択する。

Submission ID : test01-0005

Submit

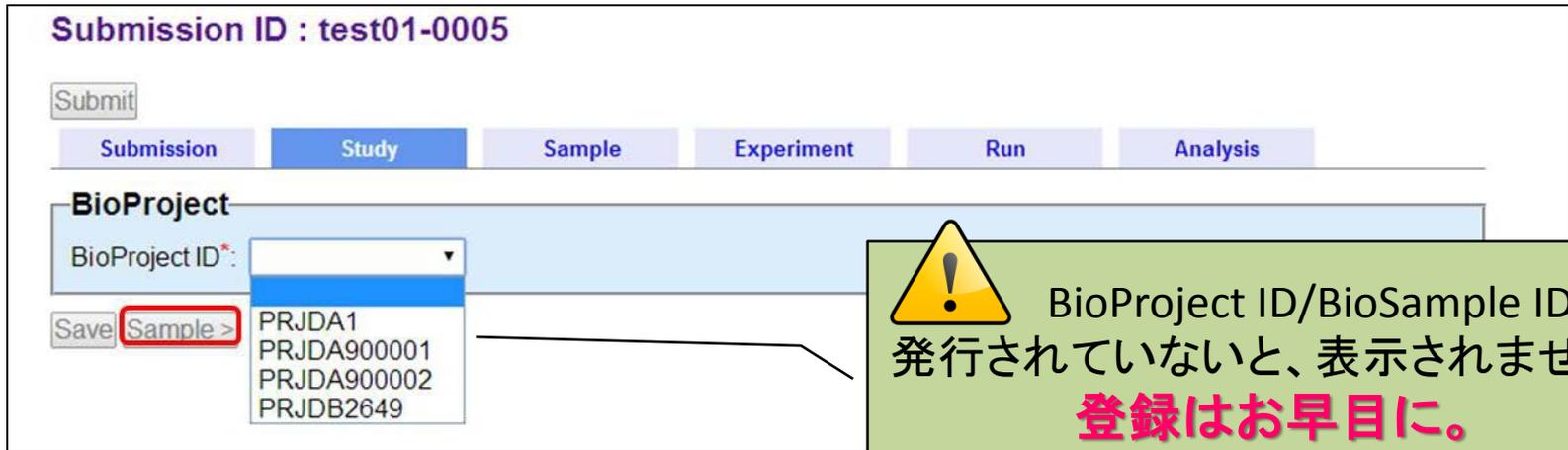
Submission Study Sample Experiment Run Analysis

BioProject

BioProject ID*:

Save Sample >

- PRJDA1
- PRJDA900001
- PRJDA900002
- PRJDB2649



 BioProject ID/BioSample ID が発行されていないと、表示されません。
登録はお早目に。

該当する BioSample ID を 1つ以上 選択する。

Submission ID : test01-0005

Submit

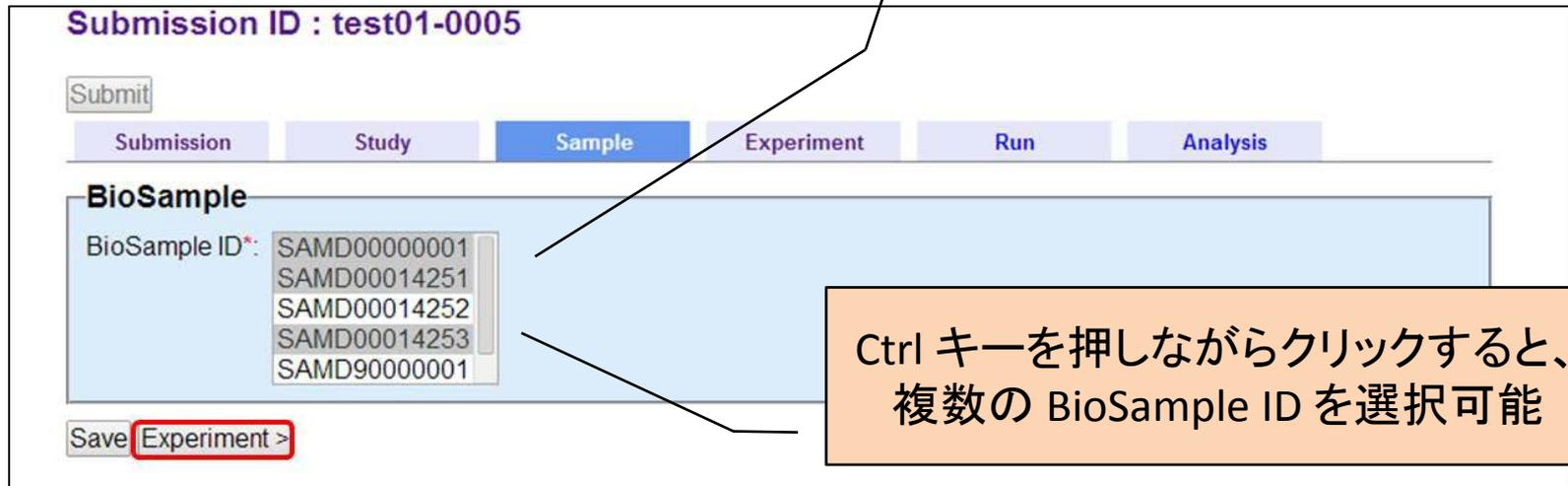
Submission Study Sample Experiment Run Analysis

BioSample

BioSample ID*:

Save Experiment >

- SAMD00000001
- SAMD00014251
- SAMD00014252
- SAMD00014253
- SAMD90000001



Ctrl キーを押しながらクリックすると、複数の BioSample ID を選択可能

6. メタデータの作成 --- Experiment (2) ---

タブ区切りテキストファイル (.tsv) としてダウンロードし、Excel[®] などの表計算ソフトでメタデータを作成可能

Submission ID : test01-0005

Submit

Submission Study Sample Experiment Run Analysis

Edit metadata by using tab-delimited text (TSV) file

ファイルを選択 選択されていません

Upload TSV file Download TSV file

Metadata

Add new Experiment(s) 1 Copy Experiment #1

#	Alias	Library Name	Library Source*	Library Selection*	Library Strategy*	Library Construction Protocol	Instrument*	Spot Type*	Nominal Length	Nominal Sdev	Spot Length	BioSample Used*	Delete	Delete All
New			GENOMIC	RANDOM	WGS		Illumina HiSeq 2500	paired (FR)				SAMD00000001	Delete	Delete
New													Delete	Delete
New													Delete	Delete

Save Run Analysis >

test01-0004.experiment.tsv - Microsoft Excel

Alt	Alias	Title	Library Name	Library Source	Library Selection	Library Strategy	Library Construction Protocol	Instrument	Spot Type	Nominal Length	Nominal Sdev	Spot Length	BioSample Used
1	test01-0004_Experiment_0001	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004251	GENOMIC	RANDOM	WGS			454 GS	paired (FF)				SAMD00004251
2	test01-0004_Experiment_0002	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004252	GENOMIC	RANDOM	WGS			455 GS	paired (FF)				SAMD00004252
3	test01-0004_Experiment_0003	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004253	GENOMIC	RANDOM	WGS			456 GS	paired (FF)				SAMD00004253
4	test01-0004_Experiment_0004	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004254	GENOMIC	RANDOM	WGS			457 GS	paired (FF)				SAMD00004254
5	test01-0004_Experiment_0005	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004255	GENOMIC	RANDOM	WGS			458 GS	paired (FF)				SAMD00004255
6	test01-0004_Experiment_0006	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004256	GENOMIC	RANDOM	WGS			459 GS	paired (FF)				SAMD00004256
7	test01-0004_Experiment_0007	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004257	GENOMIC	RANDOM	WGS			460 GS	paired (FF)				SAMD00004257
8	test01-0004_Experiment_0008	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004258	GENOMIC	RANDOM	WGS			461 GS	paired (FF)				SAMD00004258
9	test01-0004_Experiment_0009	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004259	GENOMIC	RANDOM	WGS			462 GS	paired (FF)				SAMD00004259
10	test01-0004_Experiment_0010	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004260	GENOMIC	RANDOM	WGS			463 GS	paired (FF)				SAMD00004260
11	test01-0004_Experiment_0011	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004261	GENOMIC	RANDOM	WGS			464 GS	paired (FF)				SAMD00004261
12	test01-0004_Experiment_0012	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004262	GENOMIC	RANDOM	WGS			465 GS	paired (FF)				SAMD00004262
13	test01-0004_Experiment_0013	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004263	GENOMIC	RANDOM	WGS			466 GS	paired (FF)				SAMD00004263
14	test01-0004_Experiment_0014	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004264	GENOMIC	RANDOM	WGS			467 GS	paired (FF)				SAMD00004264
15	test01-0004_Experiment_0015	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004265	GENOMIC	RANDOM	WGS			468 GS	paired (FF)				SAMD00004265
16	test01-0004_Experiment_0016	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004266	GENOMIC	RANDOM	WGS			469 GS	paired (FF)				SAMD00004266
17	test01-0004_Experiment_0017	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004267	GENOMIC	RANDOM	WGS			470 GS	paired (FF)				SAMD00004267
18	test01-0004_Experiment_0018	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004268	GENOMIC	RANDOM	WGS			471 GS	paired (FF)				SAMD00004268
19	test01-0004_Experiment_0019	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004269	GENOMIC	RANDOM	WGS			472 GS	paired (FF)				SAMD00004269
20	test01-0004_Experiment_0020	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004270	GENOMIC	RANDOM	WGS			473 GS	paired (FF)				SAMD00004270
21	test01-0004_Experiment_0021	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004271	GENOMIC	RANDOM	WGS			474 GS	paired (FF)				SAMD00004271
22	test01-0004_Experiment_0022	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004272	GENOMIC	RANDOM	WGS			475 GS	paired (FF)				SAMD00004272
23	test01-0004_Experiment_0023	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004273	GENOMIC	RANDOM	WGS			476 GS	paired (FF)				SAMD00004273
24	test01-0004_Experiment_0024	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004274	GENOMIC	RANDOM	WGS			477 GS	paired (FF)				SAMD00004274
25	test01-0004_Experiment_0025	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004275	GENOMIC	RANDOM	WGS			478 GS	paired (FF)				SAMD00004275
26	test01-0004_Experiment_0026	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004276	GENOMIC	RANDOM	WGS			479 GS	paired (FF)				SAMD00004276
27	test01-0004_Experiment_0027	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004277	GENOMIC	RANDOM	WGS			480 GS	paired (FF)				SAMD00004277
28	test01-0004_Experiment_0028	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004278	GENOMIC	RANDOM	WGS			481 GS	paired (FF)				SAMD00004278
29	test01-0004_Experiment_0029	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004279	GENOMIC	RANDOM	WGS			482 GS	paired (FF)				SAMD00004279
30	test01-0004_Experiment_0030	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004280	GENOMIC	RANDOM	WGS			483 GS	paired (FF)				SAMD00004280
31	test01-0004_Experiment_0031	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004281	GENOMIC	RANDOM	WGS			484 GS	paired (FF)				SAMD00004281
32	test01-0004_Experiment_0032	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004282	GENOMIC	RANDOM	WGS			485 GS	paired (FF)				SAMD00004282
33	test01-0004_Experiment_0033	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004283	GENOMIC	RANDOM	WGS			486 GS	paired (FF)				SAMD00004283
34	test01-0004_Experiment_0034	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004284	GENOMIC	RANDOM	WGS			487 GS	paired (FF)				SAMD00004284
35	test01-0004_Experiment_0035	Exp Accession: 454 GS 20 paired end sequencing of SAMD00004285	GENOMIC	RANDOM	WGS			488 GS	paired (FF)				SAMD00004285

6. メタデータの作成 --- Run (1) ---

Run のメタデータを、順に設定する。

Submission ID : test01-0004

③ -> **Submit**

Submission Study Sample Experiment **Run** **Analysis** <- option

Edit metadata by using tab-delimited text (TSV) file

ファイルを選択 選択されていません Upload TSV file Download TSV file

Metadata

① -> **Add new Run(s)** 1

#	Alias	Experiment Referenced*	Delete	Delete All
1	test01-0004_Run_0001	test01-0004_Experiment_0001 ▼	Delete	
2	test01-0004_Run_0002	test01-0004_Experiment_0002 ▼	Delete	

Select data files for Run <- ②

Save

① を設定後、② [Select data files for Run] のページへ JUMP !

6. メタデータの作成 --- Run (2) ---

② [Select data files for Run] で、データファイルの詳細を設定する。

Submission ID : test01-0004

Submit

Submission Study Sample Experiment **Run** Analysis

Data files for Run/Analysis

Edit metadata by using tab-delimited text (TSV) file

ファイルを選択 選択されていません Upload TSV file Download TSV file

File

#	Mode	File Name	Run/Analysis contains files*	File Type*	Copy #1	MD5 Checksum*
1	Run	454Reads.MID3_HL_01.sff	test01-0004_Run_0001	sff		615a3619640e0aaafae6021e2ecbd688
2	Run	454Reads.MID3_HL_02.sff	test01-0004_Run_0001	sff		df5c92015c6da9e8765870e3da059830
3	Analysis	454Reads.MID3_HL_03.sff				
4		454Reads.MID3_HL_04.sff				
5		test01.fastq				
6		test02.fastq				
7		test03.fastq				
8		test04.fastq				

Save < Run

リード長が一定ではない fastq ファイルに対応しました。
“generic_fastq” を選択してください。

MD5値については、次ページで紹介

転送済みのファイルが、自動表示される

6. メタデータの作成 --- Run (3) ---

補足: MD5 値 http://trace.ddbj.nig.ac.jp/dra/submission.html#補足_MD5_値

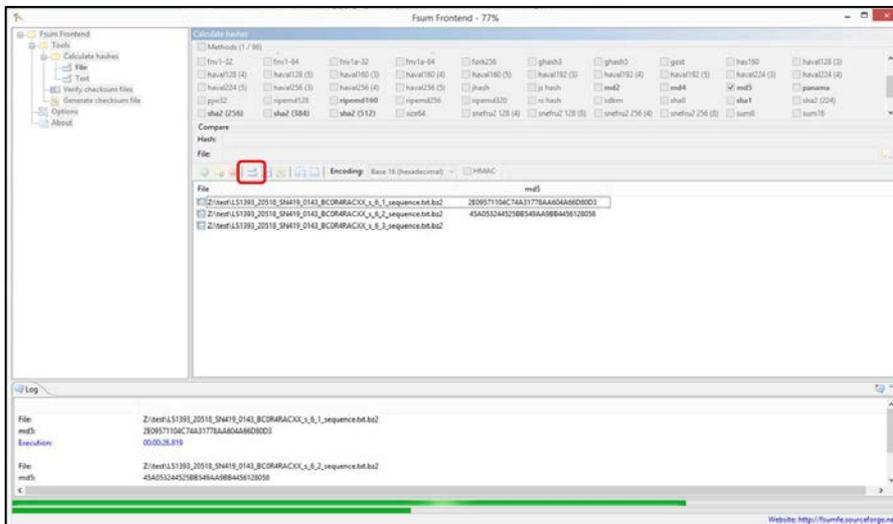
MD5 (Message Digest Algorithm 5)

32桁の英数字から成るハッシュ関数。ファイルが破損していると、ファイルのMD5値が変化する。

DRA では、到着したファイルの MD5 値の一致をチェックすることで、ファイルの破損がないかどうか確認している。

Windows

Fsum Frontend (<http://fsumfe.sourceforge.net/>)



Mac OS X

ターミナル

```
$ md5 file1 file2
9F6E6800CFAE7749EB6C486619254B9C file1
B636E0063E29709B6082F324C76D0911 file2
```

Linux

ターミナル

```
$ md5sum file1 file2
9F6E6800CFAE7749EB6C486619254B9C file1
B636E0063E29709B6082F324C76D0911 file2
```

7. Validation 成功 (1)

DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html#データファイルの Validation>

メタデータとデータファイルの整合性を検証し、アーカイブ用 SRA ファイルを作成する作業。
ファイルサイズが大きかったり、混雑していると、長時間かかることがあるので注意。

TOP | DRA | Project List | BioProject | BioSample test01 | Account | Password | Logout

D-way

Submission ID : test01-0004

Submission ID	Accession #	Status	Creation Date	Hold Date
test01-0004		metadata_submitted	2014-02-19	2016-02-20

[Submit / Update Metadata](#)

XML Upload [-]

Object	File
Submission	ファイルを選択 選択されていません Download
Experiment	ファイルを選択 選択されていません Download
Run	ファイルを選択 選択されていません Download
Analysis	ファイルを選択 選択されていません Download

[Upload](#)

[Validate data files](#) [Stop validation](#)

* Stop validation to edit metadata or upload data files
Upload and validate run data files along with the submitted metadata to start reviewing process.
This submission will be reviewed when the status become "submission_validated" or "data_error"

Component [-]

Object1	BioProject ID	BioSample ID	Accession #	Center Name	Alias
Submission				1000G_DCC	test01-0004_Submission
experiment	PRJDA1	SAMD00014251		1000G_DCC	test01-0004_Experiment_0001
+ run				1000G_DCC	test01-0004_Run_0001
experiment	PRJDA1	SAMD00014252		1000G_DCC	test01-0004_Experiment_0002
+ run				1000G_DCC	test01-0004_Run_0002
+ analysis	PRJDA1			1000G_DCC	test01-0004_Analysis_0001

クリックして、
Validation を開始

7. Validation 成功 (2)

Validation で、"data_error" が発生したら・・・

[Stop validation] をクリックして Validation 処理を停止した後、メタデータを修正、もしくは、データファイルを再アップロードし、再度 validation を開始します。

<エラーログの例>

spot length をメタデータでは400 と設定したが、実際のデータは 500 だったケース

```
fastq-load.2.3.5 err: data excessive while validating formatter within short read archive module - cumulative length of reads
data in file(s): 500 is greater than spot length declared in experiment: 400 in spot 'M00424:28:000000000-
A2G79:1:1101:18351:2171'
fastq-load.2.3.5 warn: data excessive while validating formatter within short read archive module -
file="Cxxx_L001_R2_001.fastq" line="5" spot_name="M00424:28:000000000-A2G79:1:1101:18351:2171"
fastq-load.2.3.5 warn: data excessive while validating formatter within short read archive module - bad spot
M00424:28:000000000-A2G79:1:1101:18351:2171
```

お困りの際は、DRAチーム (trace@ddbj.nig.ac.jp) へご連絡ください。

Validation に成功し、ステータスが "submission_validated" になると・・・

アノテーションが、査定を開始します。そのままお待ちください。

8. アクセション番号の受領

DRA Handbook: <http://trace.ddbj.nig.ac.jp/dra/submission.html#アクセション番号の発行>

TOP | DRA | Project List | BioProject | BioSample dradev | Account | Password | Logout

D-way

Submission ID : dradev-0018

Submission ID	Accession #	Status	Creation Date	Hold Date
dradev-0018		confidential	2014-07-29	2016-08-07 Change

[Submit / Update Metadata](#)

XML Upload [-]

Object	File
Submission	ファイルを選択 選択されていません Download
Experiment	ファイルを選択 選択されていません Download
Run	ファイルを選択 選択されていません Download
Analysis	ファイルを選択 選択されていません Download

Upload

[Validate data files](#) [Stop validation](#)

* Stop validation to edit metadata or upload data files

Component [-]

Object	BioProject ID	BioSample ID	Accession #	Center Name	Alias
submission			DRA000xxx	NIG	dradev-0018_Submission
+ experiment	PRJDB9999	SAMD00009999	DRX000xxx	NIG	dradev-0018_Experiment_0001
+ run			DRR000xxx	NIG	dradev-0018_Run_0001

Data Files [-]

File Name	Metadata	Uploaded
HRV1TN313	521dfb798de871e)	yes

Validation

Accession #	Status
A00025814 (d	Cancel

History [-]

アクセション番号は、メールおよび D-way 上でお知らせします。

「登録者情報」を、支援依頼者へと変更するのを忘れずに。

アクセション番号が表示される

Dear Hanako Mishima and Taro Shizuoka,

Thank you for your submission to the DDBJ Sequence Read Archive.

Accession numbers and hold date of your submission are listed below.

[Submission ID]
dradev-0018

[Hold date]
2016-08-07

[Accession number]

Object Accession number (Alias)

SUBMISSION: DRA000xxxx (dradev-0018_Submission)

EXPERIMENT: DRX000xxxx (dradev-0018_Experiment_0001)

RUN: DRR000xxxx (dradev-0018_Run_0001)

You can update metadata, change hold date and add published papers in D-way.

At the hold date, your data will be automatically released and indexed in DRA search.

Please see the following website for details.

http://trace.ddbj.nig.ac.jp/dra/submission_e.html#release

公開済みデータは、DRASearch からダウンロード

DRASearch [Send Feedback](#) [Search Home](#) [DRA Home](#)

Accession :
 Organism : StudyType :
 CenterName : Platform :
 Keyword :

Show 20 records Sort by Study Search Clear

Statistics Data Last Update 2014-05-28
WebSite Last Update 2014-01-22

Released Entries	Type	Count
Submission	250067	
Study	39183	
Experiment	639503	
Sample	643699	
Run	761515	

#	Organism	Study
1	Homo sapiens	2739
2	Mus musculus	1934
3	Drosophila melanogaster	635
4	unidentified	621
5	Caenorhabditis elegans	402
6	soil metagenome	387
7	Arabidopsis thaliana	341
8	marine metagenome	273
9	Saccharomyces cerevisiae	265
10	Escherichia coli str. K-12 substr. MG1655	184

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DRASearch:
<http://trace.ddbj.nig.ac.jp/DRAsearch/>

DRASearch [Send Feedback](#) [Search Home](#) [DRA Home](#)

DRA000164 [FTP](#)

Submission Detail

Alias	DRA000164
Submission ID	
Submission Date	2010-04-15
Center Name	KUFMS
Lab Name	SSP Stem Cell Unit., School of Medicine, Kyushu University

Navigation

Study	DRP000164		
	PRJDA47577		
Experiment	DRX000204	FASTQ	SRA
	DRX000205	FASTQ	SRA
Sample	DRS000205		
	SAMD00006358		
Run	DRR000393	FASTQ	SRA
	DRR000394	FASTQ	SRA
	DRR000395	FASTQ	SRA
	DRR000396	FASTQ	SRA

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8	RNAseq	118	8	SLC	774
9	Exome Sequencing	93	9	WUSTL	535
10	Cancer Genomics	52	10	WUGSC	505

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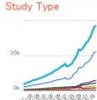
DBCLS SRA  **DISCOVER**
 Interesting & Available SRA Data

Trends in SRA data [For more detail](#)

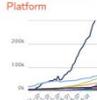
Species



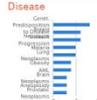
Study Type



Platform



Disease



Species	Count	Study Type	Count	Platform	Count	Disease	Count
Human	10000	Whole Genome Sequencing	10000	Illumina HiSeq 2500	10000	Cancer	10000
Mus musculus	5000	Transcriptome Analysis	5000	HiSeq X Ten	5000	Protein Expression	5000
Drosophila melanogaster	2000	Metagenomics	2000	HiSeq X Ten	2000	Diabetes Mellitus	2000
Arabidopsis thaliana	1000	Genomics	1000	HiSeq X Ten	1000	Alzheimer's Disease	1000
Caenorhabditis elegans	500	Protein Sequencing	500	HiSeq X Ten	500	Cardiovascular Disease	500
Escherichia coli	300	Single-Cell Sequencing	300	HiSeq X Ten	300	Neurodegenerative Disease	300
Saccharomyces cerevisiae	200	Epigenetics	200	HiSeq X Ten	200	Immunology	200
Yeast	100	ChIP-Seq	100	HiSeq X Ten	100	Plant Pathology	100
Plant	50	ChIP-Seq	50	HiSeq X Ten	50	Plant Pathology	50
Animal	20	ChIP-Seq	20	HiSeq X Ten	20	Plant Pathology	20
Microbe	10	ChIP-Seq	10	HiSeq X Ten	10	Plant Pathology	10
Plant	5	ChIP-Seq	5	HiSeq X Ten	5	Plant Pathology	5
Animal	2	ChIP-Seq	2	HiSeq X Ten	2	Plant Pathology	2
Microbe	1	ChIP-Seq	1	HiSeq X Ten	1	Plant Pathology	1
Plant	1	ChIP-Seq	1	HiSeq X Ten	1	Plant Pathology	1
Animal	1	ChIP-Seq	1	HiSeq X Ten	1	Plant Pathology	1
Microbe	1	ChIP-Seq	1	HiSeq X Ten	1	Plant Pathology	1
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支援依頼者の皆様へのお願い

☑ ご登録は、お早目に。一定期間、非公開に出来ます。

☑ 公開日の変更は、D-wayから、ご自身で。

DBJ データ公開原則: http://www.ddbj.nig.ac.jp/sub/hold_date-j.html

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D-way

Submission ID : dradev-0011

Submission ID	Accession #	Study Title	Status	Creation Date	Hold Date
dradev-0011		Whole genome sequences of Musa balbisiana	confidential	2013-06-04	2014-05-31 Change

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PubMed ID もしくは DOI を BioProjectチームへ連絡

DDBJ
Sequence Read Archive

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必須項目です

氏名* :

メールアドレス* :

お問い合わせ先* :

- Sequence Read Archive (DRA)
- Trace Archive (DTA)
- Japanese Genotype-phenotype Archive (JGA)
- Omics Archive (DOR)
- BioProject
- BioSample
- 遺伝システム D-way
- Read Annotation Pipeline
- その他

作成* :

D-way account :

Submission ID :

メッセージ* :

メッセージを送信