BMT_Union

Field ID	Field group	Field Name	computer_readable_name	Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments
CIRM-S1	Biosample Group	Species Source Common Name	species_source_common_name	Organism of origin; a controlled vocabulary describing the o	http://purl.oboli		Text	REQUIRED	human, mouse	
CIRM-S2	Biosample Group	Biosample Source ID	biosample_source_id	Unique identifier of the organism as the source of the Biosan	N/A		Free text	REQUIRED	Participant12345	If Biosample
CIRM-S3	Biosample Group	Biosample Source Sex	biosample_source_sex	Biological sex of the individual organism from which the initi	http://purl.oboli		Text	REQUIRED	male, female	
CIRM-S4	Biosample Group	Biosample Ancestry Population	biosample_ancestry_population	Biosample background based on species. If human- identify i	if human- https:,	if mouse- http://,	Text	REQUIRED	Human- Asian, African; Mouse
CIRM-S5	Biosample Group	Biosample Source Age - Value	biosample_source_age_value	Age value of the individual organism from which the initial Bi	floating number		Float	REQUIRED	13.5	
CIRM-S6	Biosample Group	Biosample Source Age - Unit	biosample_source_age_unit	Age unit of the individual organism from which the initial Bio	http://purl.bioor		Text	REQUIRED	years, months, embryonic day
CIRM-S7	Biosample Group	Biosample Source Life Stage	biosample_source_life_stage	Biosample life stage at the time of experiment inclusion	http://purl.bioor		Text	REQUIRED	postpartum, embryo stage
CIRM-S8	Biosample Group	Biosample Source Health Status	biosample_source_health_status	A description of whether the Biosample source organism app	http://purl.bioor		Text	REQUIRED	Down Syndrome, Heart Failur
CIRM-S9	Biosample Group	Biosample Disease Stage	biosample_disease_stage	The stage or severity of the disease condition of the biosamp	N/A		Free text	REQUIRED	Cancer stage III, Stage 5 Parki
CIRM-S10	Biosample Group	Biosample ID	biosample_id	Unique identifier of the initial Biosample collected from the E	N/A		Free text	REQUIRED	Blood12345	
CIRM-S11	Biosample Group	Organ Anatomical Name	organ_anatomical_name	Controlled term describing the organ from which the Biosam	http://purl.bioor	animal- http://p	Text	REQUIRED	Brain	
CIRM-S12	Biosample Group	Biosample Tissue Type	biosample_tissue_type	Tissue or bodily fluid type derived from the organ.	http://purl.bioor	animal- http://p	Text	REQUIRED	Neocortex	
CIRM-S13	Biosample Group	Biosample Cell Type	biosample_cell_type	Cell or cell culture type derived from the tissue.	http://purl.bioor		Text	REQUIRED	Neurons, Astrocytes	
CIRM-S14	Biosample Group	Cell Culture Type	cell_culture_type	Type of cell culture of biosample collected	http://purl.bioor		Text	REQUIRED	in-vivo, primary	
CIRM-S15	Biosample Group	Biosample Isolation Protocol ID	biosample_isolation_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleIsolation12345	
CIRM-S16	Biosample Group	Biosample Characterization Protocol ID	biosample_characterization_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleCharacterization123	This is the nar
CIRM-S17	Biosample Group	Biosample Repository	biosample_repository	Name of repository where a Biosample sample has been dep	http://purl.bioor		Text	OPTIONAL	BEI	
CIRM-S18	Biosample Group	Biosample Repository Sample ID	biosample_repository_sample_id	Unique identifier assigned by sample repository to identity tl	N/A		Free text	OPTIONAL	Biosample12345	
CIRM-S19	Biosample Group	Biosample Collector's Name	biosample_collectors_name	Name of the person collecting the Biosample and Biosample	N/A		Free text	OPTIONAL	Jane Doe	
CIRM-S20	Biosample Group	Biosample Collector's Institution	biosample_collectors_institution	Institutional affiliation of the person collecting the Biosample	http://purl.bioor		Text	OPTIONAL	NIH	
CIRM-S21	Biosample Group	Biosample Collector's Email	biosample_collectors_email	Preferred email address of the person collecting the Biosamp	N/A		Free Text	OPTIONAL	jane@instituition.org	
CIRM-S22	Biosample Group	Passage Number	passage_number	The number of times, if any, the primary cells have been re-p	Integer		Integer	OPTIONAL	3	
CIRM-CT1	Cellular Transformati	Cellular Reprogramming Method	cellular_reprogramming_method	Reprogramming method applied to primary cell culture to in	http://purl.bioor		Text	REQUIRED	Lentivirus transfection, Senda
CIRM-CT2	Cellular Transformati	Cellular Reprogramming Reagents	cellular_reprogramming_reagents	Reprogramming reagents added to primary cell culture.	http://www.ncb		Text	REQUIRED	POU5FI, SOX2, KLF4, MYC
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	
CIRM-CT4	Cellular Transformati	Genetic Transformation Method	genetic_transformation_method	Genetic transformation method applied to a cell culture to in	http://purl.bioor		Text	REQUIRED	CRISPR-Cas9-mediated editin
CIRM-CT5	Cellular Transformati	Genetic Transformation Reagents	genetic_transformation_reagents	Genetic transformation reagents added to a cell culture to in	http://www.ncb		Free Text	REQUIRED	ATGCGTGCATAGTACGATGCT
CIRM-CT6	Cellular Transformati	Genetic Transformed Cell Culture ID	genetic_transformed_cell_culture_a	Unique identifier of the genetically transformed cell culture a	N/A		Free Text	REQUIRED	IPSC12345_p53_157T
CIRM-CT7	Cellular Transformati	Direct Reprogramming Method	direct_reprogramming_method	Differentiation method applied to an iPSC culture to induce a	http://purl.bioor		Text	REQUIRED	Embryoid body induction
CIRM-CT8	Cellular Transformati	Direct Reprogramming Reagents	direct_reprogramming_reagents	Differentiation reagents added to an iPSC culture to induce a	if protein- http:/	if chemical- http	Text	REQUIRED	AsclI (mouse), nuclear recepto
CIRM-CT9	Cellular Transformati	Direct Reprogrammed Cell Culture ID	direct_reprogrammed_cell_culture_id	Unique identifier of the differentiated cell culture after differe	N/A		Free Text	REQUIRED	EmbyoidBody12345
CIRM-CT10	Cellular Transformati	Cellular Reprogramming Protocol ID	cellular_reprogramming_protocol_id	Unique identifier of the protocol file which captures the detai	N/A		Free text	REQUIRED	TransformationProtocol12345
CIRM-CT11	Cellular Transformati	Direct Reprogamming Protocol ID	direct_reprogramming_protocol_id	Unique identifier of the protocol file which captures the detai	N/A		Free text	REQUIRED	TransformationProtocol12345
CIRM-CT12	Cellular Transformati	Genetic Transformation Protocol ID	genetic_transformation_protocol_id	Unique identifier of the protocol file which captures the detai	N/A		Free text	REQUIRED	TransformationProtocol12345
CIRM-CT13	Cellular Transformati	iPSC Differentiation Protocol ID	ipsc_differentiation_protocol_id	Unique identifier of the protocol file which captures the detai	N/A		Free text	REQUIRED	TransformationProtocol12345

BMT_CellularReprogramming

Field ID	Field group	Field Name	computer_readable_name	Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments
CIRM-S1	Biosample Group	Species Source Common Name	species_source_common_name	Organism of origin; a controlled vocabulary describing the o	http://purl.oboli		Text	REQUIRED	human, mouse	
CIRM-S2	Biosample Group	Biosample Source ID	biosample_source_id	Unique identifier of the organism as the source of the Biosan	N/A		Free text	REQUIRED	Participant12345	If Biosample
CIRM-S3	Biosample Group	Biosample Source Sex	biosample_source_sex	Biological sex of the individual organism from which the initi	http://purl.oboli		Text	REQUIRED	male, female	
CIRM-S4	Biosample Group	Biosample Ancestry Population	biosample_ancestry_population	Biosample background based on species. If human- identify i	if human- https:,	if mouse- http://,	Text	REQUIRED	Human- Asian, African; Mouse
CIRM-S5	Biosample Group	Biosample Source Age - Value	biosample_source_age_value	Age value of the individual organism from which the initial Bi	floating number		Float	REQUIRED	13.5	
CIRM-S6	Biosample Group	Biosample Source Age - Unit	biosample_source_age_unit	Age unit of the individual organism from which the initial Bio	http://purl.bioor		Text	REQUIRED	years, months, embryonic day
CIRM-S7	Biosample Group	Biosample Source Life Stage	biosample_source_life_stage	Biosample life stage at the time of experiment inclusion	http://purl.bioor		Text	REQUIRED	postpartum, embryo stage
CIRM-S8	Biosample Group	Biosample Source Health Status	biosample_source_health_status	A description of whether the Biosample source organism app	http://purl.bioor		Text	REQUIRED	Down Syndrome, Heart Failur
CIRM-S9	Biosample Group	Biosample Disease Stage	biosample_disease_stage	The stage or severity of the disease condition of the biosamp	N/A		Free text	REQUIRED	Cancer stage III, Stage 5 Parki
CIRM-S10	Biosample Group	Biosample ID	biosample_id	Unique identifier of the initial Biosample collected from the E	N/A		Free text	REQUIRED	Blood12345	
CIRM-S11	Biosample Group	Organ Anatomical Name	organ_anatomical_name	Controlled term describing the organ from which the Biosam	http://purl.bioor	animal- http://p	Text	REQUIRED	Brain	
CIRM-S12	Biosample Group	Biosample Tissue Type	biosample_tissue_type	Tissue or bodily fluid type derived from the organ.	http://purl.bioor	animal- http://p	Text	REQUIRED	Neocortex	
CIRM-S13	Biosample Group	Biosample Cell Type	biosample_cell_type	Cell or cell culture type derived from the tissue.	http://purl.bioor		Text	REQUIRED	Neurons, Astrocytes	
CIRM-S14	Biosample Group	Cell Culture Type	cell_culture_type	Type of cell culture of biosample collected	http://purl.bioor		Text	REQUIRED	in-vivo, primary	
CIRM-S15	Biosample Group	Biosample Isolation Protocol ID	biosample_isolation_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleIsolation12345	
CIRM-S16	Biosample Group	Biosample Characterization Protocol ID	biosample_characterization_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleCharacterization123	This is the nar
CIRM-S17	Biosample Group	Biosample Repository	biosample_repository	Name of repository where a Biosample sample has been dep	http://purl.bioor		Text	OPTIONAL	BEI	
CIRM-S18	Biosample Group	Biosample Repository Sample ID	biosample_repository_sample_id	Unique identifier assigned by sample repository to identity tl	N/A		Free text	OPTIONAL	Biosample12345	
CIRM-S19	Biosample Group	Biosample Collector's Name	biosample_collectors_name	Name of the person collecting the Biosample and Biosample	N/A		Free text	OPTIONAL	Jane Doe	
CIRM-S20	Biosample Group	Biosample Collector's Institution	biosample_collectors_institution	Institutional affiliation of the person collecting the Biosample	http://purl.bioor		Text	OPTIONAL	NIH	
CIRM-S21	Biosample Group	Biosample Collector's Email	biosample_collectors_email	Preferred email address of the person collecting the Biosamp	N/A		Free Text	OPTIONAL	jane@instituition.org	
CIRM-S22	Biosample Group	Passage Number	passage_number	The number of times, if any, the primary cells have been re-p	Integer		Integer	OPTIONAL	3	
CIRM-CT1	Cellular Transformati	Cellular Reprogramming Method	cellular_reprogramming_method	Reprogramming method applied to primary cell culture to in	http://purl.bioor		Text	REQUIRED	Lentivirus transfection, Senda
CIRM-CT2	Cellular Transformati	Cellular Reprogramming Reagents	cellular_reprogramming_reagents	Reprogramming reagents added to primary cell culture.	http://www.ncb		Text	REQUIRED	POU5FI, SOX2, KLF4, MYC
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	
CIRM-CT10	Cellular Transformati	Cellular Reprogramming Protocol ID	cellular_reprogramming_protocol_id	Unique identifier of the protocol file which captures the detai	NA		Free text	REQUIRED	TransformationProtocol12345

BMT_DirectReprogramming

Field ID	Field group	Field Name	computer_readable_name	Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments
CIRM-S1	Biosample Group	Species Source Common Name	species_source_common_name	Organism of origin; a controlled vocabulary describing the o	http://purl.oboli		Text	REQUIRED	human, mouse	
CIRM-S2	Biosample Group	Biosample Source ID	biosample_source_id	Unique identifier of the organism as the source of the Biosan	N/A		Free text	REQUIRED	Participant12345	If Biosample
CIRM-S3	Biosample Group	Biosample Source Sex	biosample_source_sex	Biological sex of the individual organism from which the initi	http://purl.oboli		Text	REQUIRED	male, female	
CIRM-S4	Biosample Group	Biosample Ancestry Population	biosample_ancestry_population	Biosample background based on species. If human- identify i	if human- https:,	if mouse- http://,	Text	REQUIRED	Human- Asian, African; Mouse
CIRM-S5	Biosample Group	Biosample Source Age - Value	biosample_source_age_value	Age value of the individual organism from which the initial Bi	floating number		Float	REQUIRED	13.5	
CIRM-S6	Biosample Group	Biosample Source Age - Unit	biosample_source_age_unit	Age unit of the individual organism from which the initial Bio	http://purl.bioor		Text	REQUIRED	years, months, embryonic day
CIRM-S7	Biosample Group	Biosample Source Life Stage	biosample_source_life_stage	Biosample life stage at the time of experiment inclusion	http://purl.bioor		Text	REQUIRED	postpartum, embryo stage
CIRM-S8	Biosample Group	Biosample Source Health Status	biosample_source_health_status	A description of whether the Biosample source organism app	http://purl.bioor		Text	REQUIRED	Down Syndrome, Heart Failur
CIRM-S9	Biosample Group	Biosample Disease Stage	biosample_disease_stage	The stage or severity of the disease condition of the biosamp	N/A		Free text	REQUIRED	Cancer stage III, Stage 5 Parki
CIRM-S10	Biosample Group	Biosample ID	biosample_id	Unique identifier of the initial Biosample collected from the E	N/A		Free text	REQUIRED	Blood12345	
CIRM-S11	Biosample Group	Organ Anatomical Name	organ_anatomical_name	Controlled term describing the organ from which the Biosam	http://purl.bioor	animal- http://p	Text	REQUIRED	Brain	
CIRM-S12	Biosample Group	Biosample Tissue Type	biosample_tissue_type	Tissue or bodily fluid type derived from the organ.	http://purl.bioor	animal- http://p	Text	REQUIRED	Neocortex	
CIRM-S13	Biosample Group	Biosample Cell Type	biosample_cell_type	Cell or cell culture type derived from the tissue.	http://purl.bioor		Text	REQUIRED	Neurons, Astrocytes	
CIRM-S14	Biosample Group	Cell Culture Type	cell_culture_type	Type of cell culture of biosample collected	http://purl.bioor		Text	REQUIRED	in-vivo, primary	
CIRM-S15	Biosample Group	Biosample Isolation Protocol ID	biosample_isolation_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleIsolation12345	
CIRM-S16	Biosample Group	Biosample Characterization Protocol ID	biosample_characterization_protocol_id	Unique identifier for the protocol file which captures the deta	N/A		Free text	REQUIRED	BiosampleCharacterization123	This is the nar
CIRM-S17	Biosample Group	Biosample Repository	biosample_repository	Name of repository where a Biosample sample has been dep	http://purl.bioor		Text	OPTIONAL	BEI	
CIRM-S18	Biosample Group	Biosample Repository Sample ID	biosample_repository_sample_id	Unique identifier assigned by sample repository to identity tl	N/A		Free text	OPTIONAL	Biosample12345	
CIRM-S19	Biosample Group	Biosample Collector's Name	biosample_collectors_name	Name of the person collecting the Biosample and Biosample	N/A		Free text	OPTIONAL	Jane Doe	
CIRM-S20	Biosample Group	Biosample Collector's Institution	biosample_collectors_institution	Institutional affiliation of the person collecting the Biosample	http://purl.bioor		Text	OPTIONAL	NIH	
CIRM-S21	Biosample Group	Biosample Collector's Email	biosample_collectors_email	Preferred email address of the person collecting the Biosamp	N/A		Free Text	OPTIONAL	jane@instituition.org	
CIRM-S22	Biosample Group	Passage Number	passage_number	The number of times, if any, the primary cells have been re-p	Integer		Integer	OPTIONAL	3	
CIRM-CT1	Cellular Transformati	Cellular Reprogramming Method	cellular_reprogramming_method	Reprogramming method applied to primary cell culture to in	http://purl.bioor		Text	REQUIRED	Lentivirus transfection, Senda
CIRM-CT2	Cellular Transformati	Cellular Reprogramming Reagents	cellular_reprogramming_reagents	Reprogramming reagents added to primary cell culture.	http://www.ncb		Text	REQUIRED	POU5FI, SOX2, KLF4, MYC
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	

Field ID	Field group	Field Name	computer_readable_name	Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments		
CIRM-CT7	Cellular Transformati	Direct Reprogramming Method	direct_reprogramming_method	Differentiation method applied to an iPSC culture to induce a	http://purl.bioon		Text	REQUIRED	Embryoid body induction			
CIRM-CT8	Cellular Transformati	Direct Reprogramming Reagents	direct_reprogramming_reagents	Differentiation reagents added to an iPSC culture to induce a	if protein- http:/	if chemical- http	Text	REQUIRED	Ascl1 (mouse), nuclear recepto			
CIRM-CT9	Cellular Transformati	Direct Reprogrammed Cell Culture ID	direct_reprogrammed_cell_culture_id	Unique identifier of the differentiated cell culture after differ	N/A		Free Text	REQUIRED	EmbyoidBody12345			
CIRM-CT10	Cellular Transformati	Cellular Reprogramming Protocol ID	cellular_reprogramming_protocol_id	Unique identifier of the protocol file which captures the detai	NA		Free text	REQUIRED	TransformationProtocol12345			
CIRM-CT11	Cellular Transformati	Direc Reprogamming Protocol ID	direc_reprogamming_protocol_id	Unique identifier of the protocol file which captures the detai	NA		Free text	REQUIRED	TransformationProtocol12345			

BMT_iPSCDifferentiation

Field ID	Field group	Field Name		Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345		
CIRM-CT7	Cellular Transformati	Direct Reprogramming Method	direct_reprogramming_method	Differentiation method applied to an iPSC culture to induce a	http://purl.bioor		Text	REQUIRED	Embryoid body induction		
CIRM-CT8	Cellular Transformati	Direct Reprogramming Reagents	direct_reprogramming_reagents	Differentiation reagents added to an iPSC culture to induce a	if protein- http:/	if chemical- http	Text	REQUIRED	Ascl1 (mouse), nuclear recepto		
CIRM-CT9	Cellular Transformati	Direct Reprogrammed Cell Culture ID	direct_reprogrammed_cell_culture_id	Unique identifier of the differentiated cell culture after differ	N/A		Free Text	REQUIRED	EmbyoidBody12345		

BMT_GeneticTransformation

Field ID	Field group	Field Name		Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345		
CIRM-CT4	Cellular Transformati	Genetic Transformation Method	genetic_transformation_method	Genetic transformation method applied to a cell culture to in	http://purl.bioor		Text	REQUIRED	CRISPR-Cas9-mediated editin		
CIRM-CT5	Cellular Transformati	Genetic Transformation Reagents	genetic_transformation_reagents	Genetic transformation reagents added to a cell culture to in	http://www.ncb		Free Text	REQUIRED	ATGCGTGCATAGTACGATGCT		
CIRM-CT6	Cellular Transformati	Genetic Transformed Cell Culture ID	genetic_transformed_cell_culture_id	Unique identifier of the genetically transformed cell culture a	N/A		Free Text	REQUIRED	iPSC12345_p53_157T		

Assay_Union

Field ID	Field group	Field Name		Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments	
CIRM-A1	Assay Group	Input Material	input_material	The input material used in the assay after biomaterial transfc	http://purl.bioor		Text	REQUIRED	RNA Poly(A) library, Small RN	Based on sele
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	RNA-seq, ChIP-seq, Immunoc	Based on sele
CIRM-A3	Assay Group	Assay Platform	assay_platform	The name of the assay platform used to produce primary dat	http://purl.bioor		Text	REQUIRED	Illumina HiSeq 2500, Illumina	
CIRM-A4	Assay Group	Characteristic Being Measured	characteristic_being_measured	The characteristics being measured shall be provided whene	http://purl.bioor		Free Text	REQUIRED	protein expression level, cell	From MiFlow
CIRM-A5	Assay Group	Analyte	analyte	What plays the role of the analyte? Which substance or chem	http://purl.bioor		Text	REQUIRED	IL2RA (human), Nanog (mous	From MiFlow
CIRM-A6	Assay Group	Analyte Detector	analyte_detector	What plays the role of analyte detector? Which component o	for protein- http	for genes-http:/	Free Text	REQUIRED	anti-adapter protein IraD, >dr cccaccaggtctcctgatttgatttaaat agatgctgctagtgtgaataacgtgac ggaagaggaagtttgcccttacctgac cctgccatgcttgggactcctcggttat tctgggcctctggagcatcctttgtgag	From MiFlow
CIRM-A7	Assay Group	Analyte Reporter (Fluorochrome)	analyte_reporter_fluorochrome	What plays the role of analyte reporter? Which component o	if chemical- http		Text	REQUIRED	florescein isothiocyanate, flu	From MiFlow
CIRM-A8	Assay Group	Protocol ID	protocol_id	A unique identifier and link to the protocol document	NA		Free Text	REQUIRED	AssayProtocol12345	N/A

Assay_Immunostaining

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	N/A
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	Immunocytochemistry	Based on sele
CIRM-A4	Assay Group	Characteristic Being Measured	characteristic_being_measured	The relative amount of molecules, properties, or processes b	http://purl.bioor		Free Text	REQUIRED	Protein expression level	Use to identif
CIRM-A5	Assay Group	Analyte	analyte	What plays the role of the analyte? Which substance or chem	http://purl.bioor		Text	REQUIRED	Nanog (mouse)	Specific trans
CIRM-A6	Assay Group	Analyte Detector	analyte_detector	What plays the role of analyte detector? Which component o	http://purl.bioor		Text	REQUIRED	anti-GFP (human or mouse)	anti-GFP. Fro
CIRM-A7	Assay Group	Analyte Reporter (Fluorochrome)	analyte_reporter_fluorochrome	What plays the role of analyte reporter? Which component o	if chemical- http		Text	REQUIRED	florescein isothiocyanate, flu	Chemical mar
CIRM-A8	Assay Group	Protocol ID	protocol_id	A unique identifier and link to the protocol document	NA		Free Text	REQUIRED	AssayProtocol12345	N/A
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	NA		Free Text	REQUIRED	Immunostain12345.png	This will be a

Assay_WGS

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	N/A
CIRM-A1	Assay Group	Input Material	input_material	The input material used in the assay after biomaterial transfc	http://purl.bioor		Text	REQUIRED	TruSeq DNA Prep Kit	Based on sele
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	large-whole genome sequenc	Based on sele
CIRM-A3	Assay Group	Assay Platform	assay_platform	The name of the assay platform used to produce primary dat	http://purl.bioor		Text	REQUIRED	HiSeq 3000, HiSeq 4000	The platform
CIRM-A8	Assay Group	Whole Genome Sequencing Protocol ID	whole_genome_sequencing_protocol_id	A unique identifier and link to the protocol document	NA		Free Text	REQUIRED	AssayProtocol12345	Data field ref
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	NA		Free Text	REQUIRED	SRR001203.filt.fastq.gz	This will be a

Assay_RNA-Sequencing

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	N/A
CIRM-A1	Assay Group	Input Material	input_material	The input material used in the assay after biomaterial transfc	http://purl.bioor		Text	REQUIRED	TruSeq DNA Prep Kit	Based on sele
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	large-whole genome sequenc	Based on sele
CIRM-A3	Assay Group	Assay Platform	assay_platform	The name of the assay platform used to produce primary dat	http://purl.bioor		Text	REQUIRED	HiSeq 3000, HiSeq 4000	The platform
CIRM-A8	Assay Group	Whole Genome Sequencing Protocol ID	whole_genome_sequencing_protocol_id	A unique identifier and link to the protocol document	NA		Free Text	REQUIRED	AssayProtocol12345	Data field ref
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	NA		Free Text	REQUIRED	SRR001203.filt.fastq.gz	This will be a

Assay_FISH

Field ID	Field group	Field Name		Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments	
CIRM-CT3	Cellular Transformati	Induced Pluripotent Cell Culture ID	induced_pluripotent_cell_culture_id	Unique identifier of the induced pluripotent stem cell culture	N/A		Free Text	REQUIRED	iPSC12345	N/A
CIRM-A1	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	FISH, Fast-FISH, Spectral kary	Based on sele
CIRM-A2	Assay Group	Characteristic Being Measured	characteristic_being_measured	The relative amount of molecules, properties, or processes b	http://purl.bioor		Free Text	REQUIRED	chromosome abnormality	From MiFlow
CIRM-A3	Assay Group	Analyte	analyte	What plays the role of the analyte? Which substance or chem	http://purl.bioor		Text	REQUIRED	B- and T-lymphocyte attenuat	The specific s
CIRM-A4	Assay Group	Analyte Detector	analyte_detector	What plays the role of analyte detector? Which component o	http://purl.bioor	if genes-	Text	REQUIRED	>dna/mouse_build_38_nib/c cccaccaggtctcctgatttgatttaaat agatgctgctagtgtgaataacgtgac ggaagaggaagtttgcccttacctgac cctgccatgcttgggactcctcggttat tctgggcctctggagcatcctttgtgag	(sequence of
CIRM-A5	Assay Group	Analyte Reporter (Fluorochrome)	analyte_reporter_fluorochrome	What plays the role of analyte reporter? Which component o	if chemical- http		Text	REQUIRED	Alexa Fluor 546 (flurophore)-	Each chromos
CIRM-A6	Assay Group	FISH Protocol ID	fish_protocol_id	A unique identifier and link to the protocol document	N/A		Free Text	REQUIRED	AssayProtocol12345	Data field ref
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	N/A		Free Text	REQUIRED	FISH12345.png	This will be a

Assay_lownumber_ChIP-Seq

Field ID	Field Group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments	
CIRM-CHIP1	Chromatin Immunopr	Immunoprecipitation Method	immunoprecipitation_method	Method used to immunoprecipitate a specific chromatin targ	http://purl.bioor		Text	REQUIRED	ChIP-seq	
CIRM-CHIP2	Chromatin Immunopr	Immunoprecipitation Reagents	immunoprecipitation_reagents	Reagent, often a specific antibody preparation, used to immu	if protein- http:/		Text	REQUIRED	antibody12345 to histone H3-	

Field ID	Field group	Field Name	computer_readable_name	Description	Allowed values	Allowed values	Syntax	REQUIRED	Examples	Comments		
CIRM-CHIP3	Chromatin Immunopr	Immunoprecipitation Target	immunoprecipitation_target	Molecular target of the immunoprecipitating reagent.	if protein- http:/		Text	REQUIRED	histone H3 acetylated at posit			
CIRM-CHIP4	Chromatin Immunopr	Immunoprecipitated Material ID	immunoprecipitated_material_id	Unique identifier of the immunoprecipitated chromatin mate	N/A		Text	REQUIRED	ChIP12345			
CIRM-CHIP5	Chromatin Immunopr	Immunoprecipitation Protocol ID	immunoprecipitation_protocol_id_	Unique identifier of the protocol file which captures the detai	N/A		Text	REQUIRED	ChipProtocol12345			
CIRM-A1	Assay Group	Input Material	input_material	The input material used in the assay after biomaterial transfo	http://purl.bioor		Text	REQUIRED	TruSeq ChIP Library Prep Kit	Based on sele		
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay method of applied to input material	http://purl.bioor		Text	REQUIRED	ChIP-chip, ChIP-seq (DNA)	Based on sele		
CIRM-A3	Assay Group	Assay Platform	assay_platform	The name of the assay platform used to produce primary da	http://purl.bioor		Text	REQUIRED	HiSeq 3000, HiSeq 4000			
CIRM-A4	Assay Group	Characteristic Being Measured	characteristic_being_measured	The relative amount of molecules, properties, or processes b	http://purl.bioor		Free Text	REQUIRED	Identify binding sites of DNA-	From MiFlow		
CIRM-A8	Assay Group	ChIP-Seq Protocol ID	chip-seq_protocol_id	A unique identifier and link to the protocol document	N/A		Free Text	REQUIRED	AssayProtocol12345	Data field ref		
CIRM-D1	Data File Group	Primary data	primary_data	File link to primary data generated from the assay run	N/A		Text	REQUIRED	SRR001203.filt.fastq.gz	This will be a		

Assay_DNAMethyl

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments
CIRM-METH1	DNA Methylation Gro	Methylation Method	methylation_method	Method used to methylate a specific chromatin target molec	http://purl.bioor		Text	REQUIRED	5-mC (5-methylCytosine) met	
CIRM-METH2	DNA Methylation Gro	Methylation Reagents	methylation_reagents	Reagent, often a specific antibody preparation, used to meth	if protein- http:/		Text	REQUIRED	DNMT1, DNMT3a	DNA methyltr
CIRM-METH3	DNA Methylation Gro	Methylation Target	methylation_target	Molecular target of the methylation reagent.	if protein- http:/		Text	REQUIRED	5-mC	
CIRM-METH4	DNA Methylation Gro	Methylated Material ID	methylated_material_id	Unique identifier of the methylated chromatin material.	N/A		Text	REQUIRED	methyl12345	
CIRM-METH5	DNA Methylation Gro	DNA Methylation Protocol ID	dna_methylation_protocol_id_	Unique identifier of the protocol file which captures the detai	N/A		Text	REQUIRED	5-mC_Protocol12345	
CIRM-A1	Assay Group	Input Material	input_material	The input material used in the assay after biomaterial transfo	N/A		Text	REQUIRED	RNA Poly(A) library, RNA stra	
CIRM-A2	Assay Group	Assay Method	assay_method	The name of the assay of applied to input material	http://purl.bioor		Text	REQUIRED	mRNA-Seq, RNA-seq, Small F	Based on sele
CIRM-A3	Assay Group	Assay Platform	assay_platform	The name of the assay platform used to produce primary da	http://purl.bioor		Text	REQUIRED	Illumina NextSeq 500	The platform
CIRM-A8	Assay Group	RNA-seq Protocol Name	rna-seq_protocol_name	A unique name for the library preparation kit used for the RN	NA		Free Text	REQUIRED	NeoPrep Library Prep System	Library prep k
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	NA		Free Text	REQUIRED	SRR001203.filt.fastq.gz	These are cor

DT_Union

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments
CIRM-D1	Data File Group	Input Data	input_data	File link to primary data generated from the assay run	N/A		Text	REQUIRED	SRR001203.filt.fastq.gz	This will be a
CIRM-D2	Data File Group	Output Data	output_data	The link to the mapped data after quality control process	N/A		Text	REQUIRED	SRR0011.bam	output of.bam
CIRM-D3	Data File Group	Reference Data	reference_data_	The link or pointer to the reference data file. This includes an	http://www.ncb		Free Text	REQUIRED	NCBI Reference Sequence: Ni	If reference d
CIRM-D4	Data Processing Gro	Data Processing Method/Algorithm	data_processing_method_algorithm	The purpose of each performed transformation shall be spec	http://purl.bioor		Text	REQUIRED	calculation of signal intensity	N/A
CIRM-D5	Data Processing Gro	Data Processing Description	data_processing_description	This will be the exact mathematical formulas/algorithms of e	N/A		Free Text	REQUIRED	align.py	N/A
CIRM-D6	Data Processing Gro	Data Processing Software	data_processing_software		http://purl.bioor		Text	REQUIRED	Tophat	N/A
CIRM-D7	Data Processing Gro	Data Processing Protocol ID	data_processing_protocol_id	A unique identifier for the protocol which was executed to pr	N/A		Text	REQUIRED	DataProtocol12345	N/A
CIRM-D8	Data Processing Gro	Data Processor Name	data_processor_name	Name of the person processing the data collection	N/A		Free Text	OPTIONAL	Spyros A	N/A
CIRM-D9	Data Processing Gro	Data Processor Instituition	data_processor_instituition	Institutional affiliation of the person processing the data and	N/A		Free Text	OPTIONAL	Stanford University	N/A

DT_ComparativeAnalysis

Field ID	Field group	Field Name		Description	Allowed values		Syntax	REQUIRED	Examples	Comments
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	N/A		Text	REQUIRED	SRR001203.filt.fastq.gz	This will be a
CIRM-D1	Data File Group	Primary Data	primary_data	File link to primary data generated from the assay run	N/A		Text	REQUIRED	SRR001204.filt.fastq.gz	This will be a
CIRM-D3	Data File Group	Reference Data	reference_data_	The link or pointer to the reference data file. This includes an	http://www.ncb		Free Text	REQUIRED	NCBI Reference Sequence: Ni	If reference d
CIRM-D4	Data Processing Gro	Data Processing Method/Algorithm	data_processing_method_algorithm	The purpose of each performed transformation shall be spec	http://purl.bioor		Text	REQUIRED	calculation of signal intensity	N/A
CIRM-D5	Data Processing Gro	Data Processing Description	data_processing_description	This will be the exact mathematical formulas/algorithms of e	N/A		Free Text	REQUIRED	align.py	N/A
CIRM-D6	Data Processing Gro	Data Processing Software	data_processing_software		http://purl.bioor		Text	REQUIRED	Tophat	N/A
CIRM-D7	Data Processing Gro	Data Processing Protocol ID	data_processing_protocol_id	A unique identifier for the protocol which was executed to pr	N/A		Text	REQUIRED	DataProtocol12345	N/A
CIRM-D8	Data Processing Gro	Data Processor Name	data_processor_name	Name of the person processing the data collection	N/A		Free Text	OPTIONAL	Spyros A	N/A
CIRM-D9	Data Processing Gro	Data Processor Instituition	data_processor_instituition	Institutional affiliation of the person processing the data and	N/A		Free Text	OPTIONAL	Stanford University	N/A
CIRM-D2	Data File Group	Output Data	output_data	The link to the mapped data after quality control process	N/A		Text	REQUIRED	SRR0011.bam	output of.bam