Metadata Specifications:

Embryonic Stem Cells

Pluripotent stem cells isolated from the inner cell mass of an organism's blastocyst, able to be maintained in culture indefinitely in the pluripotent state, while remaining genetically homogenous.

Importance	1: Required, 2: Required if available, 3: Optional
Common Fields	Fields that are common across all LINCS metadata standards
Custom Fields	Fields that are unique to a single LINCS metadata standard or common across only a subset of them

Common Fields

LINCS Field Name	Related to	Description	Comments	Importance
ES_LINCS_ID	Canonical	Unique LINCS internal identifier	LINCS internal ID; This is a batch independent ID; Canonical ES ID	1
ES_Name	Canonical	The name of the Embryonic Stem Cells	-	1
ES_Alternative_Name	Canonical	Other relevant names	Synonymous or alternative names, but only significant different names should be captured	2
ES_Alternative_ID	Canonical	Other relevant IDs for cells	CLO or other synonymous IDs	2
ES_Center_Canonical_ID	Canonical	LINCS center-specific canonical ID.	This will be assigned by a given LINCS DSGC according to its registration scheme.	1
ES_Relevant_Citations	Canonical	List of references (with PMIDs) of relevance to cell isolation, etc.	-	2
ES_Center_Name	Batch	LINCS center using the cell	-	1
ES_Center_Batch_ID	Batch	LINCS center-specific cell ID; Batch specific ID	-	1
ES_Provider_Name	Batch	Name of vendor or lab (provider) that supplied the embryonic stem cells	-	1
ES_Provider_Catalog_ID	Batch	ID or catalogue number assigned to the embryonic stem cells by the vendor or provider	-	1
ES_Provider_Batch_ID	Batch	Vendor/Provider batch ID number; Batch or lot number assigned to the cell by the vendor or provider	Provided by the cell provider	1
ES_Comments	Batch	DSGC Comments regarding reagent	-	3

Custom Fields

ES_Organism	Canonical	Organism of origin; A controlled vocabulary describing the organism from which the Embryonic Stem Cells were derived (e.g. Homo sapiens, Mus musculus, etc.)	Exact NCBI name	1
ES_Genetic_Modification	Canonical	Stable transfection, viral transduction or any other genetic modifications (de novo mutations, translocations) that were acquired. If yes, the modifications (e.g. expressing GFP-tagged protein) should be described and appropriate references provided.	MIACA is minimal information that may be a guidance	1
ES_Known_Mutations	Canonical	Mutations inherent in cell, captured explicitly; e.g. if reference is not available	Needs some ontology to describe gene / protein and mutation; At this point we suggest a concatenation of UniProt / Gene symbol and code of mutation	2
ES_Mutation_Citations	Canonical	Mutations inherent in the cells; From a reference	Known mutation in cells from a reference; Needs to include the reference source and the reference to the specific cell	2
ES_Recommended_Culture_Conditions	Canonical	The culture conditions that are recommended by the vendor when handling the embryonic stem cells	-	2
ES_Cell_Markers	Canonical	A controlled vocabulary describing the markers used to isolate / identify the cell type	controlled terms of markers; At this point no reference	2
ES_Passage_Number	Canonical	The number of times that the embryonic stem cells had been passaged	-	2
ES_Molecular Features	Canonical	Relevant molecular and morphological features of the embryonic stem cells (e.g. ER Status)	-	3
ES_Related_Projects	Canonical	Other projects in which the embryonic stem cells have been studied / used; A controlled vocabulary describing other large scale projects in which the embryonic stem cells has been used (e.g. ENCODE, TCGA, ICBP, Epigenomics, etc.)		3
ES_Gonosome_Code	Canonical	List of the sex chomosomes (gonosome) of the sample e.g. XX, XY, XXY	-	2
ES_Passage_Last_Karyotyping	Canonical	The passage number since the last karyotyping	-	1
ES_Disease	Canonical	If the embryonic stem cells came from a particular diseased organism, the disease should be noted in terms of a controlled vocabulary (e.g. breast cancer, colon cancer, not diseased, etc.)	the disease hierarchy is captured in the ontology; i.e. DOID	1
ES_Disease_Detail	Canonical	Additional description of a disease related to the cell that may not be available in the disease ontology above		2
ES_Production_Details	Canonical	This field specifies the procedure(s) by which the cells were derived from the parent/precursor cell, including genetic transformations and phenotypic selections. Citations / source information for constructs and citations for procedures should be included here when appropriate.	-	2
ES_Precursor_Cell_Name	Canonical	This field specifies the name of the parent cell line from which the cell was derived. It is left blank if this cell was not known to be derived from another. The particular batch of that parent line that was used to generate the new line should be specified in the production details (canonical) field.	-	1
ES_Precursor_Cell_LINCS_ID	Canonical	This field specifies the global LINCS ID of the parent cell from which the cell was derived. It is left blank if this cell line was not known to be derived from another. The particular batch of the parent line that was used to generate the new line should be specified in the production details (canonical) field.	-	1
ES_Precursor_Cell_Center_Batch_ID	Canonical	If this cell is derived from another registered cell, this field should specify the center LINCS Batch ID of the specific batch from which it was derived.	-	2
ES_Quality_Verification	Batch	Information pertaining to experimental verification of the ESC; Batch-specific ID; STR profile	Acceptable protocols for verification will be determined by LINCS participants and a controlled vocabulary will be developed.	2
ES_Culture_Conditions	Batch	A description of the culture conditions that were used and are suitable for this type of cell	-	1
ES_Center_Specific_Code	Batch	LINCS center-specific coded information that can include in its format information regarding the parent / protocol used / date	-	3
ES_Source_Information	Batch	This is a free-text field that provides detailed source information for this particular batch, which may include information on from whom and when the provider obtained the cells and for what purpose the cells were obtained by the end user.	-	2
ES_Date_Received	Batch	This field specifies when this batch was obtained from the provider. Because YEAR-MO-DY is not always known, this field may only contain partial date information (e.g. YEAR-MO, YEAR only).	-	2
ES_Transient_Modification	Batch	Transient transfection or viral transduction	Need to capture transfection agent	1