

Biobank, collection, study, and sample minimum data set and associated standards

Table A5.1 lists the minimum data set, which reduces the heterogeneity of sample-associated data and thus improves its quality. Such standardization enables biobanks to share samples in large studies and for research that requires samples from different sources.

Table A5.1. Minimum data set and associated standard available in BRISQ, SPREC, and MIABIS

Type of data set	Data field	Explanation of data field	BRISQ Tier 1	SPREC	MIABIS
Collection or study or biobank	ID	The unique ID or acronym of the study	NA	NA	Text value
Study or biobank	Acronym	Short name	NA	NA	Text
Collection or study or biobank	Name	Name of the study in English	NA	NA	Text
Collection or study or biobank	Description	Description of the study aim; recommendation maximum, 2000 characters	NA	NA	Text
Study	Principal investigator	Name of the person responsible for the study (e.g. the principal investigator)	NA	NA	Text
Collection or study	Sex	Sex of individuals can be one or more values	NA	NA	One or more values
Collection or study	Age low	Age of youngest donor	NA	NA	Number
Collection or study	Age high	Age of oldest donor	NA	NA	Number
Collection or study	Age unit	Unit of age	NA	NA	Value can be in years, months, weeks, or days

Table A5.1. Minimum data set and associated standard available in BRISQ, SPREC, and MIABIS (continued)

Type of data set	Data field	Explanation of data field	BRISQ Tier 1	SPREC	MIABIS
Collection or study	Data categories	Type of data that is associated with the collection or study	NA	NA	List of Yes/No values; also including whether biological samples are collected
Collection or study	Material type	Can be several values defining type of specimen	NA	NA	List of fluid or solid NCI definitions
Collection	Storage temperature	—	NA	NA	List of value ranges
Collection	Collection type	The type of collection; can have several values	NA	NA	List of collection types: case-control, cohort, longitudinal, etc.
Collection	Disease	Main disease of interest; can be more than one	NA	NA	Five subfields: ontology, ontology version, ontology code, ontology description, and free text
Collection or study or biobank	Contact information	Contact information for the contact person	NA	NA	Eight subfields for contact name and contact information (telephone, email, and address)
Study	Study design	Design of the study	NA	NA	List of collection types: case-control, cohort, longitudinal, etc.
Study	Total number of participants	Number of participants recruited	NA	NA	Number
Study	Total number of sample donors	Number of participants who provided samples	NA	NA	Number
Study	Inclusion criteria	Parameters to determine type of donor	NA	NA	List of values
Biobank	Biobank URL	Internet address of the biobank	NA	NA	http address
Biobank	Biobank juristic person	Person or entity legally responsible	NA	NA	Text value with name of juristic person
Biobank	Biobank country	Country of the biobank	NA	NA	ISO standard letter code
Sample	Sample ID	Unique ID or acronym of the study	NA	NA	Text identifier or barcode
Sample	Parent sample ID	Specimen from which the sample was derived; only for aliquots or derivatives	NA	NA	Text identifier or barcode
Sample	Type of sample	Biological definition of the sample	Called "biospecimen type"; solid tissue, whole blood, serum, cells, etc.	Value list; different list and codes for solid and liquid	Called "material type"; list of fluid or solid NCI definitions
Sample	Type of primary container	How the specimen was collected	Called "type of stabilization"; for fluids, analogous to SPREC, but for solids, SPREC calls this field "type of collection"	Value list; for solids, the field is called "type of collection" and the values are different	NA

Table A5.1. Minimum data set and associated standard available in BRISQ, SPREC, and MIABIS (continued)

Type of data set	Data field	Explanation of data field	BRISQ Tier 1	SPREC	MIABIS
Sample	Pre-centrifugation delay	Time between collection and processing in hours	NA	Value list	NA
Sample	Centrifugation	Centrifugation speed (in <i>g</i>) and temperature	NA	Value list	NA
Sample	Second centrifugation	Centrifugation speed (in <i>g</i>) and temperature	NA	Value list	NA
Sample	Post-centrifugation delay	Time between centrifugation and storage in hours	NA	Value list	NA
Sample	Long-term storage	Container and temperature	NA	Value list	Called “storage temperature”; uses SPREC values and has additional value LN ₂
Sample	Type of collection	Biopsy, surgical, FNA, etc.	Called “collection mechanism”	Value list	NA
Sample	Warm ischaemia time	Ranges in minutes	NA	Value list	NA
Sample	Cold ischaemia time	Ranges in minutes	NA	Value list	NA
Sample	Fixation type	OCT compound, RNA <i>later</i> , etc.	Called “constitution and concentration of preservative”; indicates formulations to maintain a non-reactive state, but in BRISQ, also refers to fluid samples	Value list; in SPREC, only refers to solid samples	NA
Sample	Fixation time	Value ranges mostly in hours	NA	Value list	NA
Sample	Long-term preservation	Type of preservation	Can include formalin fixation, freezing, and indication of temperature	Called “long-term storage”, combining this value and the values of “storage temperature” in a single value list	NA
Sample	Storage temperature	Temperature	A temperature or range	Called “long-term storage”, combining this value and the values of “storage temperature” in a single value list	NA
Sample	Sampled time	Time of sampling	NA	NA	The time when the sample was taken
Sample	Anatomical site	The part of the body from which the sample was taken	Organ of origin or site of blood draw	NA	Five values: name, version of ontology, anatomical code, description, and free text
Sample	Biospecimen disease status	For tissue, the pathological status of the specific sample	Normal, diseased, normal adjacent	NA	NA

Table A5.1. Minimum data set and associated standard available in BRISQ, SPREC, and MIABIS (continued)

Type of data set	Data field	Explanation of data field	BRISQ Tier 1	SPREC	MIABIS
Sample	Clinical characteristics	—	Available medical information	NA	NA
Sample	Vital status	—	Alive or deceased	NA	NA
Sample	Clinical diagnosis	Clinical information	Clinical evaluation based on anamnesis and physical examination	NA	NA
Sample	Pathological diagnosis	Pathological information	Macroscopic and microscopic pathological evaluation	NA	NA
Sample	Collection mechanism	How the sample was taken; helps define also whether before or after treatment	FNA, pre-operative blood draw, etc.	NA	NA
Sample	Storage duration	Field recording the length of time that the sample has been stored	Time between acquisition and use	NA	NA
Sample	Shipping temperature	The temperature that is maintained during transportation	Temperature maintained during shipping	NA	NA
Sample	Composition assessment and selection	Criteria used for use; this field is mainly only after use in a specific research study	Criteria used for selection	NA	NA

BRISQ, Biospecimen Reporting for Improved Study Quality; FNA, fine-needle aspiration; ISO, International Organization for Standardization; LN₂, liquid nitrogen; MIABIS, Minimum Information about Biobank Data Sharing; NA, not applicable; NCI, United States National Cancer Institute; OCT, optimal cutting temperature; SPREC, Sample PREanalytical Code.