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vr 0.0.2 Biological entity

# BiologicalEntity

BiologicalEntity specification folder:

<https://drive.google.com/open?id=0B7X2x2IPBve7R3Uza1d6MGpuYVE>

BiologicalEntity official mapping file (with mapped use cases):

<https://drive.google.com/open?id=1h0-fgqnRe25-tVCmu2yWNQjthLzgkW4a1TVNMpCABlc>

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| --- | --- | --- | --- | --- | --- |
| [**Thing**](http://schema.org/Thing) **→** [**CreativeWork**](http://schema.org/CreativeWork) **→ *BiologicalEntity*** | | | | | |
| Any biological entity such as gene, protein, taxon, chemical, sample, etc. | | | | | |
| **@id/resource:** identifiers.org should be used to identify the concept associated to the described entity. Any other concept identifier URL can be specified via sameAs | | | | | |
| **Property** | **Expected type** | **Description** | [**Key**](https://docs.google.com/document/d/1h6epLfXfLYXamUN9ycHBcWaS19OyRxYEbsvRYjjh9ts/edit#bookmark=id.qajwlsh81eim) | **Cardinality** | **Use case** |
| ***biologicalType*** | [Text](http://schema.org/Text) | List with types preferably supported by BioSchemas-> enumeration list of values maintained on a wikipage (cf [accessibilityAPI](http://schema.org/accessibilityAPI) in schema.org for implementation). If the value is not on the list then the data will still be parsed but only generic properties will be validated.  {population,individual,tissue,cell,molecule,protein,nucleic acid} | M | one | Accessibility, Findability, Summarization |
| ***taxon*** | [URL](http://schema.org/URL) | A url pointing to NCBI Taxonomy or a taxonomic resource | O | many | Findability |
| ***sample*** | Sample (BiologicalEntity?) | Clarify usage... | O | many |  |
| ***phenotype*** | Text, url, [PropertyValue](http://schema.org/PropertyValue) | To associate a biological entity to phenotypic information , whether the entity presents the phenotype or causes it. | O | many | Accessibility, Findability, Summarization |
| ***associatedDisease*** | [MedicalCondition](https://health-lifesci.schema.org/MedicalCondition) OR [URL](http://schema.org/URL) | Disease associated to this protein feature | O | many | Findability, Summarization |
| ***method*** (or [measurementTechnique](http://pending.schema.org/measurementTechnique) as used in Dataset) | Text, url, [PropertyValue](http://schema.org/PropertyValue) | To describe the process used to obtain a biological entity or which is associated with that entity (i.e procedure to obtain it or measure/characterise it) | O | many | Findability.  May [also] belong on Dataset/DatasetEntry |
| ***bioLocation*** | [PropertyValue](http://schema.org/PropertyValue) | **Usage:** Use a [PropertyValue](http://schema.org/PropertyValue) with properties [minValue](http://schema.org/minValue) and [maxValue](http://schema.org/maxValue) for a region or [value](http://schema.org/value) for a site in a Protein. | O | many |  |
| [location](http://schema.org/location) | [Place](http://schema.org/Place) | Position where this entity is located or originates from (e.g. an entity from Polynesia islands or an Anatomical location. | O | many | Summarization |
| ***crossReference*** | [Thing](http://schema.org/Thing) | A pointer to another, somehow related entity.  Usage: Whenever isBasedOn/isBasisFor, isPartOf/hasPart, citation or any other more specific does not work. | O | many | Accessibility, Findability, Summarization |
| ***representation*** | [Text](http://schema.org/Text) or [URL](http://schema.org/URL) or PropertyValue | Representation of this entity. For instance, chemical structure or sequence | O | many | Accessibility |
| **Properties from** [**CreativeWork**](http://schema.org/CreativeWork) | | | | | |
| [citation](http://schema.org/citation) | [Article](http://schema.org/Article) or  [Text](http://schema.org/Text) | A citation or reference to another creative work, such as another publication, web page, scholarly article, etc. | R | many | Findability, Summarization |
| [dateCreated](http://webschemas.org/dateCreated) | [Date](https://schema.org/Date) or  [DateTime](https://schema.org/DateTime) | The date on which the CreativeWork was created or the item was added to a DataFeed. | O | one | Accessibility, summarization |
| [dateModified](http://webschemas.org/dateModified) | [Date](https://schema.org/Date) or  [DateTime](https://schema.org/DateTime) | The date on which the CreativeWork was most recently modified or when the item's entry was modified within a DataFeed. | O | one | Accessibility, summarization |
| [datePublished](http://webschemas.org/datePublished) | [Date](https://schema.org/Date) | Date of first broadcast/publication. | O | one | Accessibility, summarization |
| [hasPart](http://schema.org/hasPart) | ***CreativeWork (BiologicalEntity)*** | Indicates a CreativeWork that is (in some sense) a part of this CreativeWork. Inverse property: isPartOf. | O | many | Findability, Summarization |
| ***isBasisFor*** | [CreativeWork](http://webschemas.org/CreativeWork) or [URL](http://schema.org/URL)  **Usage:** [URL](http://schema.org/URL) | A resource for which this reso  urce has been used for the creation of the former.  Inverse property: isBasedOn | O | many | Accessibility,  Summarization |
| [isBasedOn](http://webschemas.org/isBasedOn) | [CreativeWork](http://webschemas.org/CreativeWork) or [URL](http://schema.org/URL) | A resource that was used in the creation of this resource. This term can be repeated for multiple sources.  **Usage:** [CreativeWork](http://webschemas.org/CreativeWork) or [URL](http://schema.org/URL) corresponding to Evidence code (i.e., ECO --<http://purl.obolibrary.org/obo/ECO_0000259>, GO evidence codes --<http://geneontology.org/page/guide-go-evidence-codes#IEA>) or any other entity this protein entity is based on | O | many | Accessibility, Summarization |
| [isPartOf](http://schema.org/isPartOf) | ***BiologicalEntity*** | Indicates a CreativeWork that this CreativeWork is (in some sense) part of. Inverse property: hasPart.  Usage: **Gene** from which this protein entity was translated or **ProteinEntity** containing this protein entity | O | many | Findability, Summarization |
| [distribution](http://schema.org/distribution) | [DataDownload](http://schema.org/DataDownload) | A downloadable form of this entity, at a specific location, in a specific format | O | many | Accessibility |
| **Properties from** [**Thing**](http://schema.org/Thing) | | | | | |
| [additionalProperty](https://schema.org/additionalProperty) | [PropertyValue](https://schema.org/PropertyValue) | A property-value pair representing an additional characteristics of the entitity, e.g. a product feature or another characteristic for which there is no matching property in schema.org. | O | many |  |
| [alternateName](http://schema.org/alternateName) | [Text](http://schema.org/Text) | An alias for the item | R | many | Summarization |
| [description](http://schema.org/description) | [Text](http://schema.org/Text) | A description of the item | R | one | Summarization |
| [identifier](http://webschemas.org/identifier) | [PropertyValue](http://webschemas.org/PropertyValue) or  [Text](http://webschemas.org/Text) or  [URL](http://webschemas.org/URL) | The identifier property represents any kind of identifier for any kind of [Thing](http://webschemas.org/Thing), such as ISBNs, GTIN codes, UUIDs etc. Schema.org provides dedicated properties for representing many of these, either as textual strings or as URL (URI) links. See [background notes](http://webschemas.org/docs/datamodel.html#identifierBg) for more details.  **Usage:** Accession number and/or URL. If URL is used, then identifiers.org is recommended. Accession number is recommended. | M | one (unique, should follow Dataset pattern) | Accessibility, Findability, Summarization |
| [image](http://schema.org/image) | [ImageObject](http://schema.org/ImageObject) or [URL](http://schema.org/URL) | An image of the item | R | many | Summarization |
| ***isMentionedIn*** | [Thing](http://schema.org/Thing) | CretiveWork, Dataset, collection mentioning this entity  Inverse of: [mentions](https://schema.org/mentions) | R | one | Findability, Summarization |
| [name](http://schema.org/name) | [Text](http://schema.org/Text) | The name of the item | R | one (the recommended only) | Findability, Summarization |
| [sameAs](http://schema.org/sameAs) | [URL](http://schema.org/URL) | URL of a reference Web page that unambiguously indicates the item's identity. E.g. the URL of the item's Wikipedia page, Freebase page, or official website. | R | many | Findability, Summarization |
| [url](http://schema.org/url) | [URL](http://schema.org/URL) | URL of the item | R | one | Findability |

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