# Protein (BioChemEntity profile) specification 0.0.1

Thing > PhysicalEntity

Bioschemas specification describing a Protein (BioChemEntity profile) in Life Sciences

## Description

This Protein profile specification presents the BioChemEntity usage when describing a Protein.

# Properties

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Properties from [BioChemEntity] | | | | | |
| **Property** | **Expected Type** | **Description** | **CN** | **MG** | **CV** |
| additionalProperty | 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.  Note: Publishers should be aware that applications designed to use specific schema.org properties (e.g. http://schema.org/width, http://schema.org/color, http://schema.org/gtin13, ...) will typically expect such data to be provided using those properties, rather than using the generic property/value mechanism.  Bioschemas usage.  Additional to the use of name and description to describe this property in a human-readable way, in Bioschemas additionalType is used to specify the nature of the property/relation. For instance, if the property refers to a disease association, you could use http://semanticscience.org/resource/SIO\_000983. | many | O | Yes, as better suits to describe this additional property. |
| additionalProperty.disease\_ association | PropertyValue | “additionalProperty” : {  “additionalType”: “http://semanticscience.org/resource/SIO\_000983”  “name”: “disease association”,  “value”: {  “@type”: [“StructuredValue”, “MedicalCondition”],  “additionalType”: “http://semanticscience.org/resource/SIO\_010299”,  “name”: “<disease name>”,  “identifier”: “<disease identifier/URL>”,  "code": {  "@type": "MedicalCode",  "code": "<medical code>",  "codingSystem": "<coding system>"  }  }  } | many | O | SIO:SIO\_000983, SIO:SIO\_010299, OMIM, any other well-known ontology describing diseases |
| additionalProperty.transcribed from | PropertyValue | “additionalProperty” : {  “additionalType”:  “http://semanticscience.org/resource/SIO\_010081”  “name”: “transcribed from”,  “value”: {  “@type”: “StructuredValue”  additionalType: “http://semanticscience.org/resource/SIO\_010035”,  “name”: “<gene name>”  }  } | one | M | SIO:SIO\_010081, SIO:SIO\_010035 |
| isContainedIn | PhysicalEntity | Indicates a PhysicalEntity that this PhysicalEntity is (in some sense) part of. | many | O |  |
| isContainedIn.organism | PhysicalEntity | "isContainedIn": {  "@type": "PhysicalEntity",  "additionalType": "http://semanticscience.org/resource/SIO\_010000",  "identifier": "<taxon ID>",  "name": "Homo sapiens",  "url": "<taxon ID URL>"  } | one | M | SIO:SIO\_010000, Recommended url should point to a well-known ontology such as NCBI taxon or UniProt Taxonomy |
| contains | PhysicalEntity | Indicates a PhysicalEntity that is (in some sense) a part of this PhysicalEntity.  Inverse property: isPartOf. | many | O |  |
| location | Place,  PostalAddress,  PropertyValue,  Text or URL | The location of for example where the event is happening, an organization is located, or where an action takes place.  Bioschemas usage.  In Bioschemas location can be refer to a position in a chromosome or sequence or to a physical place where, for instance, a sample is stored. Using additionalType is advised to make the distinction. For instance, FALDO can be used for sequence coordinates. | many | O | Yes, as it better suits to describe the location. |
| hasRepresentation | Record, PropertyValue, Text or URL | Any representation of this entity. For instance, a record in a dataset or a web page about it.  If the representation is an image, it is advisable to use the property image from Thing  Bioschemas usage.  Protein profile usage.   * Record. Point to a dataset record representing this protein | many | R | Yes, as it better suits to describe the nature of the representation |

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| --- | --- | --- | --- | --- | --- |
| Properties from [Thing] | | | | | |
| **Property** | **Expected Type** | **Description** | **CN** | **MG** | **CV** |
| additionalType |  | An additional type for the item, typically used for adding more specific types from external vocabularies in microdata syntax. This is a relationship between something and a class that the thing is in. In RDFa syntax, it is better to use the native RDFa syntax - the 'typeof' attribute - for multiple types. Schema.org tools may have only weaker understanding of extra types, in particular those defined externally.  Bioschemas usage.  Protein profile usage.  Use http://semanticscience.org/resource/SIO\_010043 | one | M | http://semanticscience.org/resource/SIO\_010043 |
| alternateName | Text | An alias for the item | many | O |  |
| description | Text | A description of the item.  Bioschemas usage.  Use in LabProtocol to include the step byt step process folowed in this protocol. | one | R |  |
| identifier | PropertyValue, Text, URL | The identifier property represents any kind of identifier for any kind of 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 for more details. | one | M |  |
| image | ImageObject or  URL | An image of the item. This can be a URL or a fully described ImageObject. | many | O |  |
| name | Text | The name of the item | one | M |  |

**Legend:** *CN: Cardinality (one, many)*

*MG: Marginality (M: minimum; R: recommended; O: optional)*

*CV: Suggested controlled vocabularies (yes, no)*

# Examples

Schema.org [suggests](http://schema.org/docs/gs.html) implementing metadata using JSON-LD, RDFa or Microdata. JSON-LD is the recommended format by Google, but any of these formats can be used for embedding information about tools in a web page or other online resource.

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| Example 1 - [format: JSON-LD]. [Example description. Simple but comprehensive example] |
| {  "@type": "PhysicalEntity",  "additionalType": "http://semanticscience.org/resource/SIO\_010043",  "alternateName": [  {  "@language": "en",  "@value": "EGFR\_HUMAN"  },  {  "@language": "en",  "@value": "EGFR"  }  ],  "description": {  "@language": "en",  "@value": "Receptor tyrosine kinase binding ligands of the EGF..."  },  "identifier": "P00533",  "name": "Epidermal growth factor receptor",  "contains": {  "@type": "PhysicalEntity",  "additionalType": "http://semanticscience.org/resource/SIO\_010041",  "description": "Proton acceptor"  },  "location": {  "@type": "PropertyValue",  "additionalType": "http://biohackathon.org/resource/faldo#ExactPosition",  "name": "FALDO position",  "value": 837  },  "hasRepresentation": "http://purl.uniprot.org/uniprot/P00533"  } |