



1. BCS

2. Entity_Signature

An **Entity** is a bounded space or a structural part of a specific organism. BCS covers a hierarchy of entities ranging from small molecules (atomic entities: table Atomic_Signature) through composite structures (structure entities: table Structure_Signature) to large complex molecules (complex entities; Complex_Signature).

3. Atomic_Signature

Atomic entity describes the most basic type of biological objects. Atomic entities are usually used to express small biological objects which can change their state. It holds information about the agent name and associated state.

4. Complex_Atomic_Signature

Complex entity represents a non-trivial composite biochemical object that is inductively constructed from already known biological objects.

Atomic composition of the complex.

5. State

6. Structure_Signature

Structure entity represents a biochemical object that is composed of several known atomic agents while we know that a composition is abstract and not necessarily complete. The key construct of a structure agent is partial composition defined as a set of atomic agents which are considered to be relevant parts of the structure agent. We allow this set to be empty with the meaning of a biological structure for which we do not know its composition.

7. Classification

Specifies the type of an entity or rule in a sense of functional or structural characterisation.

8. entity_Classification

9. Classification_Rule

📁10. Compartment

📁11. Space

TODO

📁12. Rule_Space

📁13. Rule

Rule is specified by rule **equation** enriched with additional annotation information, such as **description**, **link** to external databases and **full rule name**.

- division of rule entities to **reactants** and **products** is designed by table RuleItem, col. isReactant.

- **stoichiometry** coefficients are stored in table RuleItem, col. count.

- A rule can also have an assigned **classification**. Rule classification assigns a list of higher level biophysical processes in which the rule is involved.

- Irreversible and **reversible** rules are distinguished by the operators \Rightarrow and \Leftrightarrow respectively. And represent by col. reversible (true/false).

note: Every agent appearing in a rule equation has to be followed by the localisation operator associating it with a particular **compartment**. This is for example important for rules that act on both sides of a membrane. That way, a rule is always precisely localised in or between the compartments.

📁14. RuleItem

An Agent from specific Rule. This agent is associated with concrete Entity (from Entity table) and stoichiometry (column Count).

📁15. exLink

Url link to external database

📁16. exDatabase

table with list of supported external databases

📁17. Entity_Signature_exLink

18. exLink_Rule

19. Organism_entity

20. Structure_Signature_Atomic_Signature

21. Atomic_Signature_Complex_Atomic_Signature

22. Complex_Structure_Signature

Complex entity represents a non-trivial composite biochemical object that is inductively constructed from already known biological objects.

Structure composition of the complex.

23. Structure_Signature_Complex_Structure_Signature