The CALBC RDF Triple store: retrieval over large literature content

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Outline

- Motivation
- Integrating multiple resources
  - CALBC Corpus
  - LexEBI
  - Public databases
- Querying the Triple Store

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Why representing scientific literature in RDF?

- Scientific literature:
  - Primary data resource reporting novel scientific findings
- Text-mining:
  - Biological entities recognition
  - Population of biomedical databases through curators
- RDF representation:
  - Standardization of the content extracted
  - **Exploitation of the literature in the Semantic Web**

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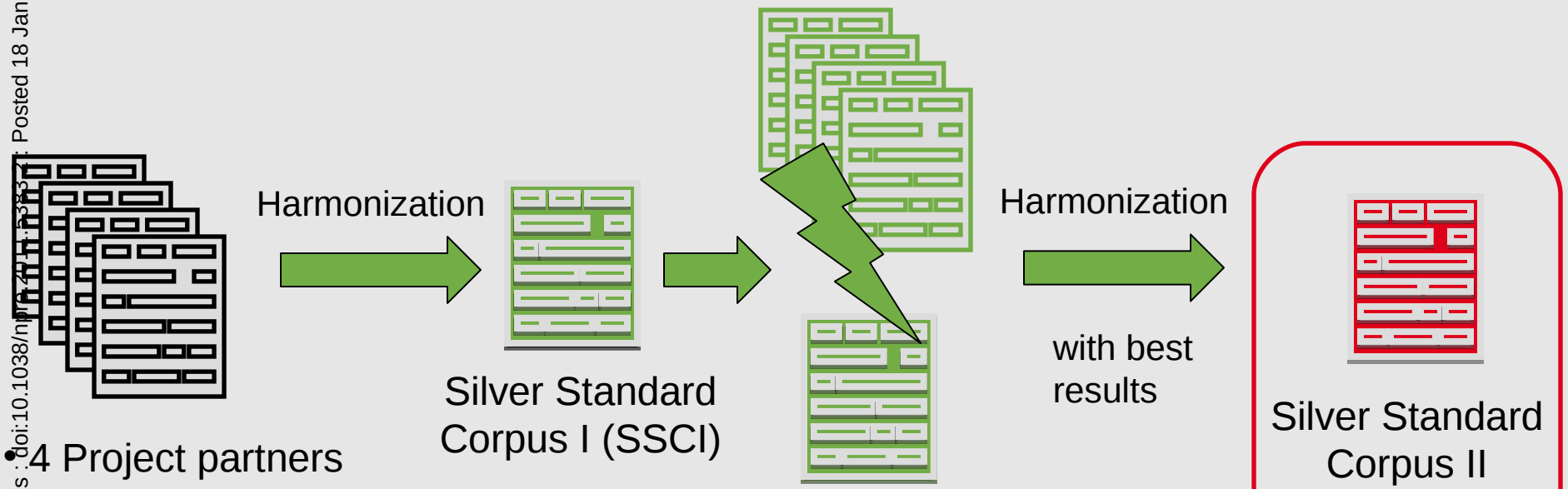
CALBC Corpus

- Collaborative Annotation of a Large Biomedical Corpus



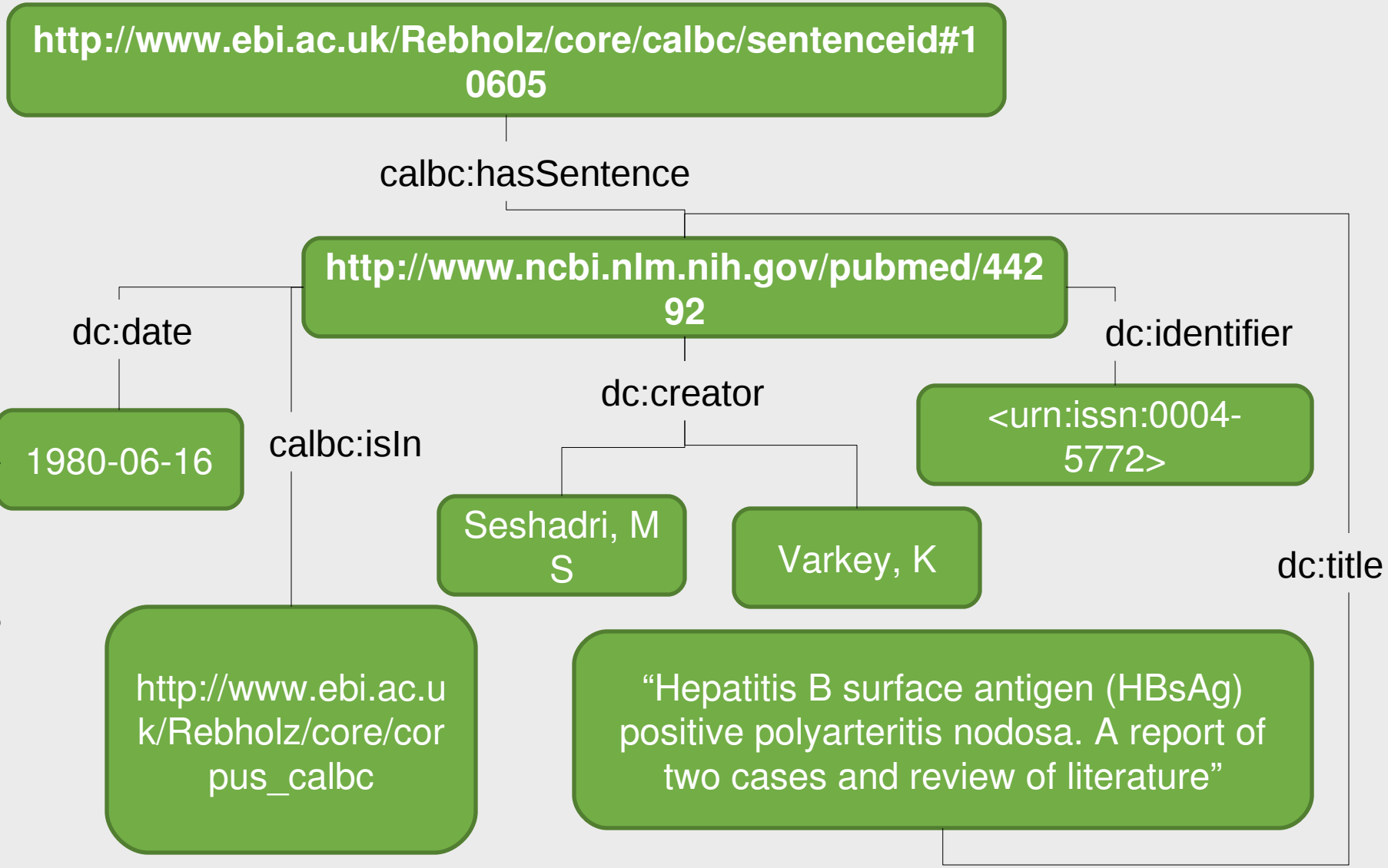
- 4 Project partners
- 150’000 Medline abstract related to Immunology annotated

CALBC Corpus

- Advantages of the CALBC Corpus:

- Large-scale corpus
- 4 semantic types: Gene-Protein, Diseases, Chemicals and Species
- Generated in a purely automatic way
- Highly reproducible
- http://www.calbc.eu/

CALBC in RDF



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@prefix calbc: http://www.ebi.ac.uk/Rebholz/core/calbc/

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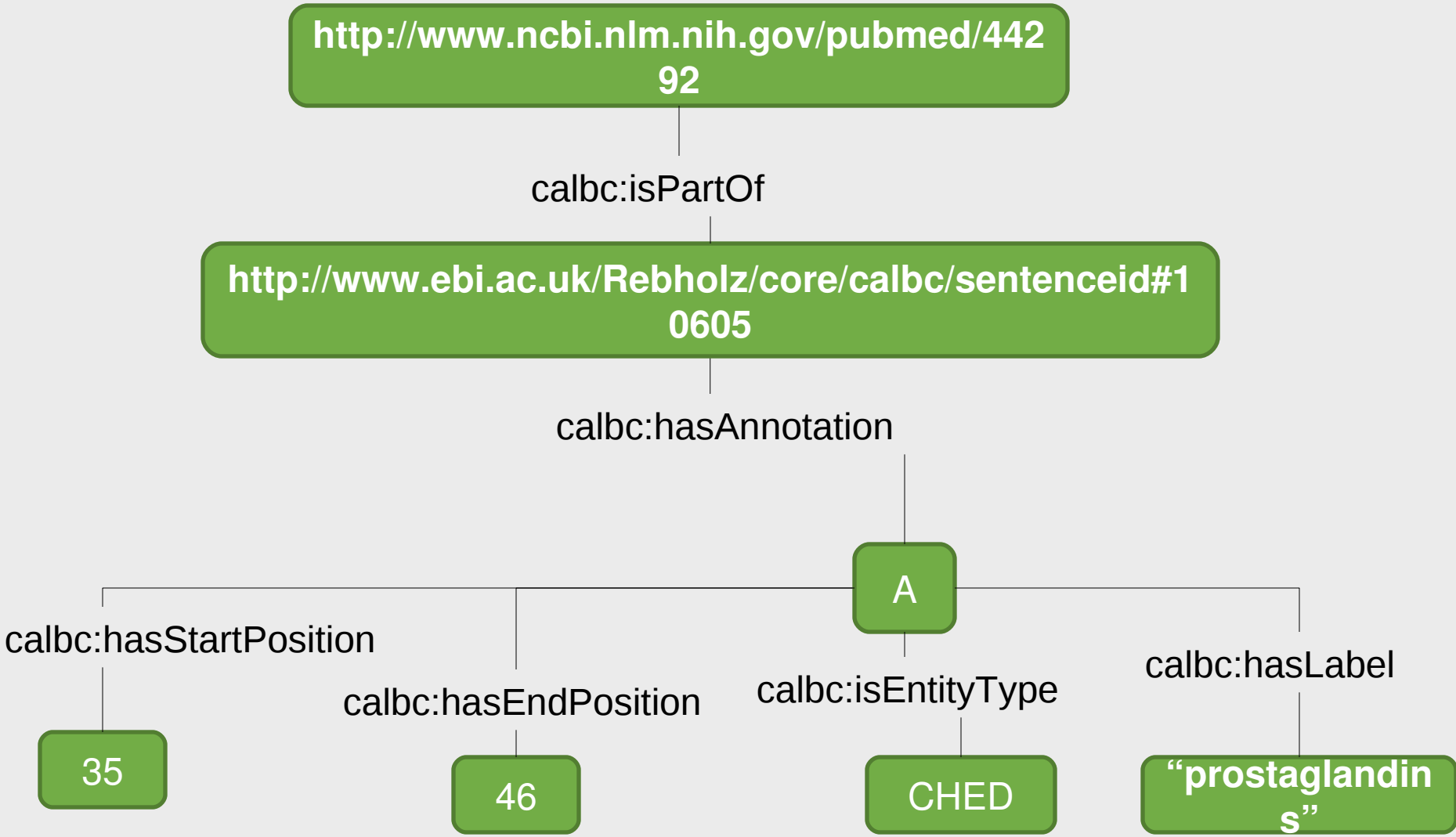
CALBC in RDF



Nature Precedings : doi:10.1038/npre.2011.5383.2 : Posted 18 Jan 2011

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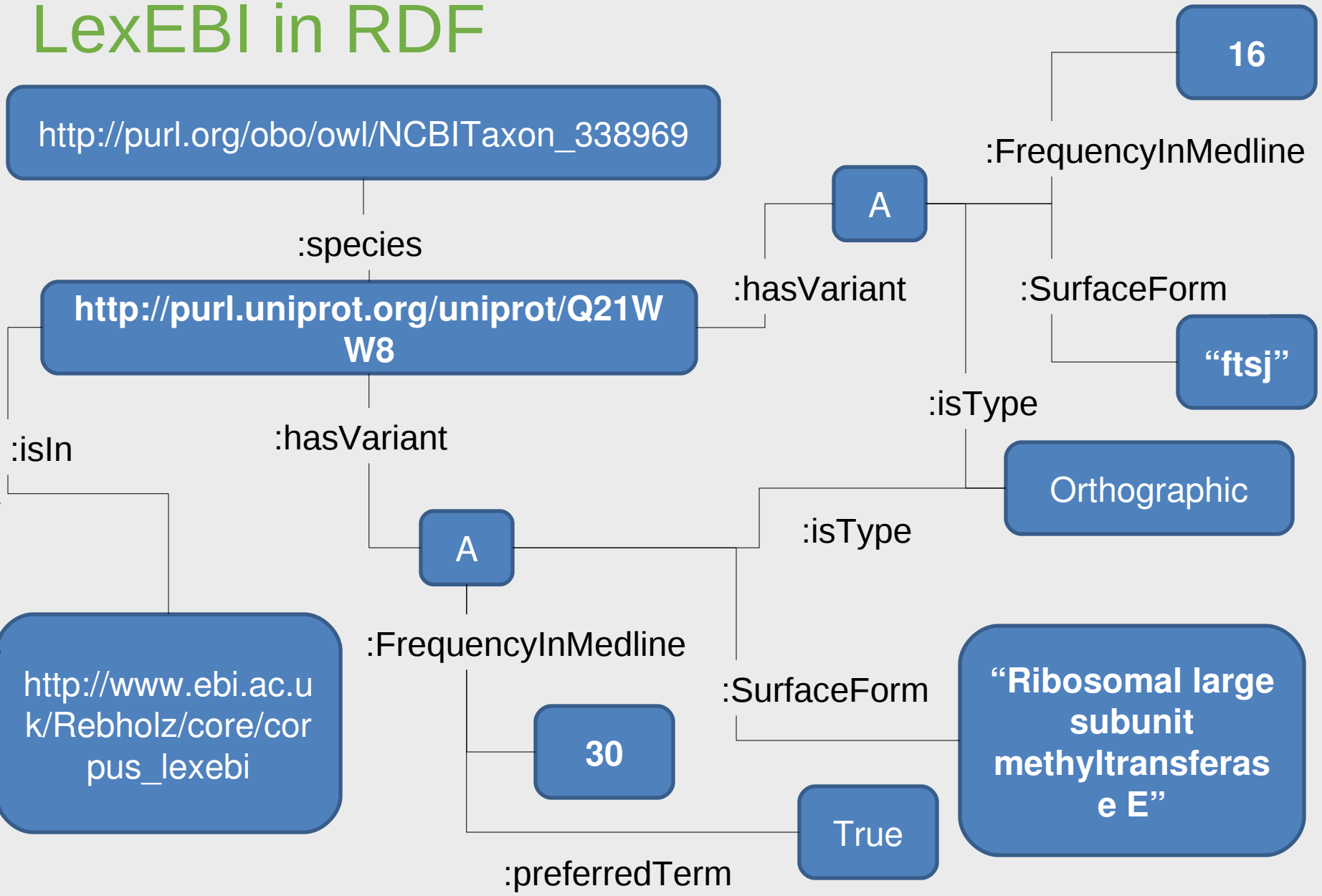
LexEBI

- BioThesaurus: Complete term repository for the biomedical domain
- LexEBI → XML

- <u>Features:</u>

  - Frequency count for the occurrence of the term in British National Corpus (BNC) or in MEDLINE → **Disambiguation**
  - Mapping to original resource (URI) → **Normalization**

LexEBI in RDF



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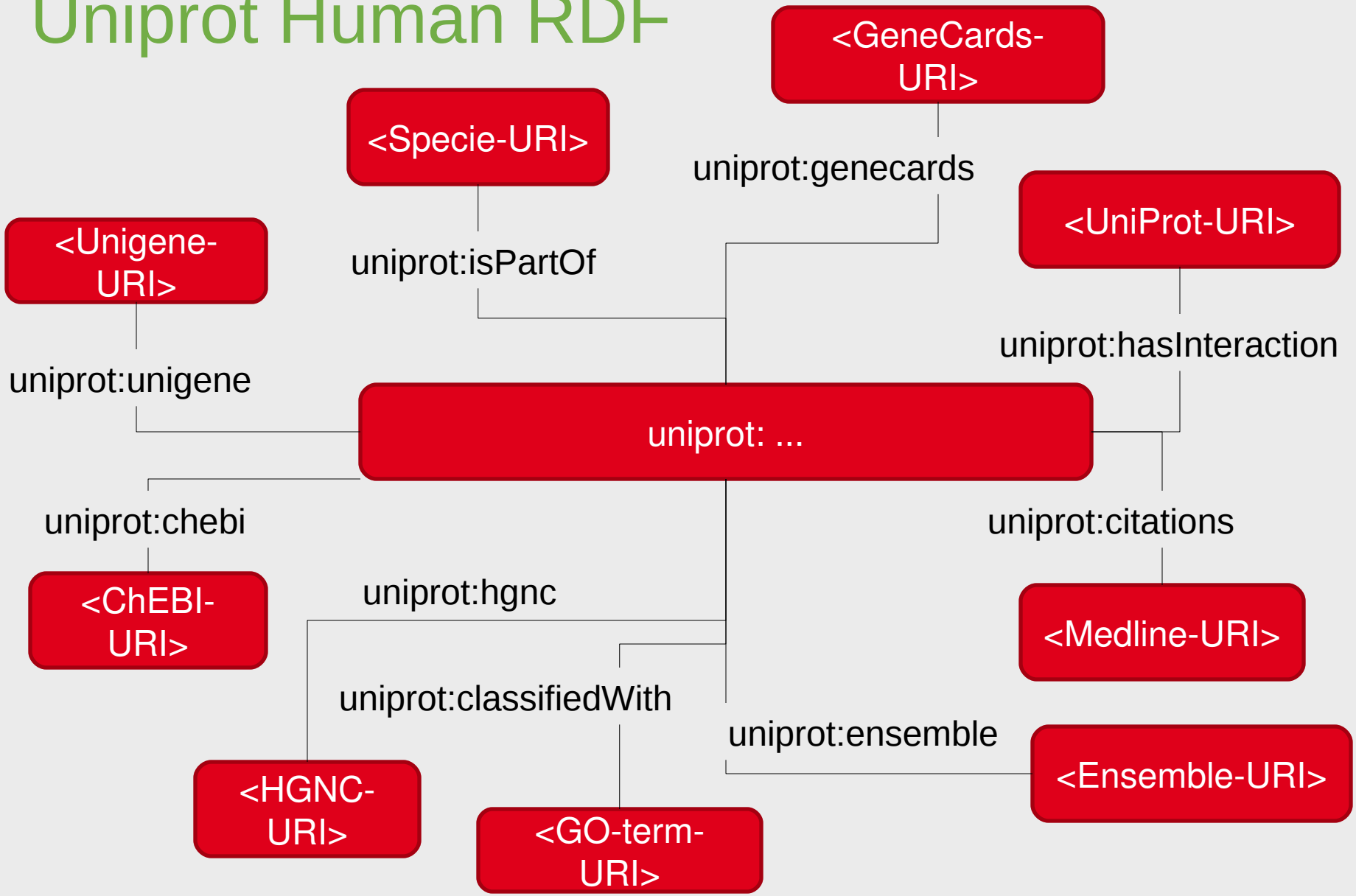
Uniprot Human RDF



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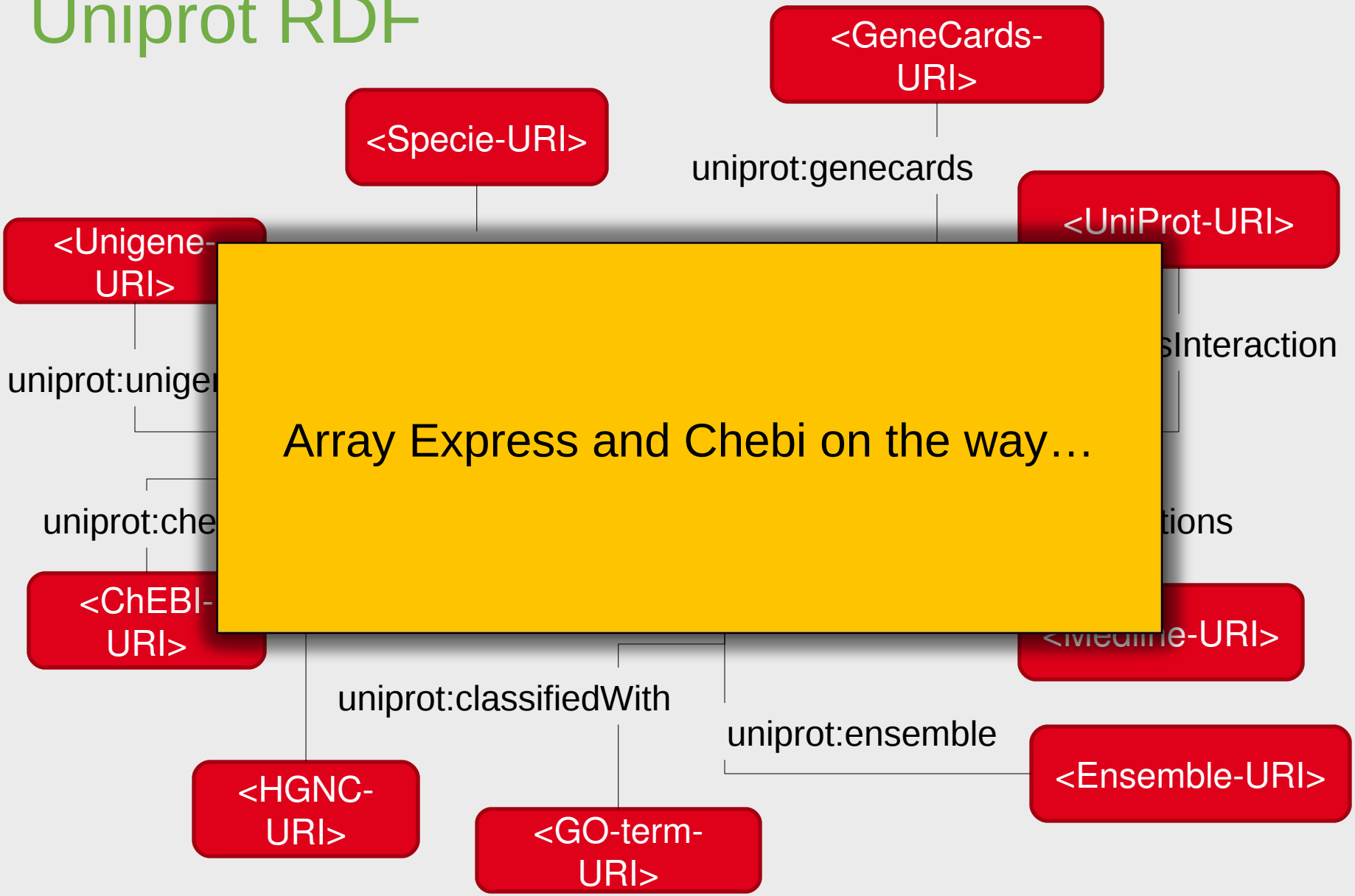
Uniprot RDF



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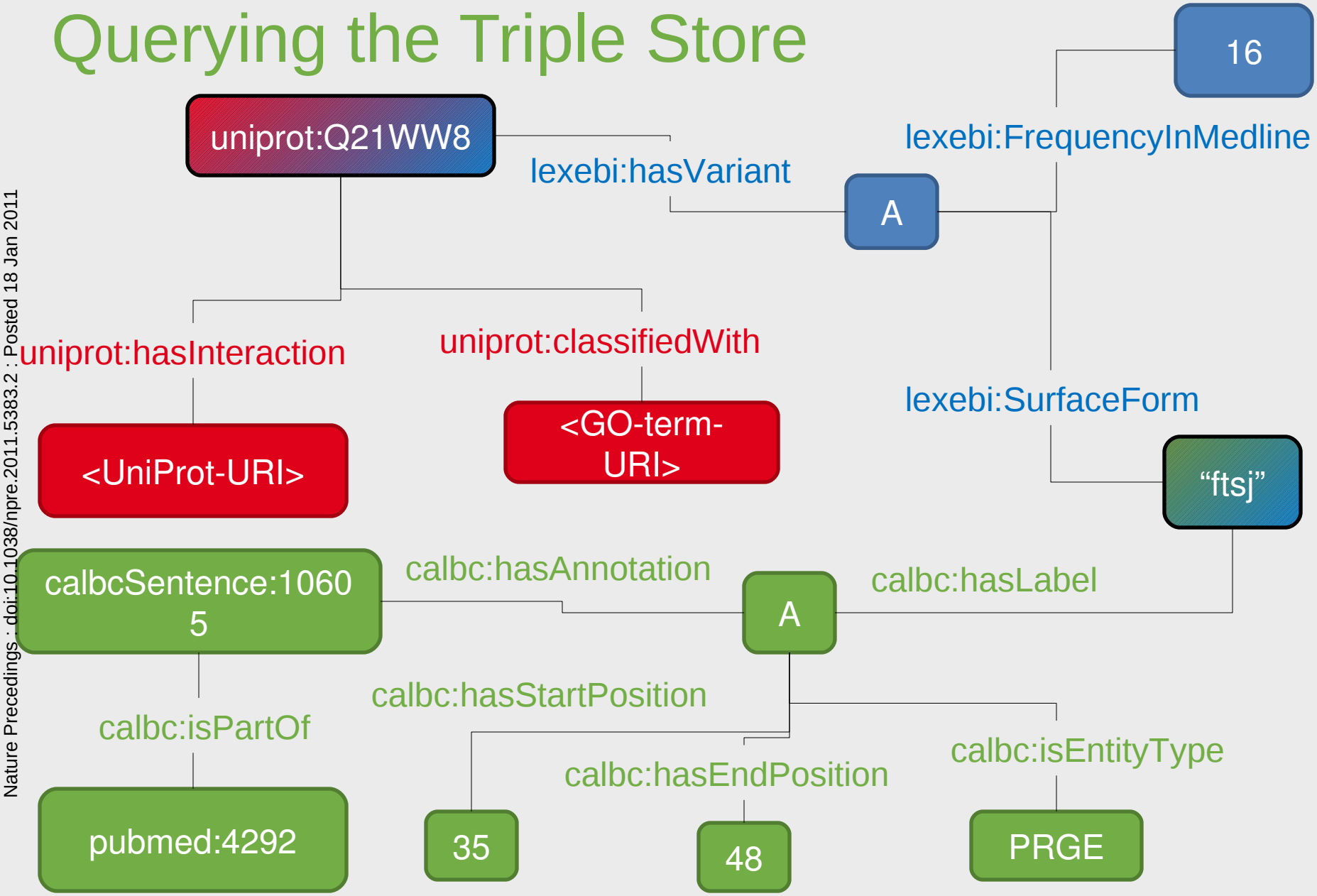

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Use cases

- Normalization of CALBC named entities
- Disambiguation of CALBC named entities
- Term collocation at the sentence level → e.g. Evidence for Gene – Disease association

- Checking consistency of bioinformatics resources from literature

Thank you for your attention

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