## Ontorat Web Server for Automatic Ontology Term Generation and Annotations

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- Needs: Often we need to (1) create a large number of new ontology terms or (2) annotate existing terms, that follow the same design patterns of logical definitions and axioms.
- Challenge: Manual addition of these terms is time consuming, error prone, and often boring.
- Goal: Ontorat is developed to facilitate this process.

# **Ontorat Design and Implementation**

### **Development Strategy:**

- Developed based on Ontology Design Patterns
- Inspired by OBI Quick Term Templates (QTT)
- Implement OBI QTT procedure
- No RDF store used
- Web-based user interface

#### **Needs Three Parts for Execution:**

- 1) Target ontology → to avoid ID duplication
- 2) Input data file: Excel or tab-delimited text form
- 3) Setting scripts → use Manchester OWL Syntax (note: settings can be stored and reused)

#### Output Results:

- OWL or Manchester syntax output file
- Can be imported/merged to target ontology using Protege-OWL editor

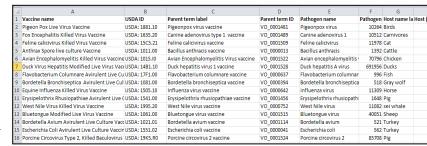
#### **Ontorat Web Interface:**

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Orfile upload:	Browce	
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anually gener	ate Ontorat settings from web form:	
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(A) Specify target ontology



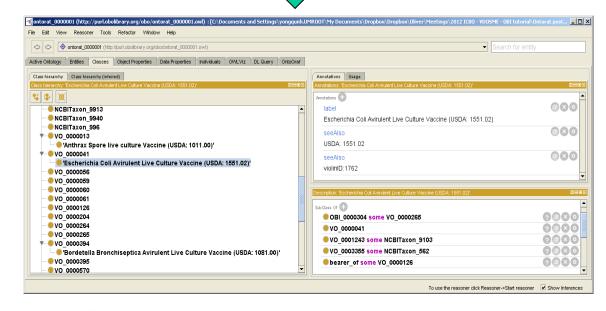
### Use case study

- Use Ontorat to generate new vaccine terms in Vaccine Ontology (VO)
- Automatically created new VO terms for ~800 licensed vaccines
- Advantages:
  quick, user-friendly,
  scalable, robust,
  save/reuse templates.





(D) Execute and retrieve output OWL file



(E) OWL output displayed and merged to target ontology using Protege.