

RightField is an open source desktop tool for embedding ontology term selection in to Excel spreadsheets to create templates. Vanilla Excel spreadsheets are produced and do not contain macros or require special plugins.

The screenshot shows the RightField application window. On the left is an Excel spreadsheet with columns A, B, C, and D. Rows 1-15 contain metadata, rows 16-29 contain sample information, and rows 30-45 contain protocols. Some cells in rows 10-14 are highlighted in green. On the right is a panel titled 'Selected cells: B12:B12'. It shows 'ONTOLOGY HIERARCHIES' with a tree view where 'ExperimentalAssayType' is selected. Below this is a 'VALUE TYPE AND PROPERTY' section with a dropdown menu set to 'hasType'. At the bottom is an 'ALLOWED VALUES' list containing terms like 'Comparative genomic hybridization', 'DNA sequencing', etc.

RightField enables ranges of cells to be marked up so that they can only be selected from specific ontology terms.

It works with OWL and OBO ontologies, RDF Schema and SKOS vocabularies.

Provenance information such as complete term IRIs, the source ontologies they were taken from and ontology version information is embedded within the Excel spreadsheet itself for later use. However, all embedded ontology information is hidden from the spreadsheet user.

Class hierarchies of loaded ontologies in separate tabs

Method of specifying ontology terms
Terms lists are specified by selecting a class from one of the loaded ontologies and then by choosing to derive the terms as the direct/indirect subclasses or instances of the selected class.

Excel workbook with marked up cells

Marked up cells are shown with green overlays. In Excel, values for these cells must come from the specified list of ontology terms.

Term list for selected cells

The values of the selected marked up cells must come from this list of ontology terms. (In this case, these terms represent subclasses of the AssayType from the JERM ontology).

When a spreadsheet template with embedded terms and marked up cells is opened in Excel, drop down lists allow users to choose values to enter for that cell.

Once filled out a spreadsheet can be saved and processed so that an RDF Graph, which relates back to the original ontology can be produced.

Biologists, who are intimately familiar with Excel, produce semantic annotations as part of their daily workflow, without any need for specialised ontology editing tools, or knowledge of ontologies.

The screenshot shows the same Excel spreadsheet as before, but with a dropdown menu open for the cell B12. The dropdown list shows 'biological replicate' selected. A red arrow points from the text 'biological replicate' in the dropdown to the text 'biological replicate' in the spreadsheet cell. Another red arrow points from the text 'biological replicate' in the dropdown to the text 'biological replicate' in the dropdown list.