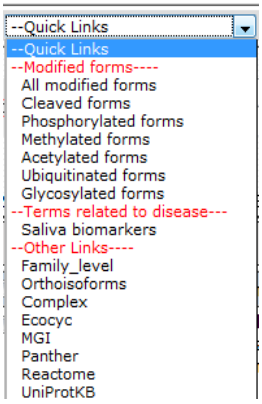
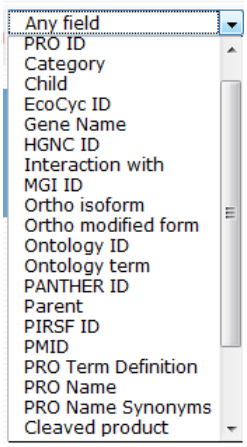
Search and Result Help Document

Advanced Search

1-Quick links: quick link to common searches, such as retrieving modified forms or terms with cross-reference to a database. Select the option an all relevant terms will be retrieved. You can combine quick links with search (**2**) to further refine your search, for example if you want to find modified forms of smad2 (see below).



2-Search boxes: enter text or identifiers to retrieve terms. You can restrict the search field by selecting option from pull down menu:



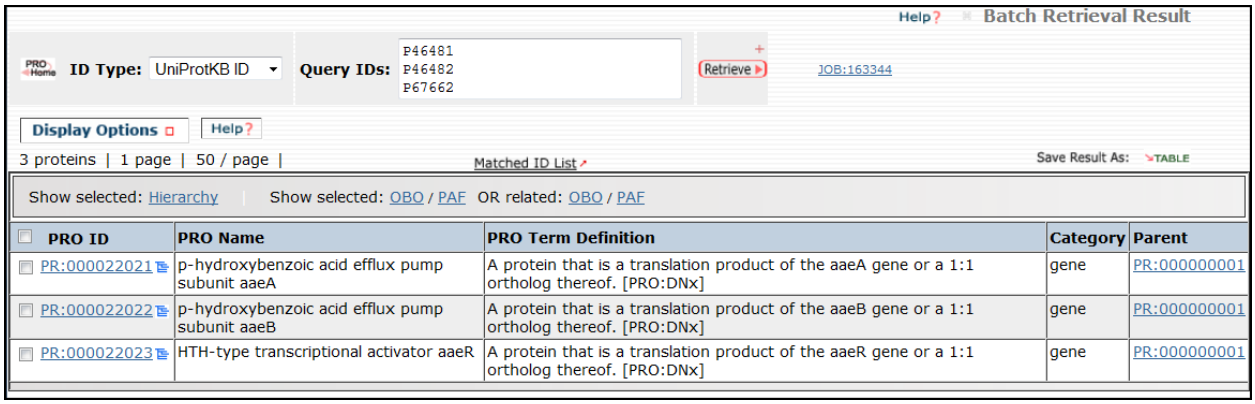
You can combine search boxes by using Boolean operators AND, NOT, OR. In addition, it allows null/not null type of searches. For example, if you want to retrieve all PRO terms with cross-reference to EcoCyc then select EcoCyc ID from menu and enter “not null” in search boxes.

Use the Add/delete input box for extending or removing text boxes.

Information about the search fields with examples is provided at the end of this document.

3-Batch Retrieval: to retrieve multiple entries using PRO IDs or other optional IDs. For example, if you want to retrieve PRO terms that correspond to UniProtKB entries: P46481, P64680, and P67662, select the

UniProtKB ID from ID Type pull down, and enter accessions in Query IDs box, then select retrieve. The result table also contains a link to Matched ID list that can be saved for checking the ID mapping.



Help? Batch Retrieval Result

ID Type: UniProtKB ID Query IDs: P46481 P46482 P67662 Retrieve JOB:163344

Display Options Help?

3 proteins | 1 page | 50 / page | Matched ID List Save Result As: TABLE

Show selected: Hierarchy Show selected: OBO / PAF OR related: OBO / PAF

PRO ID	PRO Name	PRO Term Definition	Category	Parent
PR:000022021	p-hydroxybenzoic acid efflux pump subunit aaeA	A protein that is a translation product of the aaeA gene or a 1:1 ortholog thereof. [PRO:DNx]	gene	PR:000000001
PR:000022022	p-hydroxybenzoic acid efflux pump subunit aaeB	A protein that is a translation product of the aaeB gene or a 1:1 ortholog thereof. [PRO:DNx]	gene	PR:000000001
PR:000022023	HTH-type transcriptional activator aaeR	A protein that is a translation product of the aaeR gene or a 1:1 ortholog thereof. [PRO:DNx]	gene	PR:000000001

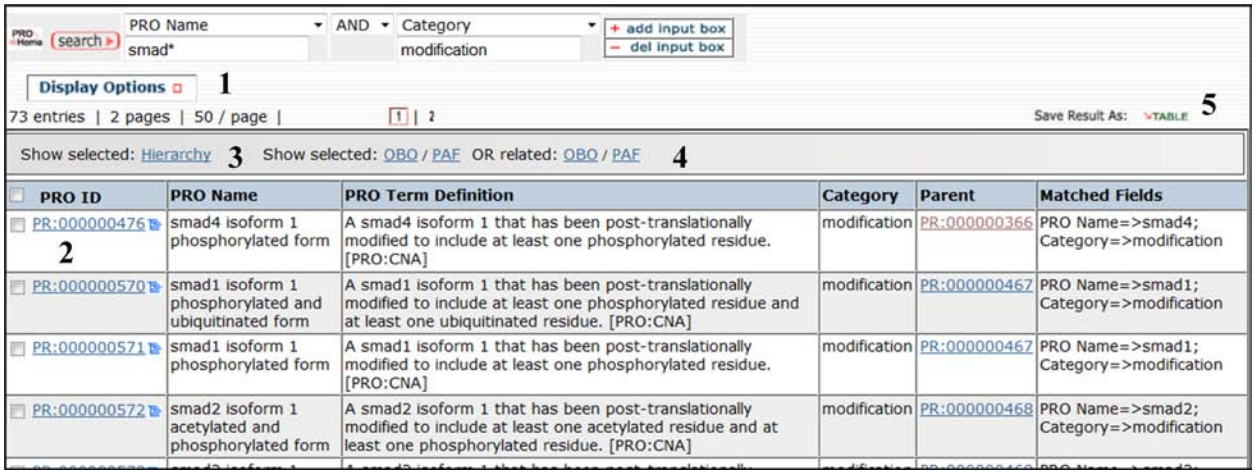
Search Fields in PRO

The text search allows Boolean (AND, OR, NOT) searches as well as null (not present)/null (present) searches.

Field	Examples	Options	Comment
PRO ID	PR:000000002	Any Protein Ontology ID	
Category	sequence	family; gene; sequence; modification; complex	Retrieve terms that belong to the entered category. Add organism- if you want to select the organism- specific set.
Child	PR:000024523	Any Protein Ontology ID	Will retrieve the terms for which the PRO ID is a child, in this example: PR:000023113
EcoCyc ID	PHOSPHO-TORASP	Any EcoCyc ID	Will retrieve the terms for which there is a cross-reference for EcoCyc, in this example: PR:000025449
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to EcoCyc, respectively. In this example it will retrieve all PRO terms with EcoCyc cross-reference.
gene name	SMAD2	gene symbol	Will retrieve terms that contain the gene symbol.
HGNC ID	11851	Any HGNC ID	In this case it will retrieve PR:000001156
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to HGNC, respectively. In this example it will retrieve all PRO terms with HGNC cross-reference.
interaction with	not null	null; not null	To retrieve all PRO terms that do not or do contain a protein binding annotation, respectively. In this example it will retrieve all PRO terms with annotation protein binding.
MGI ID	1313268	Any MGI ID	In this case it will retrieve PR:000000010
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to MGI, respectively. In this example it will retrieve all PRO terms with MGI cross-reference.
ortho isoform	not null	null; not null	To retrieve all PRO terms that do not or do contain ortho isoforms
ortho modified form	not null	null; not null	To retrieve all PRO terms that do not or do contain ortho modified forms
ontology ID	GO:0005737	Gene ontology ID; MOD ontology ID; SO ontology ID	To retrieve all PRO terms with annotation GO:0005737
ontology term	cytoplasm	Gene ontology name; MOD ontology name; SO ontology	To retrieve all PRO terms with annotation cytoplasm
PANTHER ID	PTHR23255:SF8	Any PANTHER DB ID	
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to PANTHER, respectively. In this example it will retrieve all PRO terms with PANTHER cross-reference.
parent	PR:000000133	Any Protein Ontology ID	Will retrieve the terms for which the indicated PRO ID is a parent, in this example: PR:000000380 and PR:000025441
PIRSF ID	PIRSF037391	Any PIRSF ID	In this case it will retrieve PR:000000006
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to PIRSF, respectively. In this example it will retrieve all PRO terms with PIRSF cross-reference.
PMID	10197981	Any Pubmed ID	In this case it will retrieve all PRO terms that contain that PMID: PR:000000653 and PR:000000660
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to PubMed, respectively. In this example it will retrieve all PRO terms with PubMed cross-reference.
Cleaved product	not null	null; not null	To retrieve all PRO terms that are not or are cleaved products, respectively. In this example, it will retrieve all PRO terms that are cleaved products.
Reactome ID	REACT_12286	Any Reactome ID for proteins	In this case it will retrieve PR:000000148
	not null	null; not null	To retrieve all PRO terms that do not or do contain a cross-reference to Reactome, respectively. In this example it will retrieve all PRO terms with Reactome cross-reference.
			Relation to the corresponding annotation. It

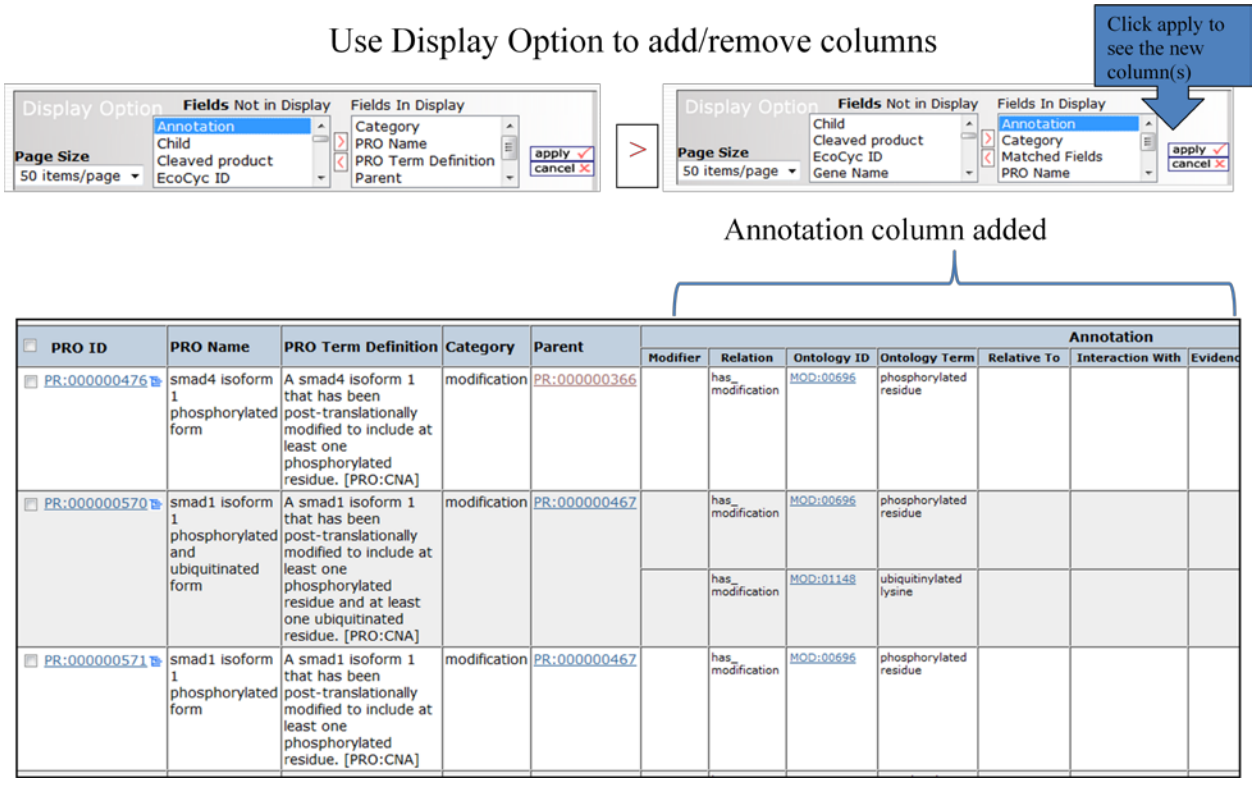
Result Table

The result table contains six default columns that can be changed by using the Display Options (1) functionality



PRO ID	PRO Name	PRO Term Definition	Category	Parent	Matched Fields
PR:000000476	smad4 isoform 1 phosphorylated form	A smad4 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue. [PRO:CNA]	modification	PR:000000366	PRO Name=>smad4; Category=>modification
PR:000000570	smad1 isoform 1 phosphorylated and ubiquitinated form	A smad1 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue and at least one ubiquitinated residue. [PRO:CNA]	modification	PR:000000467	PRO Name=>smad1; Category=>modification
PR:000000571	smad1 isoform 1 phosphorylated form	A smad1 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue. [PRO:CNA]	modification	PR:000000467	PRO Name=>smad1; Category=>modification
PR:000000572	smad2 isoform 1 acetylated and phosphorylated form	A smad2 isoform 1 that has been post-translationally modified to include at least one acetylated residue and at least one phosphorylated residue. [PRO:CNA]	modification	PR:000000468	PRO Name=>smad2; Category=>modification

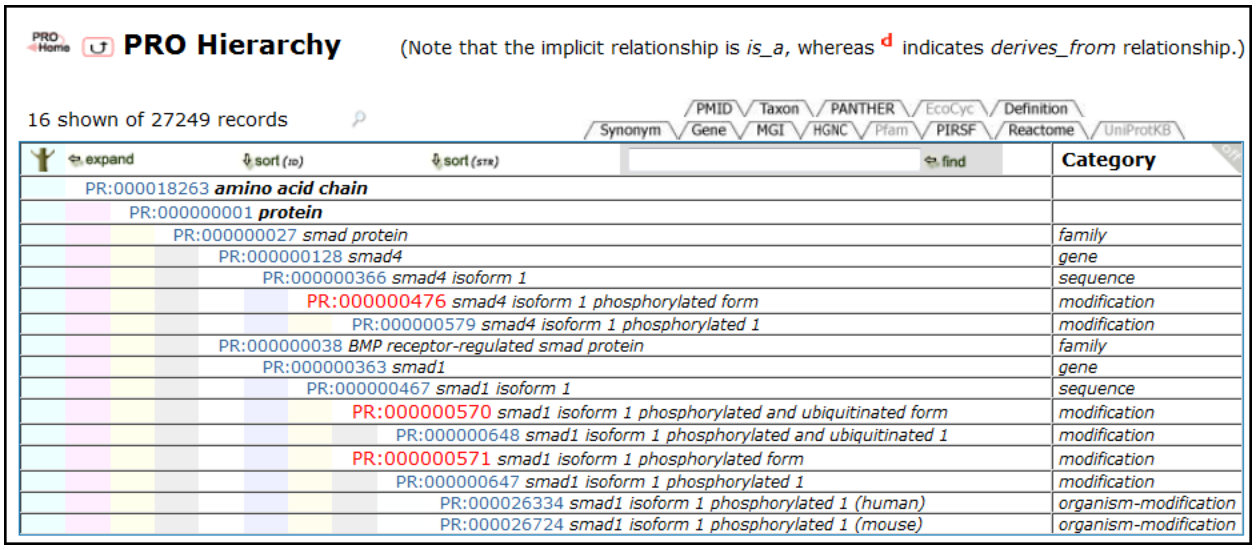
1-Display Options:



PRO ID	PRO Name	PRO Term Definition	Category	Parent	Annotation						
					Modifier	Relation	Ontology ID	Ontology Term	Relative To	Interaction With	Evidenc
PR:000000476	smad4 isoform 1 phosphorylated form	A smad4 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue. [PRO:CNA]	modification	PR:000000366		has_ modification	MOD:00696	phosphorylated residue			
PR:000000570	smad1 isoform 1 phosphorylated and ubiquitinated form	A smad1 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue and at least one ubiquitinated residue. [PRO:CNA]	modification	PR:000000467		has_ modification	MOD:00696	phosphorylated residue			
						has_ modification	MOD:01148	ubiquitinylated lysine			
PR:000000571	smad1 isoform 1 phosphorylated form	A smad1 isoform 1 that has been post-translationally modified to include at least one phosphorylated residue. [PRO:CNA]	modification	PR:000000467		has_ modification	MOD:00696	phosphorylated residue			

2-Link to PRO entry: the PRO ID is hyperlinked to the corresponding PRO entry report.

3-Hierarchy: Select terms for the corresponding hierarchy to be displayed in browser. The figure below shows the hierarchy for the three PRO terms shown in the result table. These are highlighted in red.



4- Show OBO/PAF

Show Selected option: Retrieve individual stanzas (selecting OBO) or annotation (selecting PAF) for selected PRO terms (via checkboxes) in OBO and PAF format, respectively.

Show Related option: Retrieve stanzas (selecting OBO) or annotation (selecting PAF) for the selected PRO terms and their related terms which include the parent of the term (up to amino acid chain or protein complex), and PRO and GO terms that are referenced in the selected obo stanza. OBO shows the stanza in this format, whereas PAF shows the corresponding annotation.

5-Save as Table: Save result table in tab delimited format.