**Key Resources Table Template and Guidelines**

**Introduction:**

The Key Resources Table is designed to highlight the reagents and resources used in a specific study [to promote rigour and transparency in research](https://elifesciences.org/inside-elife/b8755582/for-authors-elife-promotes-rigour-and-transparency-with-key-resources-tables). Please include the genetically modified organisms and strains, cell lines, reagents, and software that are essential to reproduce the results presented.

1. Please include a completed Key Resources Table with your submission. If the table is under 5 pages long, please include it at the start of the Materials and Methods section within your article file (this table does not need to be numbered). If the table is > 5 pages long (or >100 rows), please include it as an Appendix, either at the end of the end f the main article file or as a second Article File, rather than at the beginning of the Materials and Methods section.
2. The Key Resources Table does not need to be an exhaustive list of all the materials and resources used (e.g., essential chemicals and standard culture media do not need to be included).
3. For consistency, please do not add subheadings to the table.
4. Datasets should be entered within the datasets section of the submission form, rather than the Key Resources Table.
5. Please ensure that the items listed in the table are reported in the Materials and Methods section within the context of their use.
6. Any references in the Source column should also be included in the list of references.
7. We suggest that no more than ten primers and RNA sequences are included in this table, but more extensive lists can instead be included as an Appendix.

**Reagent and resource categories**

* **Gene** (indicate species) - not strictly a reagent, but unambiguous identification critical for genetic research and genetic databases.
* **Strain, strain background** (indicate species) - applies to whole organism; includes bacterial and virus strains or isolates. Indicate sex, if applicable.
* **Genetic reagent** (indicate species) - applies to mutations and variants in whole organism, including transgenically introduced constructs. For transgenic lines, indicate host species. Indicate sex, if applicable.
* **Cell line** (indicate species) - if a primary cell line, describe in Additional Information. Indicate sex, if applicable.
* **Transfected construct** (indicate species) - in cell line. Generally, indicate species of cell line; use species of construct component if that is more relevant and explain in Additional Information.
* **Biological sample** (indicate species) - any other biological entity, ranging from isolated tissue to defined population; describe in Additional Information. Indicate sex, if applicable.
* **Antibody** - include host organism common name and clonality (e.g., “mouse monoclonal”); include dilution used in Additional Information (within parentheses to avoid auto-formatting problems).
* **Recombinant DNA reagent** - traditional cultured clones, plasmids, cDNAs, etc., including recombinant DNA libraries.
* **Sequence-based reagent** - oligonucleotides, primers, morpholinos, etc.; indicate sequence.
* **Peptide, recombinant protein** - generally, commercially available reagents.
* **Chemical compound, drug** - generally, commercially available reagents.
* **Commercial assay, kit** - detection assays; labeling and sample preparation kits.
* **Software, algorithm** - newly created or previously existing.
* **Other** - miscellaneous other categories, including histological stains.

**Example:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key Resources Table** | | | | |
| **Reagent type (species) or resource** | **Designation** | **Source or reference** | **Identifiers** | **Additional information** |
| gene (*Arabidopsis Thaliana*) | *NBR1* |  | AT4G24690 |  |
| gene (*Arabidopsis Thaliana*) | *ATG7* |  | AT5G45900 |  |
| gene (*Arabidopsis Thaliana*) | *SP1* |  | AT1G63900 |  |
| gene (*Arabidopsis Thaliana*) | *PUB4* |  | AT2G23140 |  |
| gene (*Arabidopsis Thaliana*) | *TOC132* |  | AT2G16640 |  |
| gene (*Arabidopsis Thaliana*) | *TIC40* |  | AT5G16620 |  |
| strain, strain background (*Arabidopsis Thaliana*) | Col-0 |  |  |  |
| strain, strain background (*Agrobacterium tumefaciens*) | GV3101 |  |  |  |
| genetic reagent (*Arabidopsis Thaliana*) | *atg7-2* | PMID : 20136727 | AT5G45900 | GABI\_655B06 |
| genetic reagent (*Arabidopsis Thaliana*) | *nbr1-1* | PMID : 23341779 | AT4G24690 | SALK\_135513 |
| genetic reagent (*Arabidopsis Thaliana*) | *nbr1-2* | PMID : 23341779 | AT4G24690 | GABI\_246H08 |
| genetic reagent (*Arabidopsis Thaliana*) | *toc132-2* | PMID : 15273297 | AT2G16640 | SAIL\_667\_04 |
| genetic reagent (*Arabidopsis Thaliana*) | *tic40-4* | PMID : 15659100 | AT5G16620 | SAIL\_192\_C10 |
| genetic reagent (*Arabidopsis Thaliana*) | *sp1-2* | PMID : 23118188 | AT1G63900 | SALK\_063571 |
| genetic reagent (*Arabidopsis Thaliana*) | *pub4-2* | PMID : 26494759 | AT2G23140 | SALK\_054373 |
| genetic reagent (*Arabidopsis Thaliana*) | *Pro35S:mCherry-NBR1* | PMID : 21606687 | AT4G24690 |  |
| genetic reagent (*Arabidopsis Thaliana*) | *ProUBQ10:mCherry-NBR1* | PMID : 31494674 | AT4G24690 |  |
| genetic reagent (*Arabidopsis Thaliana*) | *ProNBR1:NBR1-GFP* | PMID : 28223514, 32967551 | AT4G24690 |  |
| genetic reagent (*Arabidopsis Thaliana*) | *Pro35S:RECA-GFP* | PMID : 9197266, 25649438 |  |  |
| genetic reagent (*Arabidopsis Thaliana*) | *ProUBQ10:YFP-NBR1* | This study | AT4G24690 | See Methods and Materials Section 1 |
| genetic reagent (*Arabidopsis Thaliana*) | *ProUBQ10:YFP-NBR1mPB* | This study | AT4G24690 | See Methods and Materials Section 1 |
| genetic reagent (*Arabidopsis Thaliana*) | *ProUBQ10:YFP-mAIM* | This study | AT4G24690 | See Methods and Materials Section 1 |
| genetic reagent (*Arabidopsis Thaliana*) | *ProUBQ10:YFP-NBR1*ΔUBA2 | This study | AT4G24690 | See Methods and Materials Section 1 |
| antibody | anti-NBR1 (Rabbit polyclonal) | PMID : 31494674 |  | EM IL (1:10)  WB (1:1000) |
| antibody | anti-TIC40 (Rabbit polyclonal) | Agrisera | Cat#: AS10709 | WB (1:2000) |
| antibody | anti-PsbA/D1 (Rabbit polyclonal) | Agrisera | Cat#: AS05084 | WB (1:10000) |
| antibody | anti-LHCIIb (Rabbit polyclonal) | Agrisera | Cat#: AS01004 | WB (1:5000) |
| recombinant DNA reagent | *ProUBQ10:YFP-NBR* | This study | AT4G24690 | See Methods and Materials Section 1 |
| recombinant DNA reagent | *ProUBQ10:YFP-NBR1mPB* | This study | AT4G24690 | See Methods and Materials Section 1 |
| Software, algorithm | CLC main work bench 7 | Qiagen |  | Cloning |
| Software, algorithm | Zen Software | Carl Zeiss |  | Microscopy |
| Software, algorithm | Image J (Fiji) | NIH |  | Image Quantification |

**Template:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key Resources Table** | | | | |
| **Reagent type (species) or resource** | **Designation** | **Source or reference** | **Identifiers** | **Additional information** |
| gene (include species here) |  |  |  |  |
| strain, strain background (include species and sex here) |  |  |  |  |
| genetic reagent (include species here) |  |  |  |  |
| cell line (include species here) |  |  |  |  |
| transfected construct (include species here) |  |  |  |  |
| biological sample (include species here) |  |  |  |  |
| antibody | (Include host species and clonality) |  |  | (include dilution) |
| recombinant DNA reagent |  |  |  |  |
| sequence-based reagent |  |  |  |  |
| peptide, recombinant protein |  |  |  |  |
| commercial assay or kit |  |  |  |  |
| chemical compound, drug |  |  |  |  |
| software, algorithm |  |  |  |  |
| other |  |  |  |  |

**Guidelines for creation of the Key Resources Table**

Some of the constraints below are imposed to allow automated parsing of the table.

Columns (general):

1.     Column order and headings must be preserved.

2.     All five columns should be included, even if not used.

3.     Columns can be appended for internal use.

Rows (general):

1.     Resource categories (preceding the parentheses) must be preserved.

2.     Column headings should not be removed.

3.     The order of the rows can be changed.

4.     Clustering of multiple reagents of one type is recommended but not mandatory.

5.     Any blank rows or unused reagent types can be removed.

6.     If none of the reagent types are appropriate, please use “other”, rather than creating categories.

Column 1: “**Reagent type (species) or resource**” (mandatory)

1.     On every row, include the appropriate Resource category from the template. See descriptions of categories in “Reagent categories” section below.

2.     If indicated by in the Resource/Reagent category, include the species within parentheses. Use full genus and full species for first mention; thereafter, initial for genus may be used.

3.     If appropriate, indicate sex after species (within the parentheses); separate by comma, space.

Column 2: “**Designation**” (mandatory)

Symbol/name used in publication. Separate multiple entries with semi-colon, space. (If semi-colon within designation, delimit with double quotes.)

1.     This is a free-text field; there are no formatting constraints, except for separation of multiple entries by semi-colon, space.

2.     Should indicate exactly how the reagent is referred to in the publication.  If several designations are used for one reagent, this can include more than one entry, separated by semi-colon, space. If one designation has been used to refer to several different reagents, list each reagent separately and include a unique identifier or description parenthetically.

3.     If there is a semi-colon within the designation used, add double quotes around the entire phrase.

4.     Additional defining information can be included parenthetically (if brief).

Column 3: “**Source or reference**” (mandatory)

For a public source, include Stock center, company, or data repository. For Reference, include PMID or DOI; use “this paper” if new. If neither applies enter “other” and explain in Additional Information.

1.     If reagent obtained from a public source, such as a stock center or company, list resource name.

2.     If not obtained from public source, but a published description is available, list the DOI or PMID for the publication.

3.     If reagent newly created in the publication, enter “this paper” and provide further details in the Additional Information column.

4.     If none of the above, enter “other” and explain in Additional Information (Column 5).

5.     If it is appropriate to indicate both a publication and a lab or researcher that provided the reagent, list the publication in this field and the lab or researcher in Additional Information.

Column 4: “**Identifiers**” (not mandatory; use if possible)

Format as ID\_source:identifier. Include catalog numbers, stock numbers, database IDs or accession numbers, RRIDs.

1.     Use the format “ID\_source:identifier” with a colon and no spaces. Separate multiple entries with a semi-colon, space.

2.     If possible, use the recommended abbreviation for the ID\_source (see below).

3.     Multiple identifiers, even if redundant, are useful for validation. In some case a more general identifier (for a stock, for instance) can be combined with a more precise identifier (for the allele of interest in that stock).

4.     Inclusion of database identifiers is strongly encouraged to facilitate accurate incorporation of published data into appropriate biological databases.

Column 5: “**Additional information**”

1.     Mandatory if column C entry is “this paper” or “other”. Include a description of the new reagent or laboratory from which the reagent can be obtained. This can be a reference to where in the paper this information can be found (e.g. “See Materials and Methods, Section 2”) (Free text)

2.     For antibodies, indicate the dilution or mass used (in parentheses, to avoid auto-formatting problems) and conditions.

3.     Include other pertinent information, including pointers to supplementary information or Methods section, if appropriate.  (Free text)

Additional columns can be added for internal purposes (and removed prior to submission for publication): tracking acquisition by the lab, lab-specific stock numbers, storage location in the lab, comments about problems or QC, etc.