**S7. Examples of experiments selected by the algorithm**

The experiment selection algorithm is aimed for selecting experiments that are functionally relevant to a functional category of interest. Interestingly, we see that the majority of experiments in the selected set have a biological background that is in agreement with literature knowledge. In this section, we present examples of experiment selection for Yeast and Arabidopsis GO Biological Process categories.

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| **Yeast** |
| **S No** | **GO identifier** | **Description** | **Experiment name** |
| 1 | 12501 | programmed cell death  | Chitin treatment |
| Haploinsufficiency experiment |
| Antibiotic treatment |
| 2 | 6031 | chitin biosynthetic process | Antibiotic treatment |
| Aging |
| Xylose in aerobic and anaerobic treatment |
| Antibiotic treatment 2 |
| 3 | 6099 | tricarboxylic acid cycle | Sporulation experiment |
| Metabolic cycle experiment |
| Chemostatic limitation |
| Aging |
| Antibiotic treatment |
| Post drying time series |
| Nitrogen limitation |
| Histone mutant |

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| **Arabidopsis thaliana** |
| **S No** | **GO identifier** | **Description** | **Experiment name** |
| 1 | 302 | response to reactive oxygen species  | Heat stress (root) |
| Cold stress (root) |
| Genotoxic stress (root) |
| Wounding (root) |
| UV-B stress (root) |
| 2 | 9860 | Pollen Tube Growth | Control, no treatment (shoot) |
| Developmental series |
| Cytokinin treatment |
| Salt stress (root) |
| ABA treatment seed imbibition |
| IAA treatment (seedlings) |
| Phytophtora infestans treatment |
| Oxidative stress (shoot) |
| ABA treatment (seedlings) |
| Pseudomonas syringae treatment |
| Zeatin treatment (seedlings) |
| Wounding stress (shoot) |
| 3 | 9867 | jasmonic acid mediated signaling pathway  | Psuedomonas syringae treatment |
| Heat stress (shoot) |
| Gibberelic acid treatment (seedlings) |
| PNO8 treatment (seedlings) |
| IAA treatment (seedlings) |
| Ethylene treatment (seedlings) |
| ACC treatment (seedlings) |
| Auxin treatment (seedlings) |
| 4 | 9834 | secondary cell wall biogenesis  | Developmental series |
| ABA treatments (seedlings) |
| Heat stress (root) |
| Gibberellic acid treatment (seedlings) |
| ABA treatment seed imbibition |
| Brassinosteroid treatment (seedlings) |
| Cytokinin treatment |
| Botrytis cinerea treatment |
| Drought (shoot) |
| Osmotic stress (root) |
| Bacterial elicitor treatment |