

# Using AOP-Wiki to support the ecotoxicological risk assessment of nanomaterials: first steps in the development of novel Adverse Outcome Pathways

## *Supplementary Information*

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### **Keywords**

Adverse Outcome Pathway (AOP), AOPWiki, ecotoxicity, nanomaterials, nanosafety, risk assessment, Integrated approaches to assessment and testing (IATA), Next Generation Risk Assessment (NGRA)

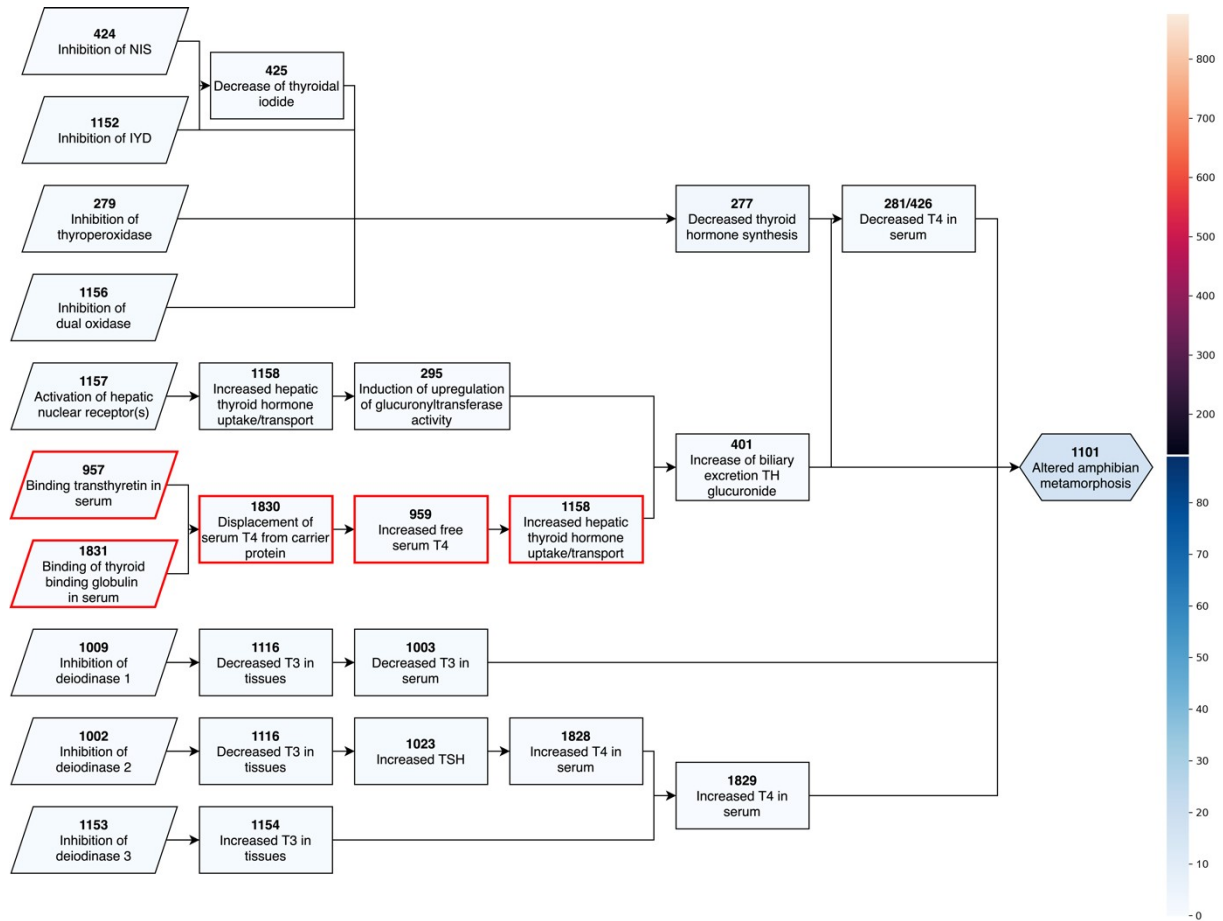


Figure S1. Data availability map of adverse outcome network (AON) leading to common adverse outcome (AO) with ID 1101 (altered amphibian metamorphosis). This AON was created from individual AOPs with IDs: 176, 188, 192, 175, 193, 194, 366, 367, 189, 190, 191. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-16 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.

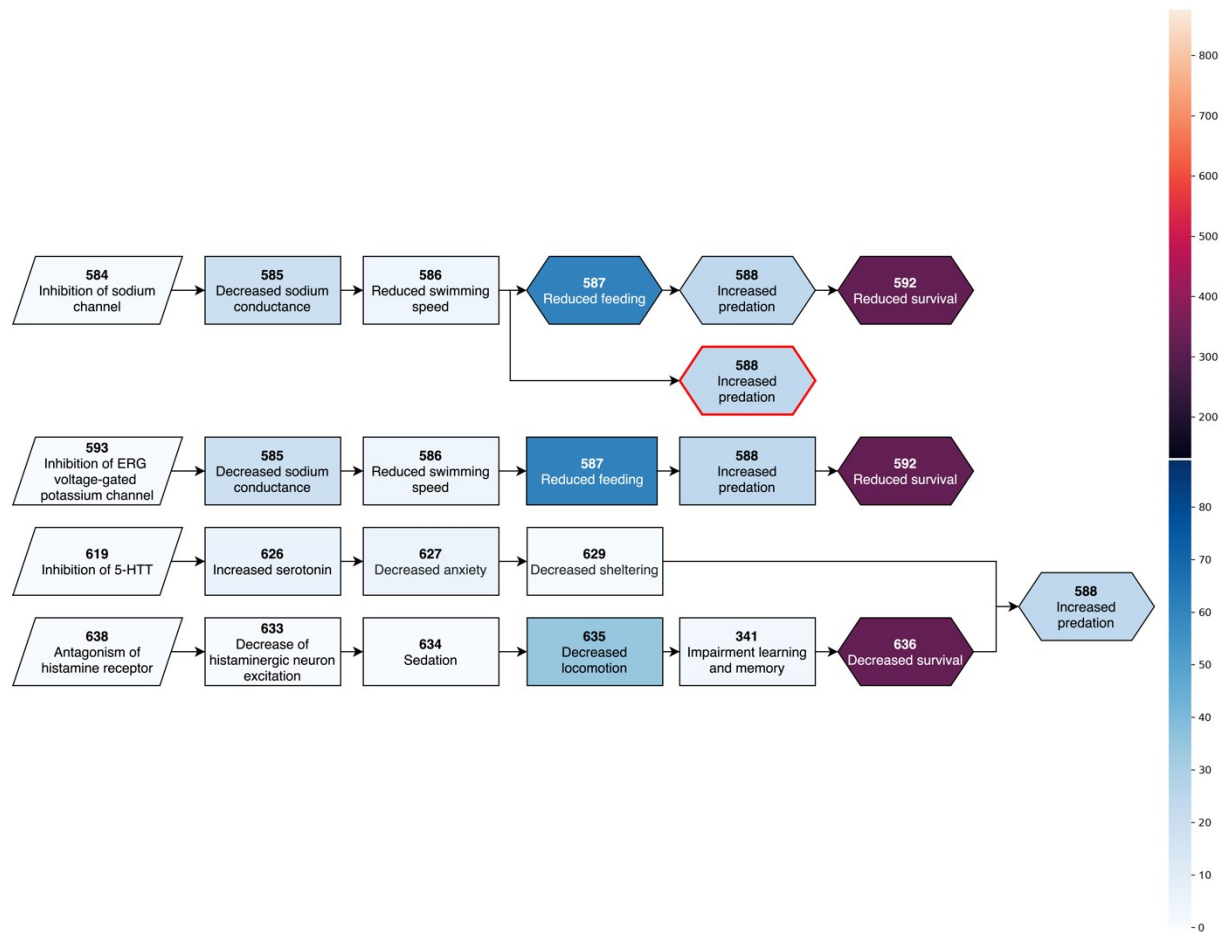


Figure S2. Data availability map of AON leading to common AO with ID 588 (increased predation). This AON was created from individual AOPs with IDs: 91, 93, 95, 98, 99. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-326 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.

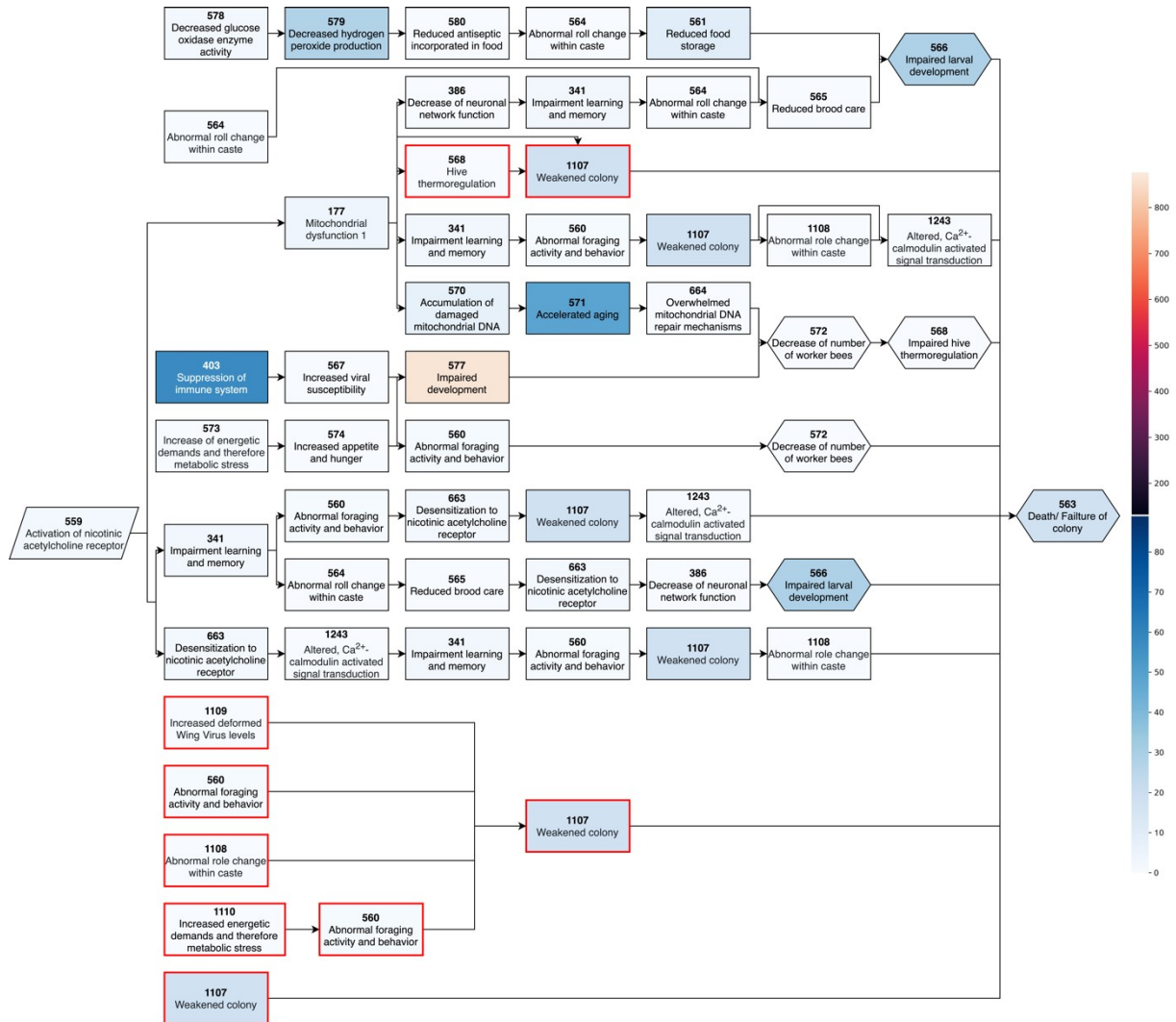


Figure S3. Data availability map of AON leading to common AO with ID 563 (death or failure of colony). This AON was created from individual AOPs with IDs: 86, 82, 78, 178, 79, 87, 77, 80, 84, 85, 81, 88, 90, 89, 179, 180/182, 183, 184, 185/181. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-876 in this case. The numbers and names in the boxes correspond to the terms in the AOP-wiki.

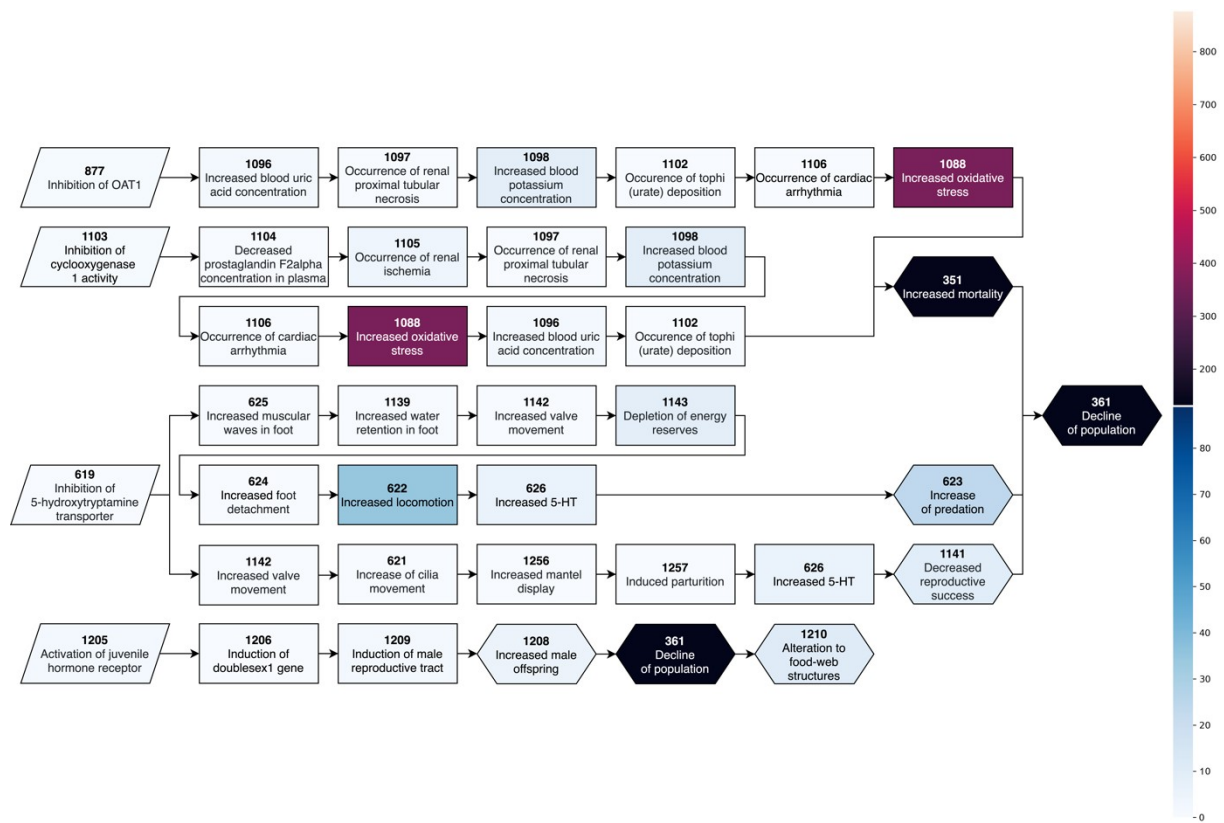


Figure S4. Data availability map of AON leading to common AO with ID 361 (Population decline). This AON was created from individual AOPs with IDs: 138, 177, 97, 203, 201. Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-362 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.

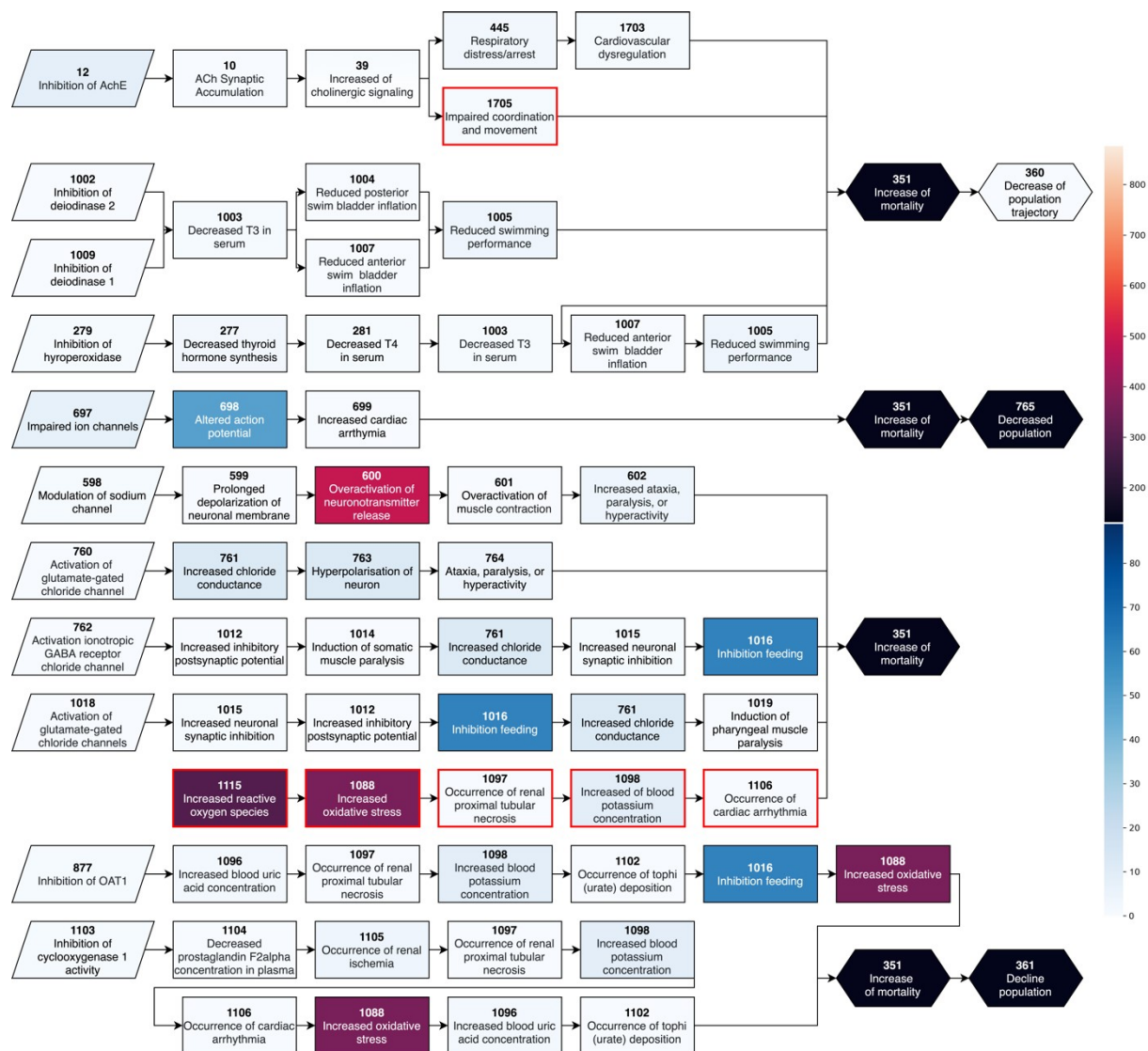


Figure S5. Data availability map of AON leading to common AO with ID 351 (increase of mortality leading to population decline). This AON was created from individual AOPs with IDs: 16, 312, 155, 156, 157, 158, 159, 363, 96, 104, 113, 160, 161, 186, 138, 177. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-494 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.

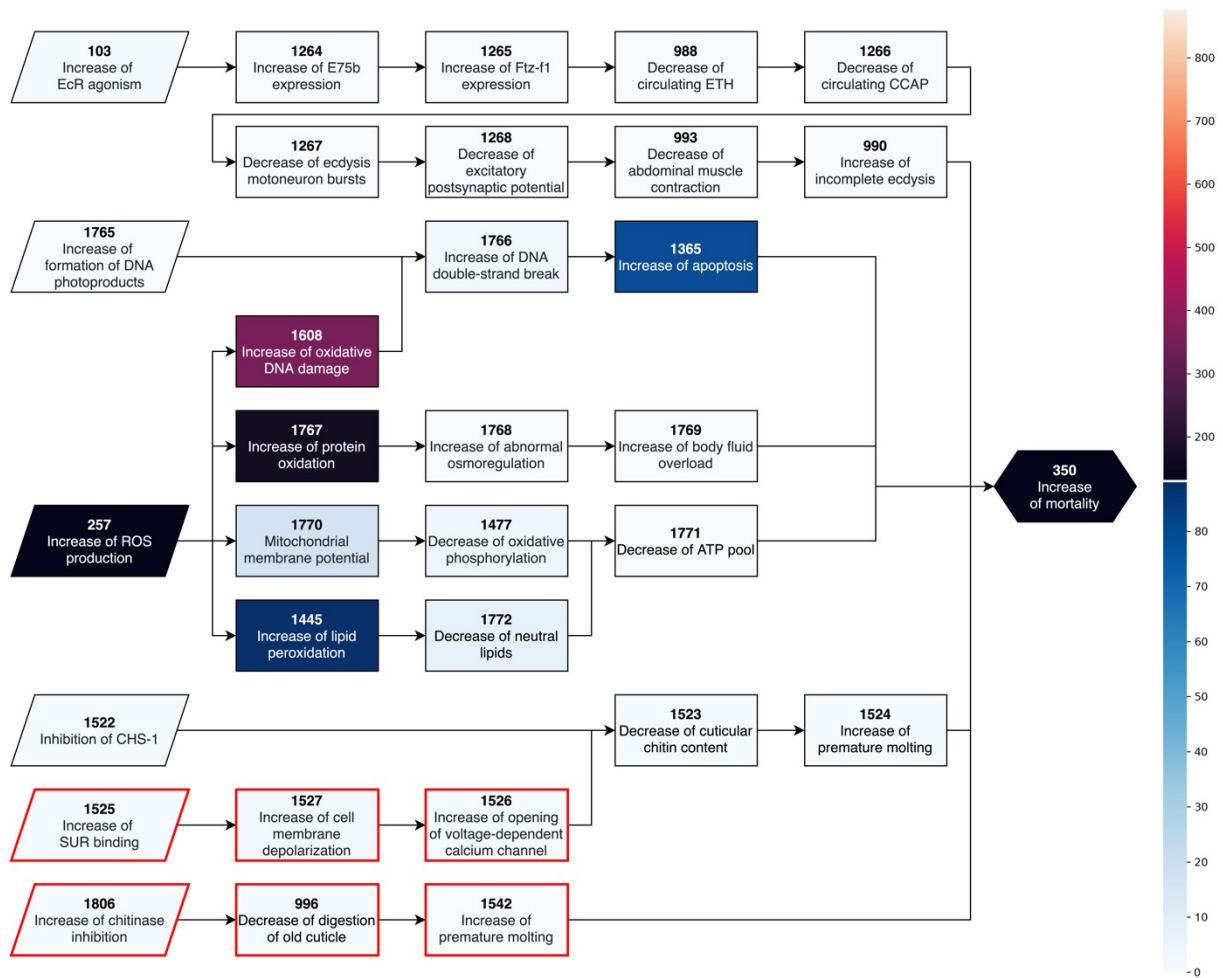


Figure S6. Data availability map of AON leading to common AO with ID 350 (increase of mortality). This AON was created from individual AOPs with IDs: 4, 331, 330, 327, 328, 329, 342/360, 343/361, 358. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-364 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.

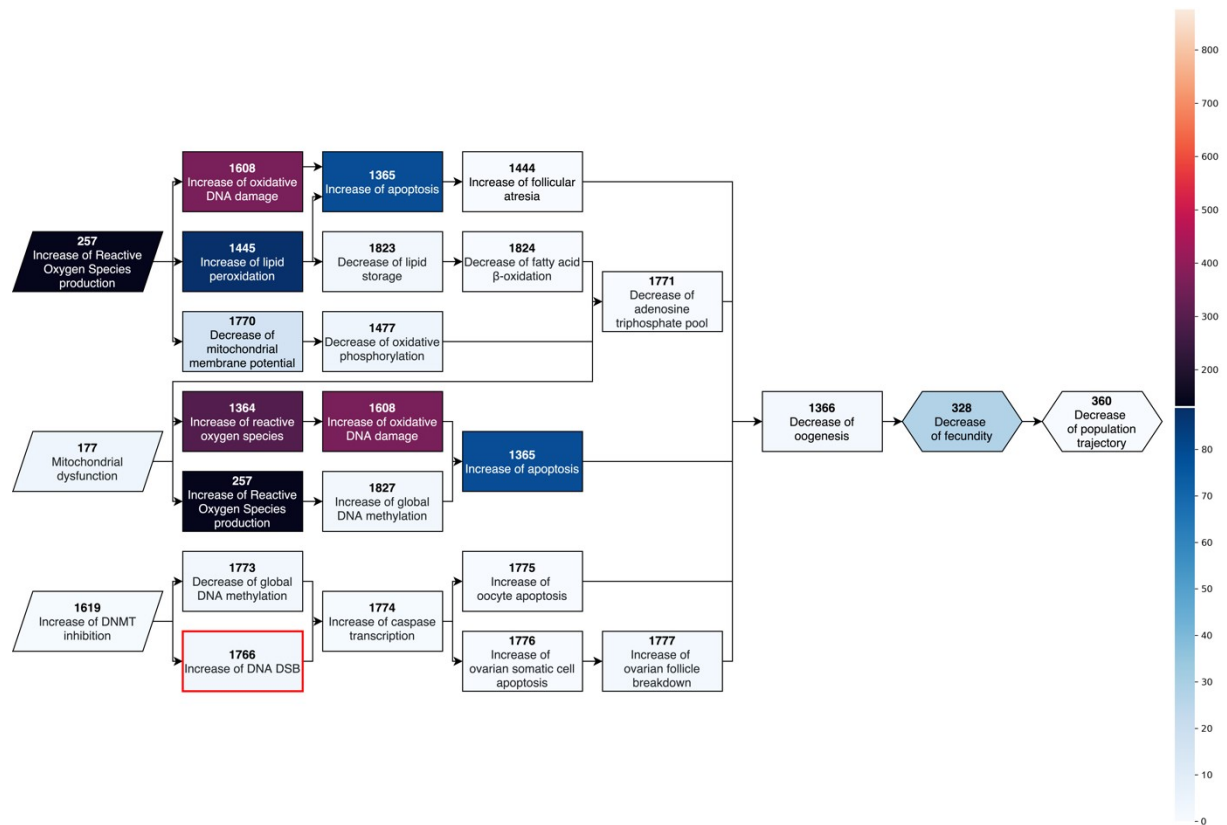


Figure S7. Data availability map of AON leading to common AO with ID 328 (decrease of fecundity). This AON was created from individual AOPs with IDs: 216, 238, 299, 311, 324, 325, 326, 336, 337, 338, 339. (AOPs without defined taxonomic applicability are indicated in red and the events they are composed of have a red frame in the figure). Note that MIEs are indicated as cuboids and AOs hexagons, while the remaining key events are marked with rectangles. The color coding indicates the number of publications reporting a specific KE, ranging in this case from 0-364 in this case (i.e., all publications reported the AO). The numbers and names in the boxes correspond to the terms in the AOP-wiki.