SUPPLEMENTARY TABLE S3. PERCENT MORPHOLOGICAL ABNORMALITIES PER COMPOUND CONCENTRATIONS USED IN ZEBRAFISH LARVAE ASSAY

| | | | | *Percent morphological abnormalities ± SEM* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Compounds* | *Concentrations* | *Survivors obtained at day 5* (N) | *Pericardial oedema* | *Yolk sac oedema* | *Dispersed pigment cells* | *Bent tail* | *Curved body axis* | *Meckel's cartilage hypoplasia* | *Branchial arch hypoplasia* | *Uninflated swim bladder* |
| 1 | Aconitine | 0 | 47 | 0.0 ± 0 | 8.5 ± 2 | 17.0 ± 4 | 4.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 21.1 ± 4 |
| | | 50 | 28 | 10.7 ± 2 | 7.1 ± 2 | 17.9 ± 3 | 0.0 ± 0 | 7.1 ± 2 | 3.6 ± 1 | 0.0 ± 0 | 35.7 ± 9 |
| 2 | Atropine | 0 | 44 | 2.3 ± 1 | 4.5 ± 1 | 4.5 ± 1 | 2.3 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 31.8 ± 3 |
| | | 100 | 47 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 19.2 ± 2 |
| | | 200 | 45 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 37.8 ± 2 |
| | | 400 | 42 | 2.4 ± 1 | 2.4 ± 1 | 2.4 ± 1 | 0.0 ± 0 | 2.4 ± 1 | 2.4 ± 1 | 0.0 ± 0 | 40.5 ± 1 |
| | | 800 | 8 | 100.0 ± 0[a] | 62.5 ± 19[a] | 87.5 ± 6[a] | 0.0 ± 0 | 37.5 ± 19[a] | 75.0 ± 13[a] | 0.0 ± 0 | 100.0 ± 0[a] |
| 3 | Berberine chloride | 0 | 45 | 4.4 ± 1 | 20.0 ± 4 | 28.9 ± 7 | 0.0 ± 0 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.2 ± 1 |
| | | 50 | 44 | 2.3 ± 1 | 31.8 ± 6 | 27.3 ± 7 | 0.0 ± 0 | 2.3 ± 1 | 2.3 ± 1 | 0.0 ± 0 | 22.7 ± 4[b] |
| | | 100 | 43 | 14.0 ± 3 | 51.2 ± 3[c] | 34.9 ± 8 | 0.0 ± 0 | 4.7 ± 1 | 2.3 ± 1 | 2.2 ± 1 | 37.2 ± 4[ah] |
| | | 200 | 16 | 43.8 ± 0[a] | 81.3 ± 1[a] | 56.3 ± 5 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 68.8 ± 5[a] |
| 4 | Colchicine | 0 | 39 | 0.0 ± 0 | 0.0 ± 0 | 5.1 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 38.5 ± 9 |
| | | 10 | 39 | 0.0 ± 0 | 5.1 ± 1 | 5.1 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 33.3 ± 7 |
| | | 20 | 47 | 0.0 ± 0 | 4.3 ± 1 | 14.9 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 40.4 ± 5 |
| | | 40 | 25 | 8.0 ± 2[b] | 36.0 ± 3[a] | 84.0 ± 3[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 36.0 ± 10 |
| 5 | Coniine | 0 | 45 | 0.0 ± 0 | 0.0 ± 0 | 3.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 22.6 ± 1 |
| | | 10 | 31 | 0.0 ± 0 | 3.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 9.7 ± 2 |
| | | 20 | 32 | 0.0 ± 0 | 6.3 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 21.9 ± 5 |
| | | 40 | 28 | 0.0 ± 0 | 25.0 ± 1[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 10.7 ± 1 |
| 6 | α-Lobeline hydrochloride | 0 | 31 | 3.2 ± 1 | 3.2 ± 1 | 6.5 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 35.5 ± 8 |
| | | 10 | 30 | 16.7 ± 4 | 0.0 ± 0 | 10.0 ± 1 | 0.0 ± 0 | 6.7 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 20.0 ± 6 |
| | | 20 | 28 | 71.4 ± 2[a] | 0.0 ± 0 | 53.6 ± 3[a] | 0.0 ± 0 | 28.6 ± 6[a] | 3.6 ± 1 | 0.0 ± 0 | 57.1 ± 10 |
| | | 40 | 5 | 100.0 ± 0[a] | 60.0 ± 0[a] | 100.0 ± 0[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 40.0 ± 0 |
| 7 | Morphine hydrochloride | 0 | 45 | 0.0 ± 0 | 25.0 ± 0 | 16.7 ± 0 | 0.0 ± 0 | 8.3 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 1000 | 45 | 0.0 ± 0 | 53.3 ± 0 | 40.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 2000 | 41 | 0.0 ± 0 | 54.5 ± 0 | 18.2 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 4000 | 39 | 0.0 ± 0 | 86.7 ± 0[b] | 80.0 ± 0[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 8000 | 36 | 0.0 ± 0 | 90.0 ± 0[c] | 60.0 ± 0[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| 8 | Nicotine | 0 | 47 | 2.1 ± 1 | 10.6 ± 0 | 8.5 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 40.4 ± 3 |
| | | 10 | 26 | 7.7 ± 5 | 53.8 ± 10[a] | 38.5 ± 3[c] | 0.0 ± 0 | 11.8 ± 4[b] | 3.8 ± 2 | 0.0 ± 0 | 50.0 ± 9 |
| | | 20 | 16 | 12.5 ± 0 | 56.3 ± 0[a] | 81.3 ± 0[a] | 37.5 ± 0[a] | 93.8 ± 0[a] | 0.0 ± 0 | 0.0 ± 0 | 81.3 ± 0[c] |
| 9 | Quinine sulfate | 0 | 46 | 0.0 ± 0 | 13.0 ± 3 | 19.6 ± 5 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.3 ± 2 |
| | | 30 | 43 | 2.3 ± 1 | 9.3 ± 2 | 14.0 ± 4 | 2.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 18.6 ± 1 |
| | | 60 | 47 | 0.0 ± 0 | 2.1 ± 1 | 21.3 ± 4 | 10.6 ± 3 | 4.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 40.4 ± 0 |
| | | 120 | 44 | 2.3 ± 1 | 2.3 ± 1 | 6.8 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 20.5 ± 1 |
| | | 240 | 45 | 2.2 ± 1 | 2.2 ± 1 | 22.2 ± 5 | 4.4 ± 1 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 42.2 ± 3 |
| | | 480 | 36 | 5.6 ± 2 | 22.2 ± 6 | 61.1 ± 8[a] | 22.2 ± 6[c] | 8.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 63.9 ± 2[c] |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 10 | (−)-Scopolamine hydrobromide trihydrate | 0 | 47 | 2.3 ± 1 | 0.0 ± 0 | 9.3 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 9.3 ± 2 |
| | | 1000 | 47 | 6.4 ± 1 | 25.5 ± 3[b] | 17.0 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 2.1 ± 1 | 0.0 ± 0 | 23.4 ± 4 |
| | | 2000 | 44 | 2.3 ± 1 | 25.0 ± 5[b] | 18.2 ± 5 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 36.4 ± 3[b] |
| | | 4000 | 47 | 6.4 ± 1 | 34.0 ± 5[a] | 36.2 ± 5[b] | 0.0 ± 0 | 0.0 ± 0 | 2.1 ± 1 | 2.1 ± 1 | 38.3 ± 5[c] |
| | | 8000 | 39 | 15.4 ± 4 | 28.2 ± 4[c] | 41.0 ± 5[c] | 2.6 ± 1 | 5.1 ± 1 | 15.4 ± 4[b] | 0.0 ± 0 | 66.7 ± 4[a] |
| | | 16,000 | 6 | 66.7 ± 0[a] | 33.3 ± 0[a] | 100.0 ± 0[a] | 66.7 ± 0[a] | 0.0 ± 0 | 16.7 ± 0[b] | 0.0 ± 0 | 100.0 ± 0[a] |
| 11 | Strychnine hydrochloride | 0 | 45 | 0.0 ± 0 | 7.5 ± 1 | 2.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.5 ± 1 | 0.0 ± 0 | 5.0 ± 1 |
| | | 10 | 35 | 8.6 ± 0 | 62.9 ± 2[a] | 20.0 ± 4 | 0.0 ± 0 | 14.3 ± 3 | 0.0 ± 0 | 2.9 ± 1 | 25.7 ± 3 |
| | | 20 | 29 | 48.8 ± 4[a] | 93.1 ± 1[a] | 20.7 ± 7 | 0.0 ± 0 | 44.8 ± 6[a] | 6.9 ± 3 | 3.4 ± 2 | 20.7 ± 5 |
| | | 40 | 14 | 57.1 ± 5[a] | 92.9 ± 4[a] | 14.3 ± 8 | 0.0 ± 0 | 71.4 ± 3[a] | 14.3 ± 8 | 0.0 ± 0 | 42.9 ± 9[c] |
| 12 | Theobromine | 0 | 43 | 0.0 ± 0 | 2.6 ± 1 | 2.6 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 7.7 ± 1 |
| | | 30 | 43 | 7.0 ± 2 | 30.2 ± 5[c] | 20.9 ± 5 | 4.7 ± 1 | 7.0 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 7.0 ± 1 |
| | | 60 | 39 | 30.8 ± 7[a] | 48.7 ± 8[a] | 20.5 ± 5 | 0.0 ± 0 | 2.6 ± 1 | 2.6 ± 1 | 2.6 ± 1 | 26.6 ± 4 |
| | | 120 | 34 | 76.5 ± 1[a] | 76.5 ± 2[a] | 26.5 ± 4[b] | 0.0 ± 0 | 17.6 ± 2[c] | 5.9 ± 2 | 5.9 ± 2 | 52.9 ± 5[a] |
| | | 240 | 21 | 95.2 ± 1[a] | 90.5 ± 3[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 95.2 ± 2[a] |
| 13 | (+)-Tubocurarine chloride hydrate | 0 | 44 | 0.0 ± 0 | 7.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 15.0 ± 3 |
| | | 100 | 39 | 2.6 ± 1 | 2.6 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 12.8 ± 3 |
| | | 200 | 38 | 5.3 ± 1 | 7.9 ± 1 | 2.6 ± 1 | 0.0 ± 0 | 7.9 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 15.4 ± 4 |
| | | 400 | 30 | 0.0 ± 0 | 26.7 ± 8[b] | 6.7 ± 1 | 0.0 ± 0 | 3.3 ± 1 | 3.3 ± 1 | 3.3 ± 1 | 13.3 ± 1 |
| 14 | Yohimbine hydrochloride | 0 | 45 | 4.4 ± 1 | 11.1 ± 2 | 2.2 ± 1 | 4.4 ± 1 | 6.7 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 4.4 ± 1 |
| | | 10 | 40 | 2.5 ± 1 | 10.0 ± 1 | 17.5 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 12.5 ± 1 |
| | | 20 | 40 | 2.5 ± 1 | 25.0 ± 4 | 35.0 ± 5[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 15.0 ± 2 |
| | | 40 | 31 | 9.7 ± 2 | 48.4 ± 10[a] | 58.1 ± 10[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 80.6 ± 2[a] |
| | | 80 | 35 | 37.1 ± 4[a] | 65.7 ± 5[a] | 100.0 ± 0[a] | 8.6 ± 2 | 0.0 ± 0 | 2.9 ± 1 | 0.0 ± 0 | 97.1 ± 1[a] |
| 15 | Amygdalin | 0 | 45 | 0.0 ± 0 | 2.2 ± 1 | 6.7 ± 2 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 10 | 45 | 0.0 ± 0 | 8.9 ± 2 | 15.6 ± 4 | 0.0 ± 0 | 2.2 ± 1 | 2.2 ± 1 | 0.0 ± 0 | 4.4 ± 1 |
| | | 20 | 44 | 0.0 ± 0 | 20.5 ± 4 | 34.1 ± 8[c] | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 9.1 ± 1 |
| | | 40 | 36 | 5.6 ± 1 | 36.1 ± 6[a] | 36.1 ± 9[c] | 0.0 ± 0 | 5.6 ± 2 | 5.6 ± 2 | 0.0 ± 0 | 44.4 ± 8[a] |
| | | 80 | 36 | 5.6 ± 1 | 44.4 ± 7[a] | 16.6 ± 7 | 2.8 ± 1 | 5.6 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 13.9 ± 4 |
| | | 160 | 27 | 3.7 ± 1 | 70.4 ± 7[a] | 29.6 ± 9 | 3.7 ± 1 | 14.8 ± 4[b] | 3.7 ± 1 | 3.7 ± 1 | 51.9 ± 7[a] |
| 16 | Arbutin | 0 | 44 | 0.0 ± 0 | 9.1 ± 2 | 15.9 ± 5 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 2.3 ± 1 | 2.3 ± 1 |
| | | 10 | 42 | 2.4 ± 1 | 9.5 ± 2 | 46.6 ± 8[c] | 4.8 ± 1 | 4.8 ± 1 | 2.4 ± 1 | 0.0 ± 0 | 16.7 ± 4 |
| | | 20 | 29 | 3.4 ± 1 | 3.4 ± 1 | 6.9 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 6.9 ± 2 |
| | | 40 | 24 | 0.0 ± 0 | 0.0 ± 0 | 20.8 ± 7 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 8.3 ± 2 |
| | | 80 | 25 | 0.0 ± 0 | 0.0 ± 0 | 8.0 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 16.3 ± 2 |
| | | 160 | 14 | 0.0 ± 0 | 0.0 ± 0 | 35.5 ± 10 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 7.1 ± 5 |
| 17 | Convallatoxin | 0 | 44 | 9.8 ± 1 | 12.2 ± 2 | 17.1 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 0.0 ± 0 | 26.8 ± 6 |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 18 | Coumarin | 0 | 38 | 5.3 ± 1 | 18.4 ± 2 | 7.9 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 5.3 ± 2 | 0.0 ± 0 | 7.9 ± 1 |
| | | 70 | 36 | 2.8 ± 1 | 44.4 ± 4[b] | 27.8 ± 4 | 0.0 ± 0 | 2.8 ± 1 | 5.6 ± 2 | 0.0 ± 0 | 22.2 ± 4 |
| | | 140 | 31 | 29.0 ± 7[c] | 51.6 ± 9[b] | 32.3 ± 2[b] | 0.0 ± 0 | 22.6 ± 5[b] | 29.0 ± 4 | 3.2 ± 1 | 25.8 ± 3 |
| | | 280 | 8 | 25.0 ± 0 | 87.5 ± 0[a] | 100.0 ± 0[a] | 0.0 ± 0 | 87.5 ± [a] | 100.0 ± [a] | 37.5 ± 0[a] | 75.0 ± 0[a] |
| 19 | Digitoxin | 0 | 43 | 3.0 ± 1 | 12.1 ± 2 | 12.1 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 42.4 ± 3 |
| | | 0.5 | 9 | 22.2 ± 12 | 0.0 ± 0 | 66.7 ± 14[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 55.6 ± 8 |
| 20 | Gentamycin sulfate | 0 | 44 | 0.0 ± 0 | 11.1 ± 3 | 2.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 11.9 ± 3 |
| | | 100 | 33 | 0.0 ± 0 | 18.2 ± 5 | 12.1 ± 3 | 0.0 ± 0 | 3.0 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 21.2 ± 6 |
| | | 200 | 30 | 3.3 ± 1 | 26.7 ± 6 | 20.0 ± 0 | 0.0 ± 0 | 3.3 ± 1 | 3.3 ± 1 | 3.3 ± 1 | 30.0 ± 5 |
| | | 400 | 9 | 0.0 ± 0 | 0.0 ± 0 | 77.8 ± 9[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 77.8 ± 1[a] |
| 21 | Glycyrrhizin | 0 | 48 | 0.0 ± 0 | 27.1 ± 3 | 6.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 6.3 ± 2 |
| | | 10 | 45 | 0.0 ± 0 | 42.2 ± 2 | 28.9 ± 6[b] | 8.9 ± 2 | 4.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 22.2 ± 3 |
| | | 20 | 35 | 2.9 ± 1 | 57.1 ± 3[b] | 25.7 ± 4 | 0.0 ± 0 | 2.9 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 25.7 ± 4 |
| | | 40 | 28 | 7.1 ± 1 | 75.0 ± 4[a] | 17.9 ± 6 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 32.1 ± 6[b] |
| | | 80 | 9 | 33.3 ± 0[a] | 100.0 ± 0[a] | 44.4 ± 0[b] | 0.0 ± 0 | 0.0 ± 0 | 11.1 ± 0[b] | 11.1 ± [b] | 22.2 ± 0 |
| 22 | Hesperidin | 0 | 44 | 2.3 ± 1 | 36.4 ± 1 | 18.2 ± 4 | 4.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 22.7 ± 4 |
| | | 10 | 41 | 7.3 ± 1 | 65.9 ± 3[b] | 7.3 ± 2 | 2.4 ± 1 | 0.0 ± 0 | 4.9 ± 1 | 0.0 ± 0 | 22.0 ± 4 |
| | | 20 | 42 | 7.1 ± 2 | 69.0 ± 2[c] | 9.5 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 4.8 ± 2 | 0.0 ± 0 | 26.2 ± 3 |
| | | 40 | 25 | 8.0 ± 2 | 56.0 ± 8 | 8.0 ± 3 | 4.0 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.0 ± 4 |
| | | 80 | 23 | 13.0 ± 2 | 56.5 ± 4 | 43.5 ± 11[b] | 4.3 ± 1 | 0.0 ± 0 | 17.4 ± 3 | 0.0 ± 0 | 47.8 ± 5 |
| 23 | Kanamycin monosulfate | 0 | 43 | 0.0 ± 0 | 21.4 ± 3 | 4.8 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 |
| | | 250 | 37 | 2.7 ± 1 | 54.1 ± 3[c] | 13.5 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 13.5 ± 3 |
| | | 500 | 41 | 2.4 ± 1 | 53.7 ± 4[c] | 7.3 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 4.9 ± 1 | 24.4 ± 6[b] |
| | | 1000 | 38 | 2.6 ± 1 | 63.2 ± 4[a] | 26.3 ± 2[b] | 0.0 ± 0 | 2.6 ± 1 | 13.2 ± 1[b] | 5.3 ± 1 | 28.9 ± 4[b] |
| | | 2000 | 18 | 0.0 ± 0 | 77.8 ± 0[a] | 33.3 ± 0[b] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 33.3 ± 0[c] |
| 24 | Naringin | 0 | 46 | 0.0 ± 0 | 28.9 ± 0 | 18.4 ± 5 | 0.0 ± 0 | 2.6 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.6 ± 1 |
| | | 50 | 34 | 2.9 ± 1 | 38.2 ± 5 | 26.5 ± 7 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 5.9 ± 2 |
| | | 100 | 38 | 5.3 ± 2 | 31.6 ± 2 | 10.5 ± 2 | 0.0 ± 0 | 2.6 ± 1 | 5.3 ± 2 | 2.6 ± 1 | 10.5 ± 1 |
| | | 200 | 22 | 4.5 ± 1 | 31.8 ± 1 | 13.6 ± 1 | 0.0 ± 0 | 4.5 ± 1 | 13.6 ± 4 | 0.0 ± 0 | 13.6 ± 1 |
| | | 400 | 25 | 4.0 ± 1 | 52.0 ± 6 | 12.0 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 800 | 11 | 0.0 ± 0 | 54.5 ± 0 | 36.4 ± 0 | 9.1 ± 0[b] | 9.1 ± | 9.1 ± 0 | 9.1 ± 0 | 27.3 ± 0[b] |
| 25 | Neohesperidin | 0 | 44 | 7.3 ± 0 | 29.3 ± 5 | 7.3 ± 1 | 2.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 4.9 ± 1 |
| | | 10 | 47 | 4.3 ± 1 | 38.3 ± 5 | 12.8 ± 2 | 6.4 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.1 ± 1 |
| | | 20 | 41 | 2.4 ± 1 | 48.8 ± 5 | 17.1 ± 3 | 2.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 7.3 ± 1 |
| | | 40 | 45 | 15.6 ± 2 | 42.2 ± 6 | 37.8 ± 7[c] | 2.2 ± 1 | 17.8 ± 4[b] | 2.2 ± 1 | 2.2 ± 1 | 20.0 ± 4 |
| | | 80 | 36 | 11.1 ± 2 | 63.9 ± 4[c] | 33.3 ± 5[c] | 0.0 ± 0 | 2.8 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 27.8 ± 3[b] |
| | | 160 | 20 | 5.0 ± 2 | 20.0 ± 2 | 85.0 ± 4[a] | 0.0 ± 0 | 35.0 ± 11[a] | 0.0 ± 0 | 0.0 ± 0 | 50.0 ± 11[a] |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 26 | Ouabain octahydrate | 0 | 47 | 2.1 ± 1 | 27.7 ± 3 | 23.4 ± 4 | 2.1 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 17.0 ± 2 |
| | | 50 | 35 | 14.3 ± 1 | 25.7 ± 5 | 5.7 ± 1 | 0.0 ± 0 | 25.7 ± 7[c] | 2.9 ± 1 | 5.7 ± 1 | 31.4 ± 4 |
| | | 100 | 45 | 4.4 ± 1 | 31.1 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 8.9 ± 2 | 0.0 ± 0 | 2.2 ± 1 | 13.3 ± 2 |
| | | 200 | 11 | 0.0 ± 0 | 45.5 ± 15 | 9.1 ± 3 | 0.0 ± 0 | 36.4 ± 21[c] | 0.0 ± 0 | 9.1 ± 5 | 54.5 ± 7[b] |
| 27 | Phloridzin dihydrate | 0 | 42 | 0.0 ± 0 | 25.0 ± 2 | 5.0 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 20.0 ± 4 |
| | | 70 | 45 | 4.4 ± 1 | 26.7 ± 2 | 4.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.9 ± 4 |
| | | 140 | 47 | 6.4 ± 2 | 34.0 ± 3 | 17.0 ± 2 | 0.0 ± 0 | 2.1 ± 1 | 2.1 ± 1 | 2.1 ± 1 | 42.6 ± 4 |
| | | 280 | 44 | 4.5 ± 1 | 22.7 ± 2 | 38.6 ± 6[c] | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 43.2 ± 2 |
| | | 560 | 41 | 17.1 ± 1[c] | 43.9 ± 3 | 34.1 ± 5[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 34.1 ± 5 |
| | | 1120 | 10 | 0.0 ± 0 | 80.0 ± 0[c] | 90.0 ± 0[a] | 20.0 ± [a] | 0.0 ± 0 | 50.0 ± 0[a] | 50.0 ± [a] | 70.0 ± 0[b] |
| 28 | Rutin hydrate | 0 | 43 | 0.0 ± 0 | 12.5 ± 2 | 7.5 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 2.5 ± 1 | 0.0 ± 0 | 10.0 ± 1 |
| | | 1000 | 35 | 0.0 ± 0 | 8.6 ± 1 | 5.7 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 5.7 ± 1 |
| | | 2000 | 37 | 13.5 ± 3[b] | 10.8 ± 2 | 2.7 ± 1 | 2.7 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.7 ± 1 |
| | | 4000 | 45 | 2.2 ± 1 | 40.0 ± 3[b] | 6.7 ± 2 | 2.2 ± 1 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 8.9 ± 2 |
| | | 8000 | 44 | 6.8 ± 2 | 56.8 ± 3[a] | 11.4 ± 2 | 2.3 ± 1 | 6.8 ± 1 | 13.6 ± 0[b] | 2.3 ± 1 | 29.5 ± 7[b] |
| | | 16,000 | 7 | 0.0 ± 0 | 28.6 ± 0 | 85.7 ± 0[a] | 0.0 ± 0 | 57.1 ± 0[a] | 0.0 ± 0 | 28.6 ± 0[a] | 71.4 ± 0[a] |
| 29 | Streptomycin sulfate | 0 | 42 | 0.0 ± 0 | 4.8 ± 1 | 23.8 ± 6 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 23.8 ± 3 |
| | | 250 | 27 | 3.7 ± 1 | 3.7 ± 1 | 7.4 ± 0 | 0.0 ± 0 | 7.4 ± 0 | 3.7 ± 1 | 3.7 ± 1 | 14.2 ± 5 |
| | | 500 | 27 | 0.0 ± 0 | 22.2 ± 1 | 14.8 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 3.7 ± 1 | 0.0 ± 0 | 14.8 ± 4 |
| | | 1000 | 28 | 0.0 ± 0 | 28.6 ± 4 | 7.1 ± 2 | 0.0 ± 0 | 3.6 ± 1 | 10.7 ± 3 | 0.0 ± 0 | 50.0 ± 4 |
| | | 2000 | 30 | 0.0 ± 0 | 30.0 ± 0[b] | 33.3 ± 3 | 0.0 ± 0 | 3.3 ± 1 | 16.7 ± 4[b] | 3.3 ± 1 | 70.0 ± 1[a] |
| | | 4000 | 26 | 0.0 ± 0 | 46.2 ± 2[a] | 26.9 ± 1 | 0.0 ± 0 | 7.7 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 46.2 ± 2 |
| 30 | Cadmium(II) chloride | 0 | 47 | 0.0 ± 0 | 19.1 ± 2 | 4.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 6.4 ± 2 |
| | | 10 | 35 | 54.3 ± 3[a] | 62.9 ± 7[a] | 94.3 ± 2[a] | 0.0 ± 0 | 5.7 ± 2 | 17.1 ± 2[b] | 8.6 ± 2 | 74.3 ± 2[a] |
| | | 20 | 39 | 48.7 ± 3[a] | 61.5 ± 2[a] | 79.5 ± 4[a] | 0.0 ± 0 | 5.1 ± 1 | 7.7 ± 1 | 0.0 ± 0 | 66.7 ± 6[a] |
| | | 40 | 14 | 71.4 ± 9[a] | 64.3 ± 1[a] | 71.4 ± 8[a] | 7.1 ± 4 | 0.0 ± 0 | 14.3 ± 2 | 0.0 ± 0 | 71.4 ± 8[a] |
| 31 | Copper(II) nitrate trihydrate | 0 | 43 | 0.0 ± 0 | 13.2 ± 2 | 23.7 ± 5 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.9 ± 5 |
| | | 6.25 | 13 | 30.8 ± 2[c] | 61.5 ± 4[a] | 61.5 ± 10[b] | 0.0 ± 0 | 15.4 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 69.2 ± 5[b] |
| | | 12.5 | 13 | 15.4 ± 0 | 76.9 ± 4[a] | 30.8 ± 5 | 7.7 ± 3 | 46.2 ± 5[a] | 0.0 ± 0 | 0.0 ± 0 | 61.5 ± 10 |
| 32 | Lead acetate trihydrate | 0 | 44 | 2.6 ± 1 | 7.7 ± 2 | 7.7 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.2 ± 2 |
| | | 10 | 29 | 0.0 ± 0 | 6.9 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 31.0 ± 4 |
| | | 20 | 28 | 3.6 ± 1 | 3.6 ± 1 | 3.6 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 3.6 ± 1 | 3.6 ± 1 | 39.3 ± 0 |
| | | 40 | 30 | 6.7 ± 2 | 3.3 ± 1 | 3.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 6.7 ± 2 | 0.0 ± 0 | 26.7 ± 2 |
| 33 | Lithium chloride | 0 | 34 | 0.0 ± 0 | 11.8 ± 2 | 8.8 ± 4 | 0.0 ± 0 | 2.9 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 5.7 ± 1 |
| | | 1000 | 37 | 2.7 ± 1 | 27.0 ± 4 | 37.8 ± 4[c] | 0.0 ± 0 | 0.0 ± 0 | 2.7 ± 1 | 0.0 ± 0 | 16.2 ± 2 |
| | | 2000 | 35 | 25.7 ± 3[c] | 48.6 ± 7[c] | 94.3 ± 2[a] | 0.0 ± 0 | 0.0 ± 0 | 22.9 ± 3[c] | 0.0 ± 0 | 54.3 ± 6[a] |
| | | 4000 | 15 | 53.3 ± 9[a] | 80.0 ± 6[a] | 100.0 ± 0[a] | 0.0 ± 0 | 0.0 ± 0 | 86.7 ± 1[a] | 33.3 ± 10[c] | 93.3 ± 2[a] |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 34 | Chloramphenicol | 0 | 44 | 0.0 ± 0 | 6.8 ± 1 | 4.5 ± 1 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 |
| | | 100 | 45 | 0.0 ± 0 | 0.0 ± 0 | 2.1 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.1 ± 1 |
| | | 200 | 41 | 0.0 ± 0 | 12.2 ± 2 | 4.9 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 22.0 ± 2 |
| | | 400 | 47 | 17.0 ± 3[c] | 36.2 ± 5[a] | 29.8 ± 5[c] | 0.0 ± 0 | 6.4 ± 1 | 2.1 ± 1 | 0.0 ± 0 | 14.9 ± 1 |
| | | 800 | 14 | 35.7 ± 16[a] | 42.9 ± 3[a] | 50.0 ± 6[a] | 0.0 ± 0 | 7.1 ± 3 | 14.3 ± 6[b] | 14.3 ± 6[b] | 14.3 ± 1 |
| 35 | Ethanol | 0 | 44 | 0.0 ± 0 | 11.4 ± 0 | 4.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 11.4 ± 2 |
| | | 1000 | 37 | 0.0 ± 0 | 18.9 ± 3 | 2.7 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 16.2 ± 1 |
| | | 2000 | 42 | 0.0 ± 0 | 19.0 ± 3 | 7.1 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 35.7 ± 4[b] |
| | | 4000 | 37 | 0.0 ± 0 | 8.1 ± 0 | 8.1 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 18.9 ± 3 |
| | | 8000 | 38 | 15.8 ± 2[c] | 28.9 ± 4 | 21.1 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 36.8 ± 6[b] |
| | | 16,000 | 31 | 29.0 ± 4[a] | 32.3 ± 5 | 35.5 ± 2[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 29.0 ± 9 |
| 36 | Glycerol | 0 | 43 | 2.3 ± 1 | 34.9 ± 2 | 9.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 7.0 ± 1 |
| | | 2000 | 43 | 0.0 ± 0 | 20.9 ± 2 | 2.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 14.0 ± 3 |
| | | 4000 | 44 | 0.0 ± 0 | 13.6 ± 3 | 4.451 | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 11.240 |
| | | 8000 | 45 | 0.0 ± 0 | 13.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 15.062 |
| | | 16,000 | 43 | 0.0 ± 0 | 25.6 ± 1 | 9.3 ± 3 | 0.0 ± 0 | 7.0 ± 2[b] | 0.0 ± 0 | 0.0 ± 0 | 16.631 |
| 37 | Tween 80 | 0 | 47 | 0.0 ± 0 | 8.5 ± 1 | 8.5 ± 2 | 2.1 ± 1 | 2.1 ± 1 | 2.1 ± 1 | 0.0 ± 0 | 23.4 ± 2 |
| | | 100 | 16 | 6.3 ± 0 | 18.8 ± 0 | 18.8 ± 0 | 6.3 ± 0 | 18.8 ± 0 | 6.3 ± 0 | 18.8 ± 0[c] | 31.3 ± 0 |
| | | 200 | 14 | 0.0 ± 0 | 14.3 ± 0 | 35.7 ± 0[b] | 0.0 ± 0 | 35.7 ± 0[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| 38 | Acetic acid | 0 | 42 | 0.0 ± 0 | 14.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 4.8 ± 1 |
| | | 50 | 45 | 2.2 ± 1 | 28.9 ± 2 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.2 ± 1 | 0.0 ± 0 | 28.9 ± 7[b] |
| | | 100 | 44 | 27.3 ± 3[a] | 86.4 ± 3[a] | 31.8 ± 2[a] | 0.0 ± 0 | 0.0 ± 0 | 4.5 ± 1 | 0.0 ± 0 | 45.5 ± 8[a] |
| | | 200 | 15 | 62.7 ± 8[a] | 93.3 ± 4[a] | 80.0 ± 6[a] | 0.0 ± 0 | 0.0 ± 0 | 40.0 ± 5[a] | 6.7 ± 4[b] | 86.7 ± 7[a] |
| 39 | Salicylic acid | 0 | 42 | 2.4 ± 1 | 16.7 ± 3 | 21.4 ± 5 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 0.0 ± 0 | 14.3 ± 3 |
| | | 7.5 | 38 | 5.3 ± 1 | 21.1 ± 3 | 18.343 | 5.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 5.3 ± 1 |
| | | 15 | 41 | 0.0 ± 0 | 17.1 ± 1 | 9.8 ± 3 | 0.0 ± 0 | 2.4 ± 1 | 2.4 ± 1 | 2.641 | 7.431 |
| | | 30 | 40 | 0.0 ± 0 | 52.5 ± 2[a] | 25.0 ± 7 | 2.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 7.5 ± 1 |
| 40 | Sodium oxalate | 0 | 46 | 2.2 ± 1 | 13.0 ± 2 | 4.3 ± 1 | 0.0 ± 0 | 2.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 4.3 ± 1 |
| | | 100 | 47 | 6.4 ± 1 | 8.5 ± 1 | 14.9 ± 2 | 4.3 ± 1 | 2.1 ± 1 | 8.5 ± 1 | 0.0 ± 0 | 21.3 ± 2 |
| | | 200 | 41 | 22.0 ± 6[c] | 26.8 ± 4 | 29.3 ± 7[c] | 4.9 ± 2 | 4.9 ± 2 | 31.7 ± 9[a] | 14.6 ± 5[b] | 24.4 ± 6[b] |
| | | 400 | 16 | 12.5 ± 0 | 0.0 ± 0 | 6.3 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 87.5 ± 0[a] | 43.8 ± 0[a] | 12.5 ± 0 |
| 41 | Trichloroacetic acid | 0 | 41 | 2.4 ± 1 | 14.6 ± 2 | 4.9 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 0.0 ± 0 | 7.3 ± 1 |
| | | 20 | 40 | 2.5 ± 1 | 22.5 ± 4 | 0.0 ± 0 | 2.5 ± 1 | 0.0 ± 0 | 5.0 ± 1 | 0.0 ± 0 | 2.5 ± 1 |
| | | 40 | 26 | 0.0 ± 0 | 15.4 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 3.8 ± 1 |
| | | 80 | 8 | 75.0 ± 0[a] | 25.0 ± 0 | 12.5 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 12.5 ± 0 | 0.0 ± 0 | 62.5 ± 0[a] |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 42 | Ampicillin sodium | 0 | 43 | 0.0 ± 0 | 16.3 ± 2 | 18.6 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 16.3 ± 2 |
| | | 250 | 44 | 0.0 ± 0 | 25.0 ± 2 | 27.3 ± 7 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 11.341 |
| | | 500 | 41 | 0.0 ± 0 | 34.1 ± 1 | 22.0 ± 7 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 0.0 ± 0 | 34.1 ± 2 |
| | | 1000 | 38 | 0.0 ± 0 | 21.1 ± 3 | 31.6 ± 9 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 28.9 ± 5 |
| | | 2000 | 39 | 0.0 ± 0 | 28.2 ± 3 | 20.5 ± 8 | 0.0 ± 0 | 0.0 ± 0 | 2.6 ± 1 | 2.6 ± 1 | 35.9 ± 7 |
| | | 4000 | 38 | 0.0 ± 0 | 5.3 ± 1 | 13.2 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 34.2 ± 5 |
| 43 | Cyclophosphamide monohydrate | 0 | 42 | 0.0 ± 0 | 13.8 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |
| | | 1000 | 28 | 3.6 ± 1 | 21.4 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 436 ± 1 |
| | | 2000 | 11 | 45.5 ± 6[a] | 90.9 ± 4[a] | 54.5 ± 14[a] | 9.1 ± 4 | 9.1 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 90.9 ± 4[a] |
| 44 | Paracetamol | 0 | 45 | 0.0 ± 0 | 8.0 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 4.0 ± 1 |
| | | 100 | 27 | 0.0 ± 0 | 7.4 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 18.5 ± 3 |
| | | 200 | 24 | 0.0 ± 0 | 20.9 ± 5 | 4.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 29.2 ± 10 |
| | | 400 | 25 | 4.0 ± 1 | 24.0 ± 7 | 12.0 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 4.0 ± 1 | 4.0 ± 1 | 20.0 ± 5 |
| 45 | Phenacetin | 0 | 44 | 0.0 ± 0 | 9.1 ± 1 | 4.5 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 9.1 ± 1 |
| | | 50 | 44 | 0.0 ± 0 | 9.1 ± 1 | 2.431 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 20.5 ± 3 |
| | | 100 | 43 | 0.0 ± 0 | 14.0 ± 0 | 7.0 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 9.3 ± 2 | 0.0 ± 0 | 39.5 ± 3[c] |
| | | 200 | 43 | 27.9 ± 3[a] | 65.1 ± 0[a] | 16.3 ± 2 | 0.0 ± 0 | 2.3 ± 1 | 16.3 ± 4[b] | 0.0 ± 0 | 55.8 ± 6[a] |
| 46 | Benserazide hydrochloride | 0 | 42 | 0.0 ± 0 | 10.3 ± 1 | 10.231 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 37.9 ± 2 |
| | | 250 | 26 | 38.5 ± 6[c] | 100.0 ± 0[a] | 15.4 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 100.0 ± 0[a] |
| | | 500 | 12 | 50.0 ± 7[a] | 83.3 ± 7[a] | 33.3 ± 0 | 0.0 ± 0 | 8.3 ± 3 | 0.0 ± 0 | 0.0 ± 0 | 83.3 ± 0[c] |
| | | 1000 | 5 | 20.0 ± 0 | 80.0 ± 0[a] | 40.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 80.0 ± 0[c] |
| 47 | Chlorpromazine hydrochloride | 0 | 42 | 0.0 ± 0 | 11.9 ± 2 | 7.1 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.141 |
| | | 1 | 37 | 0.0 ± 0 | 24.3 ± 4 | 24.3 ± 5 | 2.7 ± 1 | 2.7 ± 1 | 2.7 ± 1 | 0.0 ± 0 | 146,821 |
| | | 2 | 39 | 7.7 ± 1 | 35.9 ± 4[b] | 23.1 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 28.2 ± 4[a] | 0.0 ± 0 | 25.6 ± 4[b] |
| | | 4 | 15 | 33.3 ± 0[a] | 33.3 ± 0 | 53.3 ± 0[a] | 0.0 ± 0 | 6.7 ± 0 | 13.3 ± 0 | 0.0 ± 0 | 40.0 ± 0[c] |
| 48 | Isoniazid | 0 | 46 | 0.0 ± 0 | 21.7 ± 3 | 6.5 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 17.4 ± 1 |
| | | 200 | 40 | 0.0 ± 0 | 15.503 | 22.5 ± 6 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 12.5 ± 3 |
| | | 400 | 38 | 0.0 ± 0 | 28.9 ± 4 | 28.9 ± 8[b] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 42.1 ± 2[b] |
| | | 800 | 35 | 8.6 ± 1 | 40.0 ± 8 | 60.805[a] | 2.9 ± 1 | 0.0 ± 0 | 14.3 ± 8[b] | 2.9 ± 2 | 68.6 ± 2[a] |
| | | 1600 | 14 | 21.4 ± 9[a] | 57.1 ± 19[b] | 100.0 ± 0[a] | 0.0 ± 0 | 0.0 ± 0 | 14.3 ± 5[b] | 0.0 ± 0 | 100.0 ± 0[a] |
| 49 | Phenelzine sulfate | 0 | 43 | 0.0 ± 0 | 5.3 ± 1 | 2.6 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.6 ± 1 |
| | | 5 | 42 | 0.0 ± 0 | 11.9 ± 2 | 4.8 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 | 0.0 ± 0 | 4.8 ± 1 |
| | | 10 | 37 | 16.2 ± 4[b] | 29.7 ± 5[c] | 10.8 ± 1 | 0.0 ± 0 | 2.7 ± 1 | 35.1 ± 5[a] | 2.7 ± 1 | 10.8 ± 2 |
| 50 | Ethambutol dihydrochloride | 0 | 42 | 0.0 ± 0 | 2.4 ± 1 | 16.7 ± 4 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 2.4 ± 1 |
| | | 1000 | 43 | 2.3 ± 1 | 30.2 ± 2[c] | 2.3 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 2.3 ± 1 | 0.0 ± 0 | 2.3 ± 1 |
| | | 2000 | 42 | 2.4 ± 1 | 45.2 ± 2[a] | 4.8 ± 1 | 0.0 ± 0 | 2.4 ± 1 | 7.1 ± 2 | 0.0 ± 0 | 0.0 ± 0 |
| | | 4000 | 40 | 15.0 ± 6[b] | 62.5 ± 4[a] | 15.0 ± 6 | 10.0 ± 4[b] | 10.0 ± 4[b] | 10.0 ± 4 | 10.0 ± 4[b] | 22.5 ± 9[c] |
| | | 8000 | 15 | 20.0 ± 5[b] | 100.0 ± 0[a] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 51 | Verapamil hydrochloride | 0 | 45 | 0.0±0 | 15.6±3 | 11.1±3 | 0.0±0 | 2.2±1 | 0.0±0 | 0.0±0 | 17.8±3 |
| | | 10 | 38 | 0.0±0 | 13.2±1 | 26.3±7 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 15.8±2 |
| | | 20 | 33 | 0.0±0 | 9.1±1 | 21.2±7 | 0.0±0 | 3.0±1 | 3.0±1 | 0.0±0 | 15.2±1 |
| | | 40 | 38 | 21.1±7[c] | 13.2±3 | 26.3±9 | 0.0±0 | 5.3±2 | 18.4±7[b] | 2.6±1 | 18.4±3 |
| | | 80 | 20 | 65.0±6[a] | 30.0±2 | 85.0±2[a] | 0.0±0 | 5.0±1 | 70.0±2[a] | 0.0±0 | 60.0±4[a] |
| 52 | Phenol | 0 | 43 | 0.0±0 | 9.3±2 | 4.7±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 27.9±4 |
| | | 10 | 39 | 0.0±0 | 15.4±4 | 20.5±3 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 38.5±6 |
| | | 20 | 41 | 7.3±1 | 19.5±4 | 24.4±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 22.0±2 |
| | | 40 | 43 | 30.2±4[a] | 16.3±3 | 58.1±2[a] | 0.0±0 | 0.0±0 | 2.3±1 | 0.0±0 | 44.2±5 |
| | | 80 | 22 | 81.8±3[a] | 36.4±7[b] | 86.4±1[a] | 0.0±0 | 13.6±[b] | 18.2±3[c] | 0.0±0 | 90.9±2[a] |
| 53 | Sodium azide | 0 | 41 | 2.4±1 | 4.9±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 7.3±0 |
| | | 0.5 | 46 | 2.2±1 | 34.8±5[c] | 13.0±2 | 0.0±0 | 0.0±0 | 4.3±1 | 4.3±1 | 15.2±1 |
| | | 1 | 38 | 5.3±1 | 57.9±9[a] | 13.2±1 | 5.3±1 | 5.3±1 | 0.0±0 | 0.0±0 | 28.9±1[b] |
| | | 2 | 5 | 60.0±0[a] | 40.0±0[a] | 60.0±0[a] | 0.0±0 | 0.0±0 | 20.0±[b] | 0.0±0 | 40.0±0[b] |
| 54 | Dimethyl sulfoxide | 0 | 44 | 0.0±0 | 18.2±2 | 6.8±2 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 |
| | | 2000 | 31 | 3.2±1 | 22.6±3 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 |
| | | 4000 | 34 | 8.8±3 | 26.5±3 | 5.9±1 | 0.0±0 | 0.0±0 | 2.9±1 | 2.9±1 | 14.0±3[b] |
| | | 8000 | 42 | 0.0±0 | 16.7±2 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 |
| | | 16,000 | 44 | 13.6±1[b] | 20.5±2 | 9.1±2 | 0.0±0 | 0.0±0 | 4.5±1 | 2.3±1 | 20.5±1[c] |
| 55 | Formaldehyde | 0 | 41 | 0.0±0 | 17.1±3 | 7.3±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 2.4±1 |
| | | 2 | 45 | 0.0±0 | 42.2±7[b] | 11.1±2 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 4.4±1 |
| | | 4 | 42 | 4.8±1 | 9.5±2 | 7.1±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 4.8±1 |
| | | 8 | 35 | 2.9±1 | 17.1±2 | 8.6±3 | 0.0±0 | 2.9±1 | 2.9±1 | 2.9±1 | 8.6±3 |
| | | 16 | 14 | 0.0±0 | 50.0±7[b] | 57.1±7[a] | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 42.9±4[a] |
| 56 | Phenformin hydrochloride | 0 | 42 | 0.0±0 | 7.1±1 | 4.8±1 | 0.0±0 | 2.4±1 | 2.4±1 | 0.0±0 | 0.0±0 |
| | | 100 | 47 | 0.0±0 | 12.8±2 | 4.3±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 4.3±1 |
| | | 200 | 41 | 2.4±1 | 19.5±4 | 2.4±1 | 0.0±0 | 2.4±1 | 2.4±1 | 0.0±0 | 9.8±1 |
| | | 400 | 42 | 0.0±0 | 66.7±7[a] | 9.5±3 | 0.0±0 | 0.0±0 | 4.8±1 | 0.0±0 | 35.4±8[a] |
| 57 | Ropinirole hydrochloride | 0 | 42 | 0.0±0 | 12.5±1 | 3.1±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 6.3±1 |
| | | 100 | 36 | 2.8±1 | 33.3±1 | 19.4±3 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 38.9±5[c] |
| | | 200 | 41 | 29.3±3[a] | 36.6±1[b] | 31.7±2[b] | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 41.5±2[c] |
| | | 400 | 30 | 93.3±1[a] | 90.0±2[a] | 56.7±3[a] | 0.0±0 | 0.0±0 | 6.7±1 | 0.0±0 | 83.3±3[a] |
| 58 | Amitriptyline hydrochloride | 0 | 40 | 0.0±0 | 5.3±2 | 15.8±4 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 10.5±3 |
| | | 2 | 37 | 13.5±2[b] | 2.7±1 | 78.4±5[a] | 0.0±0 | 0.0±0 | 27.0±5[c] | 0.0±0 | 51.4±8[a] |
| | | 4 | 18 | 5.6±3 | 22.2±7[b] | 100.0±0[a] | 0.0±0 | 0.0±0 | 50.0±13[a] | 5.6±1 | 77.8±6[a] |
| | | 8 | 8 | 0.0±0 | 0.0±0 | 100.0±0[a] | 0.0±0 | 0.0±0 | 75.0±[a] | 12.5±0 | 100.0±0[a] |
| 59 | Sodium dodecyl sulfate | 0 | 41 | 2.4±1 | 12.122 | 2.4±1 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 4.9±1 |
| | | 1 | 36 | 2.8±1 | 27.8±6 | 11.1±4 | 0.0±0 | 2.8±1 | 0.0±0 | 0.0±0 | 5.6±1 |
| | | 2 | 24 | 0.0±0 | 8.3±2 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 4.2±1 |
| | | 4 | 12 | 16.7±0 | 83.3±0[a] | 25.0±3[b] | 0.0±0 | 0.0±0 | 0.0±0 | 0.0±0 | 25.0±10[b] |

(*continued*)

SUPPLEMENTARY TABLE S3. (CONTINUED)

| | Compounds | Concentrations | Survivors obtained at day 5 (N) | Percent morphological abnormalities ± SEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pericardial oedema | Yolk sac oedema | Dispersed pigment cells | Bent tail | Curved body axis | Meckel's cartilage hypoplasia | Branchial arch hypoplasia | Uninflated swim bladder |
| 60 | Barbital sodium | 0 | 45 | 0.0 ± 0 | 11.1 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 4.4 ± 1 |
| | | 500 | 41 | 0.0 ± 0 | 31.7 ± 3 | 9.8 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 19.5 ± 4 |
| | | 1000 | 43 | 0.0 ± 0 | 27.9 ± 5 | 25.6 ± 1[c] | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 0.0 ± 0 | 58.6 ± 5[a] |
| | | 2000 | 31 | 3.2 ± 1 | 12.9 ± 0 | 29.9 ± 8[c] | 0.0 ± 0 | 3.2 ± 1 | 0.0 ± 0 | 0.0 ± 0 | 83.9 ± 3[a] |
| | | 4000 | 26 | 3.8 ± 1 | 23.1 ± 2 | 30.8 ± 0[c] | 0.0 ± 0 | 3.8 ± 2 | 0.0 ± 0 | 0.0 ± 0 | 69.2 ± 7[a] |
| | | 8000 | 10 | 40.0 ± 18[a] | 70.0 ± 13[a] | 80.0 ± 9[a] | 0.0 ± 0 | 20.0 ± 9[a] | 20.0 ± 9[a] | 10.0 ± 4[a] | 100.0 ± 0[a] |

A different geometric scale was used for different compounds because of the variations in toxicity found with the logarithmic range-finding.[1] The values given are the mean percentage morphological abnormalities from three replicates; the geometric series of concentrations C0, C1, and so on, are given for each compound in Supplementary Table S2. Significance levels of all phenotypic effects for each concentration for each compound were calculated from three independent experiments.

Statistical icons: [a]$p < 0.001$, [b]$p < 0.05$, and [c]$p < 0.01$.

SEM, standard error of the mean.