

Supplementary Material

CONTENT

Table 1 (Picture??) Identification of protein spots in the protein pattern of 5 days old zebrafish larvae.

Table 2 Protein spots changed in expression after exposure to EC₁₀ of rotenone, DNOC and diclofenac in two or all three exposure experiments.

Table 3 Regulated protein spots after exposure of 3 days old zebrafish eleutheroembryos for 48 h to the EC₁₀ of rotenone. 207 spots changed in expression, 116 of these protein spots were up-regulated and 91 down-regulated.

Table 4 Regulated protein spots after exposure of 3 days old zebrafish eleutheroembryos for 48 h to the EC₁₀ of DNOC. 76 spots changed in expression, 56 of these protein spots were up-regulated and 20 down-regulated.

Table 5 Regulated spots after exposure of 3 days old zebrafish eleutheroembryos for 48 h to the EC₁₀ of diclofenac. 47 spots changed in expression, 42 of these protein spots were up-regulated and 5 down-regulated.

Figure SM1 see PP file

Figure SM2 see PP file

TABLES

Table 1

Identification of protein spots in the protein pattern of 5 days old zebrafish eleutheroembryos.

| MASCOT- score | Protein-NAME | MW_{obs/cal} [kDa] | pI_{obs/cal} |
|--------------------------|------------------------------------|-----------------------------------|-----------------------------|
| 172 | vitellogenin 2 | 48.0 / 69.0 | 6.4 / 7.84 |
| 752.33 | vitellogenin 1 | 37.0/128.0 | 5.5/8.68 |
| 68 | vitellogenin 1 | 47.0 / 14.9 | 6.6 / 8.74 |
| 431.1 | vitellogenin 1 | 33.0/128.0 | 5.7/8.68 |
| >50 | vitellogenin 1 | 30.0/128.0 | 6.1/8.68 |
| >50 | vitellogenin 1 | 30.0/128.0 | 6.2/8.68 |
| 106 | tubulin alpha | 41.0 / 50.0 | 5.5 / 4.93 |
| 139 | tubulin | 33.0 / 52.5 | 5.0 / 4.9 |
| 380 | troponin c | 17.0 / 18.2 | 4.0 / 3.96 |
| 253 | tropomyosin | 36.0 / 28.6 | 4.6 / 4.74 |
| 128 | tropomyosin | 40.0 / 32.7 | 4.5 / 4.7 |
| 237 | ribosomal protein large PO (RpIpO) | 33.0/34.4 | 4.8/5.73 |
| 196 | Proteasome subunit alpha type 5 | 26.0/26.4 | 4.7/4.74 |
| 93 | myosin | 16.5 / 16.5 | 4.6 / 4.39 |
| 394 | myosin | 15.0 / 16.5 | 4.4 / 4.39 |
| 346 | myosin | 30.0 / 22.0 | 4.7 / 5.54 |
| 293 | myosin | 12.0 / 18.8 | 4.5 / 4.68 |

| | | | |
|---------|---------------------------------------|-------------|------------|
| 174 | myosin | 14.0 / 16.8 | 4.4 / 4.39 |
| 147 | myosin | 32.0 / 48.6 | 4.9 / 5.52 |
| 120 | myosin | 30.0 / 48.6 | 5.1 / 5.52 |
| 631 | krt4 | 43.0 / 53.9 | 5.1 / 5.34 |
| 513 | Keratin 5 | 44.5 / 59.0 | 5.1 / 5.34 |
| 711 | Keratin 4 | 44.0 / 54.0 | 5.4 / 5.34 |
| 121 | Keratin 5 | 44.0 / 58.6 | 4.9 / 5.34 |
| 85 | hyp. Protein | 19.0/82.9 | 5.9/5.43 |
| 101 | hyp protein LOC641320 | 30.0/41.8 | 5.4/5.3 |
| 432/401 | hyp protein LOC323055/ Apolipoprotein | 42.6/31.7 | 5.1/4.95 |
| 359 | hyp protein LOC447930 | 19.0 / 19.1 | 4.6 / 4.64 |
| 170 | hsp60 | 55.0 / 61.1 | 5.4 / 5.56 |
| 210 | cytokeratin | 44.0 / 46.7 | 4.7 / 5.13 |
| 613 | ATP-Synthase | 48.0 / 54.9 | 5.2 / 5.35 |
| 353 | ATP-Synthase | 55.0 / 54.9 | 5.2 / 5.25 |
| 462 | Apolipoprotein A-IV | 24.5 / 30.0 | 4.6 / 4.82 |
| 66 | alpha cardiac actin | 43.0/ 41.9 | 5.9 / 5.29 |
| 236 | alpha cardiac actin | 37.0 / 42.0 | 5.5 / 5.29 |
| 132 | alpha actin 1 | 44.0 / 41.9 | 5.1 / 5.23 |
| 374 | alpha actin | 40.0 / 42.0 | 5.5 / 5.18 |
| 1110.35 | actin. alpha 1. skeletal muscle | 55.0/42.0 | 5.4/5.23 |
| 280 | actin. alpha 1 | 30.0 / 41.9 | 5.5 / 5.23 |
| 99 | actin alpha | 31.0 / 42.0 | 5.4 / 5.23 |
| 673 | actin | 45.0 / 41.7 | 5.3 / 5.3 |
| 291 | actin | 40.0 / 41.9 | 5.6 / 5.23 |

Table 2

Protein spots changed in expression after exposure to EC₁₀ of rotenone, DNOC and diclofenac in two (DicR/DR/DicD) or all three exposure experiments (DicDR).

| Rotenon | DNOC | Diclofenac | Name in Figures |
|---------|-------|------------|-----------------|
| R037o | D042o | Dic27o | DicDR1 |
| R049o | D079o | Dic15o | DicDR2 |
| R068o | D051o | Dic41o | DicDR3 |
| R071o | D043o | Dic12o | DicDR4 |
| R088o | D044o | Dic11o | DicDR5 |
| R107o | D055o | Dic19o | DicDR6 |
| R109o | D035o | Dic47o | DicDR7 |
| R111o | D040o | Dic14o | DicDR8 |
| R189r | D101r | Dic64r | DicDR9 |
| R021o | | Dic13o | DicR1 |
| R060o | | Dic23o | DicR2 |
| R069o | | Dic48o | DicR3 |
| R072o | | Dic17o | DicR4 |
| R085o | | Dic29o | DicR5 |
| R087o | | Dic31o | DicR6 |
| R132r | | Dic35o | DicR7 |
| R134r | | Dic59r | DicR8 |
| R139r | | Dic61r | DicR9 |
| R140r | | Dic60r | DicR10 |
| R150r | | Dic62r | DicR11 |
| R168r | | Dic66r | DicR12 |

| | | | |
|-------|---------|--------|--------|
| R173r | | Dic22o | DicR13 |
| R186r | | Dic57r | DicR14 |
| R013o | D078o | | DR1 |
| R014o | D050o | | DR2 |
| R036o | D071o | | DR3 |
| R041o | D083o | | DR4 |
| R044o | D041o | | DR5 |
| R081o | D049o | | DR6 |
| R096o | D034o | | DR7 |
| R145r | D106r | | DR8 |
| R161r | D069o | | DR9 |
| R169r | D108r | | DR10 |
| R175r | D099r.R | | DR11 |
| R196r | D112r | | DR12 |
| R75o | D048o | | DR13 |
| | D062o | Dic51o | DicD1 |

Table 3

Regulated protein spots after exposure of 3 days old zebrafish eleutheroembryos for a duration of 48 h to the EC₁₀ concentration of rotenone. 207 spots changed in expression. 116 of these protein spots were up-regulated and 91 down-regulated.

| Spot | Mean C | Rsd [%] | Mean EC ₁₀ | Rsd [%] | ratio | t-Test | Spot | Mean C | Rsd [%] | Mean EC ₁₀ | Rsd [%] | ratio | t-Test |
|-------|--------|---------|-----------------------|---------|-------|--------|-------|--------|---------|-----------------------|---------|-------|--------|
| R001o | 0.19 | 35.1 | 0.38 | 11.6 | 2.0 | 97.4 | R036o | 0.13 | 32.3 | 0.42 | 15.4 | 3.3 | 99.4 |
| R002o | 0.01 | 24.5 | 0.03 | 16.8 | 2.1 | 97.6 | R037o | 0.27 | 45.4 | 0.91 | 8.7 | 3.3 | 99.6 |
| R003o | 0.65 | 21.7 | 1.37 | 19.5 | 2.1 | 97.1 | R038o | 0.02 | 65.4 | 0.08 | 11.1 | 3.5 | 99.0 |
| R004o | 0.57 | 46.8 | 1.21 | 6.9 | 2.1 | 96.8 | R039o | 0.13 | 29.5 | 0.44 | 23.7 | 3.5 | 98.4 |
| R005o | 0.08 | 24.6 | 0.16 | 9.5 | 2.1 | 99.2 | R040o | 0.05 | 21.6 | 0.18 | 30.3 | 3.5 | 97.0 |
| R006o | 0.17 | 15.2 | 0.36 | 9.4 | 2.1 | 99.7 | R041o | 0.09 | 44.3 | 0.38 | 18.7 | 4.1 | 99.2 |
| R007o | 0.20 | 12.4 | 0.43 | 5.5 | 2.2 | 99.9 | R042o | 0.02 | 49.3 | 0.06 | 10.8 | 4.1 | 99.7 |
| R008o | 0.42 | 9.5 | 0.93 | 6.3 | 2.2 | 99.9 | R043o | 0.00 | 67.9 | 0.02 | 32.1 | 4.2 | 96.0 |
| R009o | 0.18 | 11.9 | 0.40 | 20.2 | 2.2 | 98.0 | R044o | 0.12 | 39.2 | 0.52 | 11.4 | 4.3 | 99.8 |
| R010o | 0.07 | 35.3 | 0.15 | 20.6 | 2.2 | 96.2 | R045o | 0.07 | 39.6 | 0.31 | 5.6 | 4.3 | 99.9 |
| R011o | 0.27 | 20.4 | 0.63 | 12.2 | 2.3 | 99.4 | R046o | 0.01 | 70.8 | 0.06 | 9.1 | 4.5 | 99.6 |
| R012o | 0.20 | 10.9 | 0.45 | 12.7 | 2.3 | 99.6 | R047o | 0.04 | 11.5 | 0.17 | 19.7 | 4.6 | 99.5 |
| R013o | 0.19 | 29.3 | 0.45 | 25.1 | 2.3 | 95.5 | R048o | 0.03 | 59.4 | 0.14 | 13.1 | 4.7 | 99.6 |
| R014o | 0.15 | 12.7 | 0.36 | 11.9 | 2.3 | 99.6 | R049o | 0.06 | 39.6 | 0.29 | 19.3 | 4.8 | 99.4 |
| R015o | 0.10 | 58.2 | 0.23 | 8.7 | 2.3 | 96.3 | R050o | 0.02 | 50.7 | 0.09 | 4.0 | 4.8 | 99.9 |
| R016o | 0.16 | 19.4 | 0.38 | 13.9 | 2.4 | 99.3 | R051o | 0.03 | 30.1 | 0.16 | 36.4 | 4.9 | 96.2 |
| R017o | 0.03 | 40.0 | 0.07 | 4.1 | 2.4 | 99.1 | R052o | 0.03 | 102.5 | 0.16 | 23.7 | 5.0 | 97.8 |
| R018o | 0.04 | 2.6 | 0.10 | 16.8 | 2.4 | 99.2 | R053o | 0.03 | 58.1 | 0.19 | 33.6 | 5.7 | 97.1 |
| R019o | 0.53 | 7.2 | 1.30 | 19.1 | 2.5 | 98.8 | R054o | 0.04 | 21.5 | 0.22 | 24.7 | 5.7 | 99.0 |
| R020o | 0.03 | 14.8 | 0.08 | 15.1 | 2.5 | 99.4 | R055o | 0.09 | 55.9 | 0.51 | 11.3 | 5.7 | 99.9 |
| R021o | 0.06 | 58.4 | 0.15 | 6.2 | 2.5 | 97.6 | R056o | 0.03 | 56.7 | 0.16 | 26.3 | 5.9 | 98.6 |
| R022o | 0.15 | 21.9 | 0.39 | 29.9 | 2.6 | 95.1 | R057o | 0.12 | 70.4 | 0.72 | 3.9 | 5.9 | 99.9 |
| R023o | 0.26 | 30.5 | 0.67 | 9.8 | 2.6 | 99.5 | R058o | 0.00 | 141.4 | 0.01 | 23.0 | 5.9 | 97.6 |

| | | | | | | | | | | | | | |
|-------|------|-------|------|------|------|-------|-------|------|-------|------|-------|-------|-------|
| R024o | 0.08 | 59.8 | 0.21 | 4.6 | 2.7 | 98.2 | R059o | 0.02 | 30.6 | 0.11 | 39.7 | 6.0 | 95.8 |
| R025o | 0.02 | 11.5 | 0.05 | 13.0 | 2.7 | 99.7 | R060o | 0.12 | 29.6 | 0.73 | 21.8 | 6.1 | 99.4 |
| R026o | 0.01 | 35.8 | 0.03 | 12.0 | 2.8 | 99.3 | R061o | 0.02 | 52.6 | 0.12 | 34.0 | 6.4 | 97.3 |
| R027o | 0.08 | 37.9 | 0.23 | 13.4 | 2.8 | 99.1 | R062o | 0.03 | 92.1 | 0.16 | 22.7 | 6.4 | 98.9 |
| R028o | 0.03 | 27.3 | 0.10 | 20.5 | 2.8 | 98.4 | R063o | 0.05 | 34.3 | 0.32 | 9.2 | 6.4 | 100.0 |
| R029o | 0.01 | 34.8 | 0.03 | 30.4 | 2.9 | 95.2 | R064o | 0.04 | 72.9 | 0.24 | 18.6 | 6.5 | 99.5 |
| R030o | 0.30 | 70.1 | 0.87 | 13.4 | 2.9 | 97.1 | R065o | 0.01 | 87.6 | 0.04 | 40.3 | 6.7 | 95.3 |
| R031o | 0.03 | 17.8 | 0.09 | 8.0 | 2.9 | 99.9 | R066o | 0.00 | 87.2 | 0.02 | 24.0 | 6.7 | 98.8 |
| R032o | 0.05 | 69.3 | 0.16 | 19.5 | 3.0 | 96.5 | R067o | 0.02 | 57.0 | 0.11 | 35.1 | 6.8 | 97.1 |
| R033o | 0.05 | 34.6 | 0.14 | 26.7 | 3.0 | 96.9 | R068o | 0.06 | 67.6 | 0.44 | 9.1 | 7.3 | 99.9 |
| R034o | 0.08 | 49.4 | 0.24 | 23.2 | 3.1 | 97.2 | R069o | 0.08 | 58.8 | 0.58 | 14.2 | 7.5 | 99.8 |
| R035o | 0.11 | 48.6 | 0.35 | 1.5 | 3.2 | 99.7 | R070o | 0.01 | 28.0 | 0.10 | 15.3 | 7.9 | 99.9 |
| R071o | 0.11 | 38.4 | 0.98 | 9.4 | 8.6 | 100.0 | R113o | 0.01 | 85.0 | 0.95 | 10.5 | 134.9 | 100.0 |
| R072o | 0.07 | 14.4 | 0.67 | 19.7 | 9.0 | 99.7 | R114o | 0.00 | 141.4 | 0.11 | 17.0 | 652.5 | 99.9 |
| R073o | 0.01 | 72.2 | 0.10 | 6.8 | 9.1 | 100.0 | R115o | 0.00 | 141.4 | 0.07 | 49.1 | 950.0 | 95.5 |
| R074o | 0.01 | 81.9 | 0.11 | 37.8 | 9.1 | 96.8 | R116o | 0.02 | 24.2 | 0.00 | 141.4 | 0.0 | 99.6 |
| R075o | 0.08 | 34.7 | 0.73 | 9.3 | 9.2 | 100.0 | R117r | 0.04 | 18.2 | 0.00 | 141.4 | 0.0 | 99.8 |
| R076o | 0.03 | 78.9 | 0.26 | 39.6 | 9.3 | 96.4 | R118r | 0.55 | 43.1 | 0.01 | 141.4 | 0.0 | 96.8 |
| R077o | 0.02 | 114.6 | 0.21 | 5.9 | 9.6 | 99.9 | R119r | 0.08 | 41.6 | 0.00 | 141.4 | 0.0 | 97.2 |
| R077o | 0.02 | 114.6 | 0.21 | 5.9 | 9.6 | 99.9 | R120r | 0.10 | 22.1 | 0.00 | 93.2 | 0.0 | 99.7 |
| R078o | 0.05 | 41.9 | 0.52 | 24.2 | 9.7 | 99.3 | R121r | 0.01 | 35.8 | 0.00 | 141.4 | 0.0 | 98.2 |
| R079o | 0.01 | 82.0 | 0.11 | 41.6 | 10.3 | 96.1 | R122r | 0.06 | 18.3 | 0.00 | 97.7 | 0.1 | 99.8 |
| R080o | 0.01 | 95.0 | 0.07 | 7.0 | 10.7 | 100.0 | R123r | 0.29 | 15.1 | 0.02 | 31.6 | 0.1 | 99.9 |
| R081o | 0.08 | 57.9 | 0.91 | 2.9 | 10.9 | 100.0 | R124r | 0.08 | 23.6 | 0.01 | 78.5 | 0.1 | 99.4 |
| R082o | 0.00 | 59.2 | 0.01 | 35.2 | 11.5 | 97.8 | R125r | 0.15 | 30.2 | 0.01 | 90.0 | 0.1 | 98.5 |
| R083o | 0.03 | 54.0 | 0.31 | 6.0 | 11.7 | 100.0 | R126r | 0.14 | 36.2 | 0.01 | 74.2 | 0.1 | 97.5 |
| R084o | 0.01 | 14.5 | 0.11 | 8.5 | 12.1 | 100.0 | R127r | 0.16 | 20.4 | 0.01 | 68.5 | 0.1 | 99.6 |
| R085o | 0.03 | 123.3 | 0.42 | 12.3 | 12.3 | 99.9 | R128r | 0.06 | 31.2 | 0.01 | 70.0 | 0.1 | 98.3 |
| R086o | 0.03 | 64.4 | 0.41 | 3.0 | 12.9 | 100.0 | R129r | 0.04 | 4.0 | 0.00 | 137.9 | 0.1 | 99.9 |
| R087o | 0.03 | 100.1 | 0.42 | 9.7 | 13.5 | 100.0 | R130r | 0.89 | 23.4 | 0.10 | 141.4 | 0.1 | 98.9 |
| R088o | 0.08 | 64.0 | 1.04 | 11.8 | 13.6 | 100.0 | R131r | 0.09 | 37.5 | 0.01 | 96.8 | 0.1 | 96.6 |
| R089o | 0.02 | 59.6 | 0.26 | 42.5 | 13.8 | 96.3 | R132r | 0.23 | 21.2 | 0.03 | 61.3 | 0.1 | 99.4 |
| R090o | 0.03 | 34.2 | 0.42 | 30.4 | 14.0 | 98.7 | R133r | 0.05 | 20.9 | 0.01 | 45.0 | 0.1 | 99.5 |
| R091o | 0.01 | 98.3 | 0.15 | 30.2 | 14.3 | 98.7 | R134r | 0.05 | 19.0 | 0.01 | 87.8 | 0.1 | 99.4 |
| R092o | 0.00 | 86.7 | 0.03 | 16.5 | 14.9 | 99.8 | R135r | 0.08 | 17.8 | 0.01 | 85.1 | 0.1 | 99.5 |
| R093o | 0.03 | 37.8 | 0.45 | 15.1 | 15.2 | 99.9 | R136r | 0.19 | 18.0 | 0.03 | 89.1 | 0.1 | 99.4 |
| R094o | 0.02 | 74.8 | 0.32 | 23.7 | 16.0 | 99.5 | R137r | 0.53 | 20.5 | 0.08 | 89.0 | 0.2 | 99.1 |
| R095o | 0.01 | 85.5 | 0.23 | 34.8 | 17.4 | 98.1 | R138r | 0.47 | 10.6 | 0.08 | 63.2 | 0.2 | 99.9 |
| R096o | 0.03 | 48.1 | 0.57 | 12.1 | 18.1 | 100.0 | R139r | 0.24 | 36.1 | 0.04 | 73.0 | 0.2 | 96.2 |
| R097o | 0.01 | 51.3 | 0.25 | 16.7 | 18.2 | 99.9 | R140r | 0.11 | 27.8 | 0.02 | 64.0 | 0.2 | 98.2 |
| R098o | 0.01 | 106.3 | 0.13 | 32.6 | 18.2 | 98.4 | R141r | 0.04 | 15.6 | 0.01 | 131.8 | 0.2 | 98.3 |
| R099o | 0.01 | 54.3 | 0.10 | 42.5 | 19.0 | 96.5 | R142r | 0.17 | 7.0 | 0.03 | 42.6 | 0.2 | 100.0 |
| R100o | 0.00 | 141.4 | 0.01 | 40.6 | 19.3 | 96.9 | R143r | 0.14 | 6.9 | 0.03 | 24.9 | 0.2 | 100.0 |
| R101o | 0.03 | 30.5 | 0.51 | 6.4 | 20.3 | 100.0 | R144r | 0.20 | 24.4 | 0.04 | 52.0 | 0.2 | 98.7 |
| R102o | 0.01 | 81.6 | 0.21 | 16.3 | 20.4 | 99.9 | R145r | 0.02 | 27.9 | 0.00 | 72.2 | 0.2 | 97.8 |

| | | | | | | | | | | | | | |
|-------|------|-------|------|------|------|-------|-------|------|------|------|------|-----|------|
| R103o | 0.00 | 97.9 | 0.10 | 20.4 | 23.7 | 99.7 | R146r | 0.06 | 10.6 | 0.01 | 76.7 | 0.2 | 99.6 |
| R104o | 0.00 | 131.9 | 0.04 | 45.5 | 25.7 | 95.9 | R147r | 0.11 | 23.7 | 0.02 | 67.5 | 0.2 | 98.3 |
| R105o | 0.01 | 89.8 | 0.15 | 48.0 | 27.7 | 95.3 | R148r | 0.34 | 9.3 | 0.08 | 44.4 | 0.2 | 99.9 |
| R106o | 0.00 | 141.4 | 0.02 | 41.1 | 31.4 | 97.0 | R149r | 0.37 | 20.2 | 0.09 | 40.0 | 0.2 | 99.1 |
| R107o | 0.02 | 126.8 | 0.55 | 18.3 | 34.8 | 99.8 | R150r | 0.21 | 12.3 | 0.05 | 15.6 | 0.2 | 99.9 |
| R108o | 0.00 | 123.3 | 0.08 | 40.0 | 40.5 | 97.4 | R151r | 0.07 | 15.0 | 0.02 | 41.3 | 0.3 | 99.6 |
| R109o | 0.01 | 135.5 | 0.23 | 13.2 | 40.6 | 99.9 | R152r | 0.12 | 8.0 | 0.03 | 59.4 | 0.3 | 99.7 |
| R110o | 0.00 | 84.3 | 0.03 | 45.4 | 44.0 | 96.2 | R153r | 0.12 | 21.9 | 0.03 | 43.9 | 0.3 | 98.7 |
| R111o | 0.01 | 79.6 | 0.47 | 13.1 | 47.3 | 100.0 | R154r | 1.34 | 11.5 | 0.35 | 49.2 | 0.3 | 99.6 |
| R112o | 0.01 | 119.5 | 0.45 | 27.5 | 84.0 | 99.3 | R155r | 0.34 | 12.4 | 0.09 | 48.5 | 0.3 | 99.6 |
| R156r | 0.28 | 23.5 | 0.07 | 41.4 | 0.3 | 98.4 | R182r | 0.10 | 19.1 | 0.04 | 23.6 | 0.4 | 98.6 |
| R157r | 0.18 | 27.8 | 0.05 | 30.3 | 0.3 | 97.7 | R183r | 0.21 | 2.2 | 0.08 | 58.1 | 0.4 | 98.3 |
| R158r | 0.27 | 20.6 | 0.07 | 33.0 | 0.3 | 99.0 | R184r | 0.07 | 17.9 | 0.03 | 20.8 | 0.4 | 98.8 |
| R159r | 0.13 | 14.9 | 0.06 | 41.8 | 0.5 | 95.0 | R185r | 0.99 | 11.7 | 0.41 | 23.5 | 0.4 | 99.5 |
| R160r | 0.23 | 3.4 | 0.06 | 71.1 | 0.3 | 99.4 | R186r | 0.22 | 21.3 | 0.09 | 10.0 | 0.4 | 98.2 |
| R161r | 0.75 | 11.6 | 0.21 | 66.0 | 0.3 | 99.1 | R187r | 0.05 | 29.2 | 0.02 | 5.0 | 0.4 | 95.1 |
| R162r | 0.22 | 27.2 | 0.06 | 18.8 | 0.3 | 97.9 | R188r | 0.30 | 13.7 | 0.13 | 5.0 | 0.4 | 99.6 |
| R163r | 0.24 | 24.7 | 0.07 | 35.4 | 0.3 | 98.1 | R189r | 0.30 | 11.0 | 0.13 | 4.2 | 0.4 | 99.8 |
| R164r | 0.52 | 20.8 | 0.15 | 13.6 | 0.3 | 99.1 | R190r | 0.15 | 10.0 | 0.07 | 42.9 | 0.4 | 97.9 |
| R165r | 0.13 | 24.4 | 0.04 | 26.8 | 0.3 | 98.3 | R191r | 0.41 | 17.4 | 0.18 | 18.6 | 0.4 | 98.5 |
| R166r | 0.07 | 5.0 | 0.02 | 47.9 | 0.3 | 99.7 | R192r | 0.29 | 1.6 | 0.13 | 25.5 | 0.4 | 99.8 |
| R167r | 0.28 | 11.8 | 0.09 | 28.2 | 0.3 | 99.7 | R193r | 0.14 | 13.0 | 0.06 | 8.6 | 0.4 | 99.6 |
| R168r | 0.29 | 21.7 | 0.09 | 17.7 | 0.3 | 98.7 | R194r | 0.29 | 4.1 | 0.13 | 28.9 | 0.5 | 99.5 |
| R169r | 0.21 | 3.4 | 0.07 | 27.8 | 0.3 | 99.9 | R195r | 0.17 | 6.4 | 0.08 | 24.9 | 0.5 | 99.6 |
| R170r | 0.09 | 31.0 | 0.03 | 30.1 | 0.3 | 95.7 | R196r | 0.44 | 7.6 | 0.20 | 21.5 | 0.5 | 99.7 |
| R171r | 0.52 | 15.7 | 0.17 | 73.5 | 0.3 | 96.9 | R197r | 0.12 | 4.3 | 0.05 | 31.6 | 0.5 | 99.3 |
| R172r | 0.89 | 4.8 | 0.30 | 35.0 | 0.3 | 99.8 | R198r | 1.67 | 18.1 | 0.76 | 29.8 | 0.5 | 97.2 |
| R173r | 0.06 | 27.1 | 0.02 | 16.6 | 0.3 | 97.3 | R199r | 0.45 | 8.7 | 0.21 | 24.2 | 0.5 | 99.4 |
| R174r | 0.22 | 16.4 | 0.07 | 11.9 | 0.3 | 99.5 | R200r | 0.12 | 11.8 | 0.06 | 8.2 | 0.5 | 99.6 |
| R175r | 0.22 | 26.4 | 0.08 | 50.6 | 0.4 | 95.5 | R201r | 0.19 | 4.8 | 0.09 | 33.4 | 0.5 | 98.9 |
| R176r | 0.25 | 9.8 | 0.09 | 40.2 | 0.4 | 99.4 | R202r | 0.35 | 5.8 | 0.17 | 27.1 | 0.5 | 99.3 |
| R177r | 0.59 | 29.1 | 0.21 | 30.4 | 0.4 | 95.7 | R203r | 0.21 | 15.7 | 0.11 | 24.6 | 0.5 | 97.7 |
| R178r | 0.28 | 15.8 | 0.10 | 18.5 | 0.4 | 99.4 | R204r | 0.54 | 12.4 | 0.27 | 19.4 | 0.5 | 98.9 |
| R179r | 0.47 | 23.8 | 0.17 | 24.7 | 0.4 | 97.7 | R205r | 0.39 | 10.2 | 0.19 | 6.8 | 0.5 | 99.7 |
| R180r | 0.56 | 12.3 | 0.21 | 32.9 | 0.4 | 99.4 | R206r | 0.87 | 10.5 | 0.44 | 14.5 | 0.5 | 99.5 |
| R181r | 1.02 | 1.7 | 0.37 | 36.6 | 0.4 | 99.7 | R207r | 0.87 | 10.5 | 0.44 | 14.5 | 0.5 | 99.5 |

Table 4

Regulated protein spots after exposure of 3 days old zebrafish eleutheroembryos for a duration of 48 h to the EC₁₀ concentration of DNOC. 76 spots changed in expression. 56 of these protein spots were up-regulated and 20 down-regulated.

| Spot Nr. | Mean C | Rsd [%] | Mean EC ₁₀ | Rsd [%] | Ratio | t-Test | Spot |
|----------|--------|---------|-----------------------|---------|-------|--------|------|
| 34 | 0.01 | 119.7 | 0.06 | 26.6 | 10.81 | 98.88 | D34o |
| 35 | 0.01 | 141.4 | 0.07 | 33.1 | 11.98 | 97.90 | D35o |
| 36 | 0.00 | 141.4 | 0.02 | 32.9 | 12.40 | 97.99 | D36o |
| 37 | 0.00 | 82.8 | 0.09 | 11.6 | 26.09 | 99.97 | D37o |
| 38 | 0.00 | 139.6 | 0.09 | 15.7 | 41.79 | 99.90 | D38o |
| 39 | 0.15 | 23.6 | 0.32 | 6.0 | 2.10 | 99.57 | D39o |
| 40 | 0.04 | 33.6 | 0.13 | 18.5 | 3.11 | 98.90 | D40o |
| 41 | 0.06 | 20.0 | 0.18 | 10.0 | 3.13 | 99.87 | D41o |
| 42 | 0.11 | 41.0 | 0.40 | 4.0 | 3.59 | 99.89 | D42o |
| 43 | 0.08 | 50.2 | 0.32 | 17.0 | 3.81 | 99.17 | D43o |
| 44 | 0.08 | 98.2 | 0.34 | 14.9 | 4.17 | 98.18 | D44o |
| 45 | 0.05 | 60.2 | 0.23 | 24.1 | 4.21 | 98.17 | D45o |
| 46 | 0.02 | 57.5 | 0.08 | 30.2 | 4.61 | 97.26 | D46o |
| 47 | 0.03 | 59.2 | 0.15 | 35.0 | 4.81 | 96.08 | D47o |
| 48 | 0.06 | 76.4 | 0.34 | 21.8 | 6.09 | 99.07 | D48o |
| 49 | 0.04 | 64.8 | 0.27 | 26.0 | 6.91 | 98.81 | D49o |
| 50 | 0.01 | 6.5 | 0.11 | 19.1 | 8.04 | 99.71 | D50o |
| 51 | 0.01 | 67.7 | 0.09 | 27.6 | 10.30 | 98.92 | D51o |
| 52 | 0.01 | 62.8 | 0.12 | 25.1 | 10.68 | 99.23 | D52o |
| 53 | 0.02 | 85.9 | 0.06 | 23.5 | 3.41 | 95.60 | D53o |
| 54 | 0.01 | 86.0 | 0.03 | 1.2 | 3.43 | 96.76 | D54o |
| 55 | 0.04 | 76.7 | 0.16 | 26.3 | 3.67 | 96.26 | D55o |
| 56 | 0.02 | 99.0 | 0.10 | 18.8 | 3.91 | 97.11 | D56o |
| 57 | 0.05 | 67.3 | 0.20 | 7.5 | 4.03 | 99.56 | D57o |
| 58 | 0.13 | 34.4 | 0.27 | 8.1 | 2.04 | 98.15 | D58o |
| 59 | 0.00 | 95.0 | 0.02 | 43.8 | 32.69 | 96.45 | D59o |
| 60 | 0.03 | 32.8 | 0.06 | 13.9 | 2.07 | 97.41 | D60o |
| 61 | 0.03 | 31.3 | 0.09 | 5.7 | 3.24 | 99.90 | D61o |
| 62 | 0.20 | 32.8 | 0.43 | 6.9 | 2.18 | 99.01 | D62o |
| 63 | 0.22 | 11.7 | 0.48 | 19.4 | 2.19 | 98.14 | D63o |
| 64 | 0.17 | 41.8 | 0.37 | 15.5 | 2.25 | 96.88 | D64o |
| 65 | 0.03 | 42.0 | 0.07 | 11.1 | 2.26 | 97.80 | D65o |
| 66 | 0.16 | 44.7 | 0.36 | 12.3 | 2.30 | 97.42 | D66o |
| 67 | 0.39 | 36.7 | 0.92 | 23.9 | 2.36 | 95.38 | D67o |
| 68 | 0.07 | 47.8 | 0.17 | 3.6 | 2.36 | 98.34 | D68o |
| 69 | 0.08 | 51.6 | 0.25 | 31.5 | 3.29 | 95.10 | D69o |
| 70 | 0.01 | 43.9 | 0.04 | 14.5 | 2.75 | 98.59 | D70o |
| 71 | 0.11 | 74.5 | 0.29 | 12.0 | 2.75 | 96.13 | D71o |

| | | | | | | | |
|-----|------|-------|------|------|-------|-------|-------|
| 72 | 0.04 | 52.1 | 0.12 | 20.0 | 2.85 | 97.23 | D72o |
| 73 | 0.02 | 73.3 | 0.07 | 18.0 | 2.86 | 95.71 | D73o |
| 74 | 0.10 | 53.8 | 0.30 | 5.7 | 2.90 | 99.12 | D74o |
| 75 | 0.04 | 73.5 | 0.12 | 19.9 | 3.06 | 96.20 | D75o |
| 76 | 0.08 | 90.2 | 0.25 | 15.7 | 3.07 | 95.41 | D76o |
| 77 | 0.02 | 53.5 | 0.07 | 23.9 | 3.07 | 96.79 | D77o |
| 78 | 0.02 | 82.2 | 0.06 | 20.7 | 3.12 | 95.46 | D78o |
| 79 | 0.04 | 19.1 | 0.13 | 12.0 | 3.16 | 99.80 | D79o |
| 80 | 0.10 | 60.0 | 0.44 | 20.9 | 4.32 | 98.77 | D80o |
| 81 | 0.07 | 49.9 | 0.34 | 13.8 | 4.61 | 99.68 | D81o |
| 82 | 0.04 | 67.9 | 0.17 | 33.6 | 4.62 | 96.09 | D82o |
| 83 | 0.04 | 32.9 | 0.19 | 25.4 | 5.26 | 98.82 | D83o |
| 84 | 0.02 | 123.8 | 0.10 | 24.5 | 5.30 | 97.24 | D84o |
| 85 | 0.07 | 62.5 | 0.35 | 23.5 | 5.31 | 98.80 | D85o |
| 86 | 0.01 | 98.2 | 0.08 | 29.2 | 6.02 | 97.57 | D86o |
| 87 | 0.01 | 85.1 | 0.04 | 28.1 | 7.57 | 98.46 | D87o |
| 88 | 0.00 | 99.4 | 0.04 | 17.1 | 10.81 | 99.73 | D88o |
| 89 | 0.00 | 117.9 | 0.04 | 16.7 | 32.41 | 99.87 | D89o |
| 95 | 0.02 | 30.5 | 0.00 | 86.4 | 0.00 | 99.01 | D95r |
| 96 | 0.07 | 22.4 | 0.02 | 75.2 | 0.27 | 97.28 | D96r |
| 97 | 0.11 | 14.1 | 0.04 | 76.1 | 0.32 | 97.28 | D97r |
| 98 | 0.10 | 6.0 | 0.03 | 59.3 | 0.34 | 98.90 | D98r |
| 99 | 0.06 | 16.8 | 0.02 | 71.3 | 0.37 | 95.52 | D99r |
| 100 | 0.07 | 21.9 | 0.03 | 48.5 | 0.39 | 95.92 | D100r |
| 101 | 0.23 | 12.2 | 0.11 | 15.9 | 0.48 | 99.30 | D101r |
| 102 | 0.03 | 36.8 | 0.00 | 65.4 | 0.05 | 97.78 | D102r |
| 103 | 0.04 | 21.6 | 0.01 | 71.1 | 0.17 | 99.06 | D103r |
| 104 | 0.07 | 39.8 | 0.01 | 3.7 | 0.18 | 95.60 | D104r |
| 105 | 0.26 | 27.3 | 0.07 | 57.9 | 0.25 | 97.33 | D105r |
| 106 | 0.23 | 27.5 | 0.07 | 59.9 | 0.31 | 95.90 | D106r |
| 107 | 0.18 | 29.4 | 0.06 | 32.7 | 0.35 | 95.69 | D107r |
| 108 | 0.07 | 18.7 | 0.03 | 41.9 | 0.39 | 97.42 | D108r |
| 109 | 0.20 | 19.8 | 0.09 | 42.1 | 0.42 | 96.30 | D109r |
| 110 | 0.20 | 9.2 | 0.09 | 27.5 | 0.45 | 99.25 | D110r |
| 111 | 0.12 | 19.4 | 0.06 | 30.5 | 0.47 | 96.47 | D111r |
| 112 | 0.51 | 17.4 | 0.25 | 30.6 | 0.48 | 96.82 | D112r |
| 113 | 0.32 | 9.3 | 0.15 | 19.8 | 0.49 | 99.43 | D113r |
| 114 | 0.09 | 15.9 | 0.04 | 36.1 | 0.49 | 96.13 | D114r |

Table 5

Regulated spots after exposure of 3 days old zebrafish eleutheroembryos for a duration of 48 h to the EC₁₀ concentration of diclofenac. 47 spots changed in expression. 42 of these protein spots were up-regulated and 5 down-regulated.

| Spot Nr. | Mean C | Rsd [%] | Mean EC ₁₀ | Rsd [%] | ratio | t-Test | Spot |
|----------|--------|---------|-----------------------|---------|-------|--------|--------|
| 11 | 0.13 | 39.8 | 0.32 | 17.6 | 2.4 | 97.4 | Dic11o |
| 12 | 0.06 | 21.7 | 0.13 | 1.8 | 2.3 | 99.9 | Dic12o |
| 13 | 0.04 | 16.4 | 0.14 | 35.8 | 3.7 | 95.4 | Dic13o |
| 14 | 0.04 | 60.3 | 0.13 | 12.9 | 3.0 | 98.2 | Dic14o |
| 15 | 0.04 | 48.9 | 0.13 | 21.8 | 3.7 | 98.5 | Dic15o |
| 16 | 0.01 | 70.5 | 0.07 | 9.1 | 5.9 | 99.9 | Dic16o |
| 17 | 0.02 | 61.6 | 0.10 | 5.1 | 4.7 | 99.9 | Dic17o |
| 18 | 0.00 | 83.1 | 0.06 | 21.6 | 18.3 | 99.6 | Dic18o |
| 19 | 0.00 | 77.7 | 0.09 | 9.9 | 21.5 | 100.0 | Dic19o |
| 20 | 0.00 | 33.3 | 0.13 | 21.8 | 33.8 | 99.7 | Dic20o |
| 21 | 0.02 | 68.4 | 0.06 | 10.3 | 4.0 | 99.4 | Dic21o |
| 22 | 0.02 | 19.3 | 0.05 | 23.8 | 2.1 | 95.3 | Dic22o |
| 23 | 0.08 | 28.0 | 0.18 | 13.9 | 2.4 | 98.9 | Dic23o |
| 24 | 0.05 | 13.0 | 0.11 | 12.0 | 2.0 | 99.4 | Dic24o |
| 25 | 0.03 | 51.2 | 0.07 | 13.6 | 2.2 | 95.3 | Dic25o |
| 26 | 0.06 | 38.9 | 0.12 | 10.6 | 2.1 | 97.7 | Dic26o |
| 27 | 0.08 | 26.2 | 0.18 | 17.0 | 2.3 | 98.2 | Dic27o |
| 28 | 0.04 | 20.9 | 0.10 | 9.6 | 2.3 | 99.7 | Dic28o |
| 29 | 0.05 | 19.8 | 0.15 | 9.8 | 2.8 | 99.8 | Dic29o |
| 30 | 0.03 | 31.7 | 0.12 | 26.2 | 3.4 | 97.6 | Dic30o |
| 31 | 0.08 | 35.3 | 0.23 | 25.7 | 2.7 | 96.4 | Dic31o |
| 32 | 0.03 | 52.6 | 0.06 | 12.1 | 2.5 | 97.5 | Dic32o |
| 33 | 0.03 | 43.9 | 0.08 | 25.3 | 2.7 | 95.8 | Dic33o |
| 34 | 0.02 | 68.2 | 0.06 | 17.9 | 4.0 | 98.7 | Dic34o |
| 35 | 0.02 | 73.7 | 0.08 | 27.4 | 3.6 | 96.0 | Dic35o |
| 36 | 0.03 | 16.5 | 0.09 | 28.7 | 3.2 | 97.1 | Dic36o |
| 37 | 0.00 | 136.8 | 0.03 | 28.8 | 36.8 | 99.1 | Dic37o |
| 38 | 0.00 | 9.7 | 0.01 | 21.2 | 3.2 | 98.9 | Dic38o |
| 39 | 0.02 | 66.4 | 0.12 | 21.2 | 5.1 | 99.0 | Dic39o |
| 40 | 0.01 | 90.5 | 0.05 | 24.4 | 5.3 | 98.2 | Dic40o |
| 41 | 0.01 | 68.1 | 0.04 | 28.0 | 4.4 | 97.3 | Dic41o |
| 42 | 0.00 | 122.5 | 0.17 | 38.1 | 44.9 | 97.8 | Dic42o |
| 43 | 0.00 | 75.5 | 0.01 | 39.4 | 14.2 | 97.0 | Dic43o |
| 44 | 0.01 | 81.9 | 0.03 | 15.8 | 5.8 | 99.5 | Dic44o |
| 45 | 0.00 | 55.9 | 0.01 | 24.8 | 9.9 | 99.2 | Dic45o |
| 46 | 0.00 | 141.4 | 0.03 | 36.9 | 20.6 | 97.7 | Dic46o |
| 47 | 0.00 | 94.9 | 0.04 | 32.4 | 26.5 | 98.6 | Dic47o |
| 48 | 0.00 | 141.4 | 0.03 | 31.4 | 39.2 | 98.8 | Dic48o |

| | | | | | | | |
|----|------|------|------|------|----------|-------|--------|
| 49 | 0.00 | 0.00 | 0.01 | 11.7 | ∞ | 100.0 | Dic49o |
| 50 | 0.00 | 0.00 | 0.02 | 35.4 | ∞ | 98.4 | Dic50o |
| 51 | 0.17 | 35.1 | 0.45 | 10.2 | 2.7 | 99.4 | Dic51o |
| 52 | 0.02 | 10.7 | 0.01 | 79.0 | 0.3 | 96.6 | Dic52o |
| 53 | 0.09 | 11.9 | 0.08 | 53.0 | 0.9 | 30.1 | Dic53r |
| 54 | 0.12 | 3.4 | 0.06 | 27.9 | 0.5 | 99.2 | Dic54r |
| 55 | 0.03 | 26.4 | 0.00 | 0.00 | 0.0 | 99.4 | Dic55r |
| 56 | 0.90 | 17.6 | 0.39 | 40.4 | 0.4 | 96.8 | Dic56r |
| 57 | 0.12 | 18.8 | 0.05 | 51.4 | 0.4 | 96.3 | Dic57r |
| 58 | 0.03 | 21.2 | 0.01 | 52.2 | 0.2 | 98.8 | Dic58r |
| 59 | 0.04 | 14.7 | 0.01 | 49.4 | 0.3 | 98.8 | Dic59r |
| 60 | 0.06 | 10.1 | 0.03 | 40.3 | 0.5 | 97.4 | Dic60r |
| 61 | 0.19 | 25.4 | 0.09 | 13.8 | 0.5 | 95.3 | Dic61r |
| 62 | 0.19 | 23.1 | 0.09 | 3.9 | 0.5 | 97.1 | Dic62r |
| 63 | 0.12 | 19.3 | 0.06 | 38.2 | 0.5 | 95.7 | Dic63r |
| 64 | 0.17 | 8.5 | 0.08 | 15.4 | 0.5 | 99.7 | Dic64r |
| 65 | 0.39 | 5.5 | 0.19 | 18.1 | 0.5 | 99.8 | Dic65r |
| 66 | 0.09 | 18.0 | 0.04 | 18.1 | 0.4 | 98.4 | Dic66r |