Table S1. The toxicity and melanin inhibitory effect of A total of 123 plants from aerial parts (Table S1) were freshly collected from Taiwan Endemic Species Research Institute from 2012 to 2019, and on zebrafish (low and high concentration, N=3).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number | Name | Family | Low concentration(100 μg/mL) | High concentration(≥ 10 mg/mL) |
| Mortality rate (%) | Non-hatching rate (%) | Malformation rate (%) | Relative melanin content (%) | SD (%) | p-value | Concentration | Mortality rate (%) | Non-hatching rate (%) | Malformation rate (%) | Relative melanin content (%) | SD (%) | p-value |
| 1 | *Cordyceps militaris* (Fr.) Link | *Cordycipitaceae* | 0  | 0  | 33  | 303.6  | 223.7  | > 0.05 | 20.4 | 100  | 0  | 0  | NA | NA | NA |
| 2 | *Coix lacryma-jobi* L. | *Poaceae* | 0  | 0  | 0  | 216.2  | 120.4  | > 0.05 | 16.5 | 100  | 0  | 0  | NA | NA | NA |
| 3 | *Codonopsis pilosula* | *Campanulaceae* | 0  | 0  | 0  | 286.5  | 50.2  | > 0.05 | 14.5 | 100  | 0  | 0  | NA | NA | NA |
| 4 | *Atractylodes lancea* | *Asteraceae* | 0  | 0  | 33  | 235.3  | 195.6  | > 0.05 | 9.1 | 100  | 0  | 0  | NA | NA | NA |
| 5 | *Notopterygium incisum* | *Apiaceae* | 0  | 0  | 0  | 203.5  | 94.5  | > 0.05 | 9.6 | 100  | 0  | 0  | NA | NA | NA |
| 6 | *Salvia japonica* Thunb. ex Murray, | *Lamiaceae* | 0  | 0  | 0  | 213.3  | 62.7  | > 0.05 | 11.7 | 100  | 0  | 0  | NA | NA | NA |
| 7 | *Wolfiporia cocos* (Schw.) Ryv. & Gilbn. | *Polyporaceae* | 0  | 0  | 0  | 150.3  | 85.6  | > 0.05 | 14.4 | 0  | 0  | 0  | 27.5  | 9.8  | \*\* |
| 8 | *Polygala tenuifolia* | *polygalaceae* | 0  | 0  | 0  | 275.3  | 107.2  | > 0.05 | 8.5 | 100  | 0  | 0  | NA | NA | NA |
| 9 | *Polygonum multiflorum* Thunb. | *Polygonaceae* | 0  | 0  | 0  | 258.3  | 39.0  | > 0.05 | 9.7 | 100  | 0  | 0  | NA | NA | NA |
| 10 | *Pinellia ternata* (Thunb.) Breit. | *Araceae* | 0  | 0  | 0  | 106.6  | 18.2  | > 0.05 | 15.8 | 0  | 0  | 0  | 39.3  | 12.9  | \*\* |
| 11 | *Platycodon grandiflorum* (Jacq.) A. DC. | *Campanulaceae* | 0  | 0  | 0  | 380.6  | 37.6  | \*\* | 9.1 | 100  | 0  | 0  | NA | NA | NA |
| 12 | *Hedyotis diffusa* Willd. | *Rubiaceae* | 0  | 0  | 0  | 345.9  | 107.9  | \* | 11.2 | 0  | 67  | 0  | NA | NA | NA |
| 13 | *Aglaia formosana* Hayata | *Meliaceae* | 0  | 0  | 0  | 320.0  | 88.0  | \* | 12.5 | 100  | 0  | 0  | NA | NA | NA |
| 14 | *Litsea hypophaea* Hayata | *Lauraceae* | 0  | 0  | 0  | 239.0  | 147.9  | > 0.05 | 18.4 | 100  | 0  | 0  | NA | NA | NA |
| 15 | *Lycopodium serratum* Thumb. | *Lycopodiaceae* | 0  | 0  | 0  | 229.4  | 114.8  | > 0.05 | 10.6 | 100  | 0  | 0  | NA | NA | NA |
| 16 | *Elephantopus mollis H.B.K.* | *Asteraceae* | 0  | 0  | 0  | 191.4  | 150.5  | > 0.05 | 8.7 | 100  | 0  | 0  | NA | NA | NA |
| 17 | *Hedyotis diffusa* Willd. | *Rubiaceae* | 0  | 0  | 0  | 253.5  | 193.1  | > 0.05 | 11.6 | 100  | 0  | 0  | NA | NA | NA |
| 18 | *Cajanus cajan* (L.) Millsp. | *Fabaceae*  | 0  | 0  | 0  | 243.5  | 98.8  | > 0.05 | 12.7 | 100  | 0  | 0  | NA | NA | NA |
| 19 | *Mallotus repandus* (Willd.) Mull. Arg. | *Euphorbiaceae* | 0  | 0  | 0  | 162.9  | 61.9  | > 0.05 | 9.1 | 100  | 0  | 0  | NA | NA | NA |
| 20 | *Tithonia diversifolia* (Hemsl.) A. Gray | *Asteraceae* | 0  | 0  | 0  | 304.3  | 108.3  | > 0.05 | 12.4 | 100  | 0  | 0  | NA | NA | NA |
| 21 | *Desmodium renifolium* (L.) Schindler | *Fabaceae* | 0  | 0  | 0  | 299.5  | 47.7  | \* | 9.9 | 100  | 0  | 0  | NA | NA | NA |
| 22 | *Scutellaria barbata* D. Don | *Lamiaceae* | 0  | 0  | 0  | 285.9  | 223.4  | > 0.05 | 13 | 100  | 0  | 0  | NA | NA | NA |
| 23 | *Blumea riparia* (Blume) DC. var. megacephala Randeria | *Asteraceae* | 0  | 0  | 0  | 210.7  | 135.8  | > 0.05 | 9.8 | 100  | 0  | 0  | NA | NA | NA |
| 24 | *Cuscuta australis* R. Br. | *Convolvulaceae* | 0  | 0  | 0  | 274.7  | 178.3  | > 0.05 | 9.0 | 100  | 0  | 0  | NA | NA | NA |
| 25 | White silkworm | *Bombycoidea* | 0  | 0  | 0  | 372.2  | 143.2  | \* | 9.0 | 100  | 0  | 0  | NA | NA | NA |
| 26 | *Ludwigia octovalvis* (Jacq.) P. H. Raven | *Onagraceae* | 0  | 0  | 0  | 81.8  | 18.5  | > 0.05 | 10.2 | 100  | 0  | 0  | NA | NA | NA |
| 27 | *Eupatorium formosanum* Hayata | *Asteraceae* | 0  | 0  | 33  | 245.8  | 131.6  | > 0.05 | 14.3 | 100  | 0  | 0  | NA | NA | NA |
| 28 | *Alternanthera Payonychioide*s St. | *Amaranthaceae* | 0  | 0  | 33  | 220.0  | 165.1  | > 0.05 | 10.3 | 100  | 0  | 0  | NA | NA | NA |
| 29 | *Anoectochilus formosanus* Hayata | *Orchidaceae* | 0  | 0  | 0  | 122.8  | 23.5  | > 0.05 | 10.7 | 0  | 0  | 0  | 55.4  | 12.8  | \* |
| 30 | *Mimosa pudica* L. | *Fabaceae* | 0  | 0  | 100  | NA | NA | NA | 12.7 | 100  | 0  | 0  | NA | NA | NA |
| 31 | *Ixeris chinensis* (Thunb.) Nakai | *Arecaceae* | 0  | 0  | 0  | 36.3  | 37.1  | > 0.05 | 13.5 | 0  | 0  | 33  | 71.4  | 56.8  | > 0.05 |
| 32 | *Vernonia patula* (Dryand.) Merr. | *Asteraceae* | 0  | 0  | 0  | 92.7  | 39.0  | > 0.05 | 15.2 | 0  | 0  | 100  | 5.0  | 7.0  | \* |
| 33 | *Mikania micrantha* Kunth | *Asteraceae* | 0  | 0  | 0  | 114.0  | 38.2  | > 0.05 | 10.4 | 100  | 0  | 0  | NA | NA | NA |
| 34 | *Areca catechu* L. | *Arecaceae* | 33  | 0  | 0  | 66.2  | 61.4  | > 0.05 | 10.8 | 100  | 0  | 0  | NA | NA | NA |
| 35 | *Peperomia dindigulensis* Miq. | *Piperaceae* | 0  | 0  | 0  | 61.3  | 32.1  | > 0.05 | 11.9 | 100  | 0  | 0  | NA | NA | NA |
| 36 | *Clerodendrum cyrtophyllum* Turcz. | *Lamiaceae* | 100  | 0  | 0  | NA | NA | NA | 12.7 | 100  | 0  | 0  | NA | NA | NA |
| 37 | *Pittosporum daphniphylloide*s Hayata | *Pittosporaceae* | 0  | 0  | 0  | 92.6  | 36.6  | > 0.05 | 11.4 | 100  | 0  | 0  | NA | NA | NA |
| 38 | *Aucuba chinensis* Benth. | *Cornaceae* | 0  | 0  | 33  | 118.2  | 39.4  | > 0.05 | 12.4 | 0  | 0  | 33  | 80.5  | 28.9  | > 0.05 |
| 39 | *Solanum violaceum* Ortega | *Solanaceae* | 0  | 0  | 0  | 137.6  | 42.0  | > 0.05 | 14.5 | 100  | 0  | 0  | NA | NA | NA |
| 40 | *Lindera communis* Hemsl. | *Lauraceae*  | 0  | 0  | 0  | 64.7  | 37.0  | > 0.05 | 11.4 | 100  | 0  | 0  | NA | NA | NA |
| 41 | *Glossogyne tenuifolia* (Labill.) Cass. | *Asteraceae* | 0  | 0  | 0  | 62.4  | 38.0  | > 0.05 | 11.7 | 100  | 0  | 0  | NA | NA | NA |
| 42 | *Urena lobata* L. | *Malvaceae* | 0  | 0  | 0  | 130.1  | 36.7  | > 0.05 | 15.2 | 0  | 0  | 0  | 63.0  | 19.4  | \* |
| 43 | *Machilus zuihensis* Hayata  | *Lauraceae*  | 0  | 0  | 33  | 96.3  | 62.0  | > 0.05 | 11.7 | 100  | 0  | 0  | NA | NA | NA |
| 44 | *Ilex asprella* (Hook. & Arn.) Champ. | *Aquifoliaceae* | 33  | 0  | 0  | 108.0  | 50.8  | > 0.05 | 15.0 | 100  | 0  | 0  | NA | NA | NA |
| 45 | *Ageratum houstonianum* Mill. | *Asteraceae* | 0  | 0  | 0  | 138.2  | 14.0  | > 0.05 | 13.4 | 100  | 0  | 0  | NA | NA | NA |
| 46 | *Polygonum orientale* | *Polygonaceae* | 0  | 0  | 0  | 117.1  | 42.4  | > 0.05 | 11.1 | 100  | 0  | 0  | NA | NA | NA |
| 47 | *Ageratum houstonianum* Mill. | *Asteraceae* | 0  | 0  | 0  | 113.7  | 36.8  | > 0.05 | 12.1 | 0  | 0  | 0  | 19.0  | 20.0  | \*\* |
| 48 | *Chromolaena odorata* (L.) R. M. King & H. Rob. | *Asteraceae* | 0  | 0  | 0  | 96.0  | 37.8  | > 0.05 | 13.5 | 100  | 0  | 0  | NA | NA | NA |
| 49 | *Amaranthus patulus* Betoloni | *Amaranthaceae* | 0  | 0  | 0  | 119.4  | 31.0  | > 0.05 | 13.0 | 100  | 0  | 0  | NA | NA | NA |
| 50 | *Celosia argentea* L. | *Amaranthaceae* | 0  | 0  | 0  | 112.7  | 48.6  | > 0.05 | 11.2 | 33  | 33  | 33  | NA | NA | NA |
| 51 | *Cleome rutidosperma* DC. | *Capparaceae* | 0  | 0  | 0  | 94.8  | 53.3  | > 0.05 | 11.4 | 100  | 0  | 0  | NA | NA | NA |
| 52 | *Coleus amboinicus* Lour. | *Lamiaceae* | 0  | 0  | 0  | 101.5  | 35.8  | > 0.05 | 14.7 | 100  | 0  | 0  | NA | NA | NA |
| 53 | *Pennisetum purpureum* Schumach. | *Poaceae* | 0  | 0  | 0  | 153.1  | 29.8  | > 0.05 | 11.5 | 0  | 0  | 0  | 49.7  | 4.1  | \*\* |
| 54 | *Litsea akoensis* Hayata var. *chitouchiaoensis* J. C. Liao | *Lauraceae* | 0  | 0  | 0  | 140.8  | 26.7  | > 0.05 | 10.8 | 0  | 100  | 0  | NA | NA | NA |
| 55 | *Houttuynia cordata* Thunb. | *Saururaceae* | 0  | 0  | 0  | 109.6  | 49.3  | > 0.05 | 11.5 | 100  | 0  | 0  | NA | NA | NA |
| 56 | *Medinilla formosana* Hayata | *Melastomataceae* | 0  | 0  | 0  | 90.8  | 23.9  | > 0.05 | 14.0 | 100  | 0  | 0  | NA | NA | NA |
| 57 | *Sedum morrisonense* Hayata | *Crassulaceae* | 0  | 0  | 33  | 93.3  | 57.7  | > 0.05 | 14.0 | 0  | 0  | 33  | 32.2  | 42.2  | > 0.05 |
| 58 | *Valeriana fauriei* Briquet | *Valerianaceae* | 0  | 0  | 0  | 106.0  | 40.1  | > 0.05 | 10.7 | 100  | 0  | 0  | NA | NA | NA |
| 59 | *Eupatorium clematideum* (Wall. ex DC.) Sch. Bip. var. *gracillimum* (Hayata) C.-I Peng & S. W. Chung | *Asteraceae* | 0  | 0  | 0  | 130.4  | 63.0  | > 0.05 | 17.0 | 100  | 0  | 0  | NA | NA | NA |
| 60 | *Celtis sinensis* Pers | *Ulmaceae* | 0  | 0  | 0  | 88.6  | 40.8  | > 0.05 | 11.7 | 0  | 0  | 33  | 58.9  | 38.2  | > 0.05 |
| 61 | *Melia azedarach* Linn. | *Meliaceae* | 0  | 0  | 0  | 144.0  | 57.3  | > 0.05 | 13.2 | 100  | 0  | 0  | NA | NA | NA |
| 62 | *Urceola rosea (*Hook. & Arn.) D.J. Middleton | *Apocynaceae* | 0  | 0  | 0  | 147.0  | 39.0  | > 0.05 | 12.7 | 100  | 0  | 0  | NA | NA | NA |
| 63 | *Sesuvium portulacastrum* (L.) L. | *Aizoaceae* | 0  | 0  | 0  | 98.3  | 64.9  | > 0.05 | 15.1 | 100  | 0  | 0  | NA | NA | NA |
| 64 | *Eleocharis tetraquetra* Nees ex Wight | *Cyperaceae* | 0  | 0  | 0  | 120.2  | 15.2  | > 0.05 | 12.1 | 0  | 100  | 0  | NA | NA | NA |
| 65 | *Excoecaria agallocha* L. | *Euphorbiaceae* | 0  | 0  | 0  | 97.9  | 34.1  | > 0.05 | 12.0 | 100  | 0  | 0  | NA | NA | NA |
| 66 | *Excoecaria kawakamii* Hayata | *Euphorbiaceae* | 0  | 0  | 0  | 158.4  | 28.9  | > 0.05 | 12.1 | 100  | 0  | 0  | NA | NA | NA |
| 67 | *Cinnamomum osmophloeum* Kanehira | *Lauraceae* | 0  | 0  | 0  | 115.3  | 81.6  | > 0.05 | 10.9 | 100  | 0  | 0  | NA | NA | NA |
| 68 | *Eriobotrya deflexa* (Hemsl.) Nakai f. *deflexa* (Hemsl.) Nakai  | *Rosaceae* | 0  | 0  | 0  | 118.0  | 10.5  | > 0.05 | 16.5 | 100  | 0  | 0  | NA | NA | NA |
| 69 | *Duchesnea indica* (Andr.) Focke | *Rosaceae* | 0  | 0  | 0  | 73.0  | 14.8  | > 0.05 | 12.4 | 0  | 67  | 0  | NA | NA | NA |
| 70 | *Hibiscus taiwanensis* Hu | *Malvaceae* | 0  | 0  | 0  | 124.2  | 43.7  | > 0.05 | 10.7 | 100  | 0  | 0  | NA | NA | NA |
| 71 | *Artemisia indica* Willd. | *Asteraceae* | 0  | 0  | 0  | 106.7  | 50.1  | > 0.05 | 11.2 | 0  | 100  | 0  | NA | NA | NA |
| 72 | *Lonicera japonica* Thunb. | *Caprifoliaceae* | 0  | 0  | 0  | 170.2  | 51.1  | > 0.05 | 13.1 | 100  | 0  | 0  | NA | NA | NA |
| 73 | *Saxifraga stolonifera* Meerb. | *Saxifragaceae* | 0  | 0  | 0  | 140.7  | 22.7  | > 0.05 | 12.7 | 0  | 100  | 0  | NA | NA | NA |
| 74 | *Ajuga taiwanensis* Nakai ex Murata | *Lamiaceae* | 0  | 0  | 0  | 120.5  | 24.4  | > 0.05 | 13.9 | 100  | 0  | 0  | NA | NA | NA |
| 75 | *Bischofia javanica* Bl. | *Euphorbiaceae* | 0  | 0  | 0  | 176.3  | 21.7  | > 0.05 | 14.8 | 100  | 0  | 0  | NA | NA | NA |
| 76 | *Plantago asiatica* L. | *Plantaginaceae* | 0  | 0  | 0  | 129.7  | 35.3  | > 0.05 | 11.8 | 0  | 0  | 67  | 31.7  | 32.0  | \* |
| 77 | *Paederia foetida* L. | *Rubiaceae* | 0  | 0  | 0  | 140.7  | 17.5  | > 0.05 | 12.8 | 0  | 0  | 0  | 43.4  | 18.5  | \*\* |
| 78 | *Youngia japonica* (L.) DC. subsp. *Japonica* (L.) DC. | *Asteraceae* | 100  | 0  | 0  | NA | NA | NA | 17.5 | 100  | 0  | 0  | NA | NA | NA |
| 79 | *Kalanchoe garambiensis* Kudo | *Crassulaceae* | 0  | 0  | 33  | 59.9  | 1.6  | > 0.05 | 13.9 | 0  | 0  | 0  | 58.2  | 38.9  | > 0.05 |
| 80 | *Eclipta prostrata* (L.) L. | *Asteraceae* | 0  | 0  | 0  | 143.2  | 47.1  | > 0.05 | 14.7 | 100  | 0  | 0  | NA | NA | NA |
| 81 | *Cerbera manghas* L. | *Apocynaceae* | 0  | 0  | 0  | 126.0  | 37.1  | > 0.05 | 11.0 | 0  | 0  | 0  | 35.5  | 10.3  | \*\* |
| 82 | *Hexagonia apiaria* Pers. | *Polyporaceae* | 0  | 0  | 0  | 86.9  | 21.6  | > 0.05 | 10.7 | 0  | 0  | 0  | 34.2  | 21.3  | \* |
| 83 | *Leucaena leucocephala* (Lam.) de Wit | *Fabaceae* | 0  | 0  | 0  | 124.7  | 15.2  | > 0.05 | 10.5 | 100  | 0  | 0  | NA | NA | NA |
| 84 | *Cardiospermum halicacabum* L. | *Sapindaceae* | 0  | 0  | 0  | 138.5  | 25.0  | > 0.05 | 11.9 | 100  | 0  | 0  | NA | NA | NA |
| 85 | *Wedelia trilobata* (L.) Hitchc. | *Asteraceae* | 0  | 0  | 0  | 121.1  | 51.8  | > 0.05 | 10.7 | 0  | 100  | 0  | NA | NA | NA |
| 86 | *Pistia stratiotes* L. | *Araceae* | 0  | 0  | 0  | 160.6  | 42.5  | > 0.05 | 10.8 | 0  | 33  | 0  | 66.3  | 59.4  | > 0.05 |
| 87 | *Oxalis corymbose* DC. | *Oxalidaceae* | 0  | 0  | 0  | 105.0  | 12.9  | > 0.05 | 13.5 | 100  | 0  | 0  | NA | NA | NA |
| 88 | *Oenothera laciniate* J. Hill | *Onagraceae* | 0  | 0  | 0  | 125.5  | 78.4  | > 0.05 | 11.4 | 0  | 100  | 0  | NA | NA | NA |
| 89 | *Ipomoea cairica* (L.) Sweet | *Convolvulaceae* | 0  | 0  | 0  | 160.2  | 19.4  | > 0.05 | 11.1 | 100  | 0  | 0  | NA | NA | NA |
| 90 | *Aquilaria malaccensis* | *Thymelaeaceae* | 0  | 0  | 0  | 153.0  | 51.4  | > 0.05 | 12.9 | 100  | 0  | 0  | NA | NA | NA |
| 91 | *Aquilaria malaccensis* | *Thymelaeaceae* | 0  | 0  | 0  | 131.0  | 40.6  | > 0.05 | 12.3 | 100  | 0  | 0  | NA | NA | NA |
| 92 | *Hovenia dulcis* Thunb. | *Rhamnaceae* | 0  | 0  | 0  | 161.5  | 51.3  | > 0.05 | 11.4 | 0  | 0  | 0  | 89.4  | 25.1  | > 0.05 |
| 93 | *Shortia rotundifolia* (Maxim.) Makino | *Diapensiaceae* | 0  | 0  | 0  | 183.6  | 23.4  | \* | 13.2 | 100  | 0  | 0  | NA | NA | NA |
| 94 | *Desmodium gangeticum* (L.) DC. | *Fabaceae* | 0  | 0  | 0  | 199.0  | 22.8  | \* | 11.6 | 0  | 0  | 0  | 82.6  | 26.5  | > 0.05 |
| 95 | *Pyracantha koidzumii* (Hayata) Rehder | *Rosaceae* | 0  | 0  | 0  | 145.0  | 47.2  | > 0.05 | 14.1 | 100  | 0  | 0  | NA | NA | NA |
| 96 | *Pinus morrisonicola* Hayata | *Pinaceae* | 0  | 0  | 0  | 90.6  | 39.8  | > 0.05 | 13.5 | 100  | 0  | 0  | NA | NA | NA |
| 97 | *Myrica rubra* Sieb. & Zucc. var.*acuminata* Nakai | *Myricacea* | 0  | 0  | 0  | 106.6  | 59.8  | > 0.05 | 13.0 | 100  | 0  | 0  | NA | NA | NA |
| 98 | *Limonium sinense* (Girard) Kuntze | *Plumbaginaceae* | 0  | 0  | 0  | 120.1  | 18.6  | > 0.05 | 13.6 | 100  | 0  | 0  | NA | NA | NA |
| 99 | *Zehneria mucronata* (Bl.) Miq. | *Cucurbitaceae* | 0  | 0  | 0  | 169.5  | 35.9  | \* | 13.9 | 100  | 0  | 0  | NA | NA | NA |
| 100 | *Cycas taitungensis* C. F. Shen, K. D. Hill, C. H. Tsou & C. J. Chen | *Cycadaceae* | 0  | 0  | 0  | 121.4  | 37.3  | > 0.05 | 11.9 | 100  | 0  | 0  | NA | NA | NA |
| 101 | *Arenga tremula* (Blanco) Becc. | *Arecaceae* | 0  | 0  | 0  | 77.0  | 17.2  | > 0.05 | 10.7 | 0  | 33  | 0  | 32.8  | 30.4  | > 0.05 |
| 102 | *Siegesbeckia orientalis* L. | *Asteraceae* | 0  | 0  | 0  | 80.8  | 8.1  | > 0.05 | 13.6 | 100  | 0  | 0  | NA | NA | NA |
| 103 | *Sedum* *formosanum* N.E. Br. | *Crassulaceae* | 0  | 0  | 0  | 130.6  | 26.1  | > 0.05 | 11.0 | 0  | 0  | 0  | 16.2  | 18.4  | \*\* |
| 104 | *Calophyllum blancoi* Planchon | *Clusiaceae* | 0  | 0  | 0  | 122.6  | 18.0  | > 0.05 | 12.6 | 100  | 0  | 0  | NA | NA | NA |
| 105 | *Rhaphiolepis indica* (L.) Lindl. ex Ker var. *tashiroi* Hayata ex Matsum. & Hayata | *Rosaceae* | 0  | 0  | 0  | 135.6  | 18.1  | > 0.05 | 12.0 | 100  | 0  | 0  | NA | NA | NA |
| 106 | *Cryptocarya elliptifolia* Merr. | *Lauraceae* | 0  | 0  | 0  | 101.5  | 48.8  | > 0.05 | 12.4 | 100  | 0  | 0  | NA | NA | NA |
| 107 | *Callicarpa formosana* Rolfe var. *formosana* Rolfe | *Verbenaceae* | 0  | 0  | 0  | 110.3  | 65.1  | > 0.05 | 10.3 | 100  | 0  | 0  | NA | NA | NA |
| 108 | *Rosa laevigata* Michx. | *Rosaceae* | 0  | 0  | 0  | 155.6  | 16.6  | \* | 10.3 | 100  | 0  | 0  | NA | NA | NA |
| 109 | *Viburnum luzonicum* Rolfe | *Adoxaceae* | 0  | 0  | 0  | 117.3  | 51.4  | > 0.05 | 11.3 | 100  | 0  | 0  | NA | NA | NA |
| 110 | *Rubia akane* Nakai var. *akane* Nakai | *Rubiaceae* | 0  | 0  | 0  | 102.5  | 31.8  | > 0.05 | 11.3 | 67  | 33  | 0  | NA | NA | NA |
| 111 | *Cleyera japonica* Thunb. var. *morii* (Yamamoto) Masam. | *Theaceae* | 0  | 0  | 0  | 111.9  | 25.7  | > 0.05 | 11.4 | 0  | 100  | 0  | NA | NA | NA |
| 112 | *Berberis kawakamii* Hayata | *Berberidaceae* | 0  | 0  | 0  | 122.1  | 44.3  | > 0.05 | 11.9 | 100  | 0  | 0  | NA | NA | NA |
| 113 | *Toona sinensis* (Juss.) M. Roem. | *Meliaceae* | 0  | 0  | 0  | 94.4  | 23.2  | > 0.05 | 12.6 | 100  | 0  | 0  | NA | NA | NA |
| 114 | *Tinospora dentata* Diels | *Menispermaceae* | 0  | 0  | 0  | 55.2  | 33.9  | > 0.05 | 12.0 | 100  | 0  | 0  | NA | NA | NA |
| 115 | *Actinostemma tenerum* Griff. | *Cucurbitaceae* | 0  | 0  | 0  | 58.1  | 3.4  | > 0.05 | 11.1 | 100  | 0  | 0  | NA | NA | NA |
| 116 | *Liquidambar formosana* Hance | *Altingiaceae* | 0  | 0  | 0  | 68.0  | 49.1  | > 0.05 | 10.5 | 100  | 0  | 0  | NA | NA | NA |
| 117 | *Mahonia oiwakensis* Hayata | *Berberidaceae* | 0  | 0  | 0  | 118.5  | 57.0  | > 0.05 | 10.3 | 0  | 0  | 0  | 117.9  | 24.6  | > 0.05 |
| 118 | *Myristica ceylanica* A. DC. var. *cagayanensis* (Merr.) J. Sinclair | *Myristicaceae* | 0  | 0  | 0  | 53.2  | 38.5  | > 0.05 | 11.5 | 100  | 0  | 0  | NA | NA | NA |
| 119 | *Alpinia shimadae* Hayata | *Zingiberaceae*  | 0  | 0  | 0  | 92.2  | 40.8  | > 0.05 | 14.5 | 0  | 0  | 0  | 24.6  | 13.3  | \*\* |
| 120 | *Eriobotrya deflexa* (Hemsl.) Nakai *forma koshunensis* (Kanehira & Sasaki) Li | *Rosaceae* | 0  | 0  | 0  | 103.4  | 34.9  | > 0.05 | 11.7 | 100  | 0  | 0  | NA | NA | NA |
| 121 | *Tridax procumbens* L. | *Asteraceae* | 0  | 0  | 0  | 95.8  | 64.0  | > 0.05 | 10.7 | 100  | 0  | 0  | NA | NA | NA |
| 122 | *Rhodiola rosea* L. | *Crassulaceae* | 0  | 0  | 0  | 136.7  | 63.9  | > 0.05 | NA | NA  | NA  | NA  | NA | NA | NA |
| 123 | *Magnolia officinalis* | *Magnoliaceae* | 100  | 0  | 0  | NA | NA | NA | 10.5 | 100  | 0  | 0  | NA | NA | NA |

The relative melanin concentration was calculated from 3 zebrafishes (N=3). Results were expressed as % of control and mean ± S.E. \* p-value < 0.05, \*\* p-value < 0.01, \*\*\* p-value < 0.001, NA: not analyzed.