

## 제브라피쉬에서의 제주도 천연추출물의 항스트레스 효과

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## Anti-stress Effects of Natural Products from Jeju Island in Zebrafish

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**Objective:** In this study, the anti-stress effects of extract of *Hydrangeae Dulcis Folium* (EHDF) or ethalonic extract of *Opuntiaficus-indica* (EOF) of natural extracts from Jeju Island were investigated. **Methods:** We performed measurement of whole-body cortisol level and behavioral experiments including the novel tank test (NTT) or the open field test (OFT) to assess stress responses in zebrafish. To induce physical stress, we used the net handling stress (NHS). Fish were treated with EOF or EHDF for 6 min before they were exposed to stress. And then, we sacrificed fish for collecting body fluid from whole-body or conducted behavioural tests, including novel tank test and open field test, were evaluated to observe anxiety-like behaviours and locomotion. We used the cortisol enzyme-linked immunoassay kit to measure the amount of cortisol in each zebrafish sample. **Results:** The results indicate that increased anxiety-like behaviours in novel tank test and open field test under stress were prevented by treatment with both EOF and EHDF ( $P < 0.05$ ). Moreover, compared with the unstressed group, which was not treated with NHS, the whole-body cortisol level was significantly increased by treatment with NHS. Compared with the NHS-treated stressed control group, pre-treatment with each EHDF and EOF for 6 min significantly prevented the NHS-increased whole-body cortisol level ( $P < 0.05$ ). **Conclusions:** In conclusion these results suggest that both EOF and EHDF pretreatment may prevent stress responses and that its mechanism of action may be related to its positive effects on cortisol release.

**Key words:** Net handling stress, Zebrafish, *Opuntiaficus-indica*, Whole-body cortisol, Open field test, *Hydrangeae Dulcis Folium*, *Opuntiaficus-indica*

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