Hormonal and illuminational control of embryonic diapause termination in dormant cysts of *Artemia franciscana*

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Embryonic diapause termination (EDT) of dormant *Artemia* cysts has been investigated, and environmental cues, desiccation, cold, and H_2O_2 were estimated. However, other chemicals have been scarcely investigated, because the cyst is impermeable to nonvolatiles. Our hypothesis is hydrophobic volatiles might penetrate the cyst-shell and affect EDT. Laboratory-produced non-dried dormant *Artemia* cysts were kept for 3 months at 28 degrees Celsius under constant light (900~9,000lx) in 2% sea salt solution containing juvenile hormone III (JH: 100~5,000ug/L) and JH analogue, methoprene (Met) (100~5,000ug/L), respectively. Two sets of cysts were prepared: new-spawned were age of within 10 days and 40-days kept were age of 40 days after the spawning. They had been kept in refrigerator before the rearing. JH promoted hatching of the two sets and facilitated EDT. Met suppressed the hatching of the new-spawned cysts and depressed EDT. While, the 40-days kept cysts were activated by Met and EDT was accelerated. Through these experiments, it was evidenced that illuminance positively controlled EDT.