

## DAPHNIA: A RISING MODEL ORGANISM

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*Daphnia* is a Crustacean animal mainly found in fresh waters. It is defined as indicator species and provides very important datum for fresh water ecology researches. Also, it is an ideal model organism for laboratory researches, because it is tiny, easily produced in laboratories and not costly. Actually, it is already used in acute and chronic toxicity experiments commonly. Besides, its usage increases dramatically in experiments for investigation of environmental stress factors effects on development, life story, longevity and metabolic changes. It provides conveniences to researchers, because its development easily observed via its transparent body structure, it produce numerous daughters in a short time gap and it gives drastic morphological changes against changing environmental factors. Furthermore, comprehensive genome analysis of *Daphnia* has been published in 2011 and 30,000 gene was determined. This enormous number indicates that *Daphnia* have much more gene from many of animals and 36% of these genes are found only *Daphnia*. This excessively exclusive genome will open new gates for many of researches. As well as all of them, *Daphnia* reproduce parthenogenetically, so mother produces her clone daughters, thus obtaining clone generation is possible. Through this reproduction type, it possibly will be an essential model organism for epigenetic researches. When this clone individuals growth in different conditions, developmental, physiological and molecular differences will be emerge and this emerging differences' connections with RNAi activities, DNA methylation and histone modification can be investigated. Shortly, it can be said that, *Daphnia* is rising model organism for the biosciences of the future

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