Research for the development of the transformation method with *Haematococcus* pluvialis using *Agrobacterium*

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The eukaryotic microalgae, *Haematococcus pluvialis* is the valuable and industrial microorganism to produce the most yield of astaxanthin in carotenoid. But, it is hard for many researchers to get the transformant with the transgene, successfully integrated into genome to show a stable expression. The two green algae, *Chlamydomonas reinhardtii* and *Haematococcus pluvialis* have similar genotype from the evolutionary same ancestor. However, at the former, it could be possible for getting transformant by traditional methods like glass beads, electroporation and bombardment. But, at the latter, there's not reported yet. That trial will be challenged to discover the stably–integrated exogenic transformant to break down the self–guarding mechanism with the new technique using the *Agrobacterium*-mediated transformation.