

# Single-Embryo Metabolomics and Systematic Prediction of Developmental Stage in Zebrafish<sup>§</sup>

Shunsuke Hayashi<sup>a</sup>, Mako Yoshida<sup>a</sup>, Toshinobu Fujiwara<sup>b,c</sup>, Shingo Maegawa<sup>d</sup>, and Eiichiro Fukusaki<sup>a,\*</sup>

<sup>a</sup> Department of Biotechnology, Graduate School of Engineering, Osaka University, Yamadaoka, Suita 565-0871, Japan. Fax: +81-(0)6-6879-7424.

E-mail: fukusaki@bio.eng.osaka-u.ac.jp

<sup>b</sup> Department of Chemical Science and Engineering, Kobe University, 1-1 Rokkodaicho, Nada-ku, Kobe 657-8501, Japan

<sup>c</sup> Precursory Research for Embryonic Science and Technology, Japan Science and Technology Agency, 4-1-8 Honcho, Kawaguchi, Saitama 332-0012, Japan

<sup>d</sup> Department of Intelligence Science and Technology, Graduate School of Informatics, Kyoto University, Yoshida-Honmachi, Sakyo, Kyoto 606-8501, Japan

\* Author for correspondence and reprint requests

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Metabolites, the end products of gene expression in living organisms, are tightly correlated with an organism's development and growth. Thus, metabolic profiling is a potentially important tool for understanding the events that have occurred in cells, tissues, and individual organisms. Here, we present a method for predicting the developmental stage of zebrafish embryos using novel metabolomic non-target fingerprints of “single-embryos”. With this method, we observed the rate of development at different temperatures. Our results suggest that this method allows us to analyse the condition, or distinguish the genotype, of single-embryos before expression of their ultimate phenotype.

*Key words:* Single-Embryo, Embryogenesis, Metabolomics