WE130 Gene transcription profiles during the first 32 days of zebrafish development: thyroid, steroid, digestive and biotransformation systems L. Vergauwen, E.D. Michiels, University of Antwerp / Zebrafishlab Dept Veterinary Sciences; E. Bagci, University of Antwerp / Zebrafishlab Dept of Veterinary Sciences; I. Gabriëls, J. Periz, University of Antwerp / Zebrafishlab Dept Veterinary Sciences; C. Pype, University of Antwerp / Department of Veterinary Sciences; E. Stinckens, University of Antwerp; E. Verbueken, S. Van Cruchten, University of Antwerp / Department of Veterinary Sciences; D. Knapen, University of Antwerp / Zebrafishlab Dept Veterinary Sciences. The zebrafish has become an important model for ecotoxicity testing. Especially the zebrafish embryo is increasingly used for the development of alternative tests since early life stages of fish are not considered laboratory animals according to EU legislation. In addition to observing apical endpoints such as mortality, growth and reproduction, the focus on mechanistically understanding toxicity is increasing, e.g. in the context of AOP development. This demand is also increasingly supported by regulatory bodies. To better understand toxicological processes in early life stages it is essential to describe the reference state of healthy organisms. In this study we sampled zebrafish at 25 time points during development: 1.5; 6; 16; 24; 36; 48; 60; 72; 84; 96 and 120 hpf (hours post fertilization), and every two days from 5 until 32 dpf (days post fertilization). We analysed transcript levels of ± 40 genes involved in the thyroid, steroid, digestive and biotransformation systems using QPCR. While it is well known that these systems play a key role in both developmental and toxicological processes, the timing of activation of their specific components is poorly understood. For example, the biotransformation capacity of zebrafish embryos still is a topic of debate, and effects of endocrine disruptors on development have been demonstrated – however without properly described mechanisms. For the steroid system we studied the enzymes involved in steroid hormone biosynthesis, as well as the steroid receptors. With respect to the thyroid system, we included key regulators of the hypothalamic-pituitary-thyroid axis, thyroid hormone synthesizing and activating machinery, as well as thyroid receptors. We analysed the exact timing of activation of different digestive enzymes (carbohydrates, lipids and proteins) which is especially important for understanding the transition to free-feeding larvae. For the biotransformation system, we studied Phase I (Cytochrome P450) but also Phase II metabolizing enzymes and drug transporters. In addition to providing information on gene activation, our data shed light on potential maternal transfer of specific mRNAs. This library of zebrafish gene transcription profiles is intended to function as a reference both for fundamental developmental studies, as well as for toxicological studies.