**Table 1**: GO biological processes, GO Molecular functions and GO KEGG extracted from inlet samples versus the middle sample using iDEP8.1

|           |          |        | GO Biological processes                              |
|-----------|----------|--------|--|
| Direction | adj.Pval | nGenes | Pathways   |
| Up Inlet  | 2.1e-04  | 4      | Cellular response to X-ray                           |
|           | 1.2e-03  | 19     | Cell adhesion  |
|           | 1.2e-03  | 16     | Regulation of anatomical structure morphogenesis     |
|           | 1.2e-03  | 15     | Growth   |
|           | 1.2e-03  | 4      | Heart valve morphogenesis                            |
|           | 1.2e-03  | 8      | Epithelial cell migration                            |
|           | 1.2e-03  | 4      | Response to vitamin D                                |
|           | 1.2e-03  | 8      | Regulation of angiogenesis                           |
|           | 1.2e-03  | 11     | Blood vessel morphogenesis                           |
|           | 1.2e-03  | 18     | Plasma membrane bounded cell projection organization |
|           | 1.3e-03  | 18     | Cell projection organization                         |
| Up Middle | 4.1e-04  | 4      | Blood coagulation, fibrin clot formation             |
|           | 8.4e-04  | 7      | Organic acid catabolic process                       |
|           | 8.4e-04  | 18     | Small molecule metabolic process                     |
|           | 8.6e-04  | 16     | Proteolysis  |
|           | 8.6e-04  | 4      | Bile acid metabolic process                          |
|           | 8.6e-04  | 5      | Protein activation cascade                           |
|           | 1.2e-03  | 7      | Steroid metabolic process                            |
|           | 1.2e-03  | 10     | Regulation of proteolysis                            |
|           | 1.2e-03  | 2      | Bile acid catabolic process                          |
|           | 1.2e-03  | 5      | Cellular hormone metabolic process                   |
|           | 1.2e-03  | 8      | Post-translational protein modification              |
|           | 1.2e-03  | 7      | Protein maturation                                   |
|           | 1.4e-03  | 3      | Plasminogen activation                               |
|           | 1.4e-03  | 3      | Microvillus organization                             |
|           |          |        | GO Molecular functions                               |
| Direction | adj.Pval | nGenes | Pathways   |
| Up Inlet  | 6.5e-03  | 9      | Actin binding  |
|           | 6.8e-03  | 5      | Structural constituent of cytoskeleton               |
|           | 7.6e-03  | 2      | Bubble DNA binding                                   |
|           | 7.6e-03  | 12     | Cytoskeletal protein binding                         |
| Up Middle | 8.4e-03  | 8      | Lipid binding  |
|           | 8.4e-03  | 5      | Peptidase inhibitor activity                         |
|           |          |        | GO KEGG  |
| Direction | adj.Pval | nGenes | Pathways   |
| Up Inlet  | 1.3e-03  | 6      | Hippo signaling pathway                              |
|           | 2.7e-03  | 6      | Focal adhesion                                       |
|           | 3.3e-03  | 5      | MicroRNAs in cancer                                  |
|           | 3.3e-03  | 4      | Hypertrophic cardiomyopathy (HCM)                    |
| Up Middle | 3.9e-03  | 3      | PPAR signaling pathway                               |
|           | 3.9e-03  | 3      | Complement and coagulation cascades                  |