

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: WGCNA modules

File Name: Supplementary Data 2

Description: Sequencing table statistics

File Name: Supplementary Data 3

Description: Kraken contaminants in mayfly genome assembly

File Name: Supplementary Data 4

Description: Contaminants

File Name: Supplementary Data 5

Description: Orthofinder species

File Name: Supplementary Data 6

Description: Orthofinder stats orthologues

File Name: Supplementary Data 7

Description: RNA samples sequenced

File Name: Supplementary Data 8

Description: Mfuzz stages

File Name: Supplementary Data 9

Description: Mfuzz data

File Name: Supplementary Data 10

Description: Chemosensory complement in insects

File Name: Supplementary Data 11

Description: tau indexes

File Name: Supplementary Data 12

Description: DESeq results female vs male heads

File Name: Supplementary Data 13

Description: WGCNA samples, genes and enriched GO terms per species

File Name: Supplementary Data 14

Description: Shared genes between *C. dipterum* and *D. melanogaster* wing pad and wing disc WGCNA modules

File Name: Supplementary Data 15

Description: RNAi lines used in *D. melanogaster*

File Name: Supplementary Data 16

Description: Supplementary Table 15: Genes highly expressed in *C. dipterum* wings and gills

File Name: Supplementary Data 17

Description: Supplementary Table 16: Primers used to design RNA probes for in situ hybridization

File Name: Supplementary Data 18

Description: Supplementary Table 17: Opsins identified in Ephemeroptera