626504 ODOGEN
IEF final report – additional pdf

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MARIE CURIE ACTIONS

Figure 1 – RNA sequencing experimental desing.

6 day-old females
3 replicates each

RNA extraction & sequencing

Head Abdomen Head Abdomen

Reads
(per sample)

Combine reads

De novo assembly

Abundance estimation

Identify differentially expressed transcripts

Functional annotation
of assembled
transcripts

Figure 2a – Current status of the assembly annotation

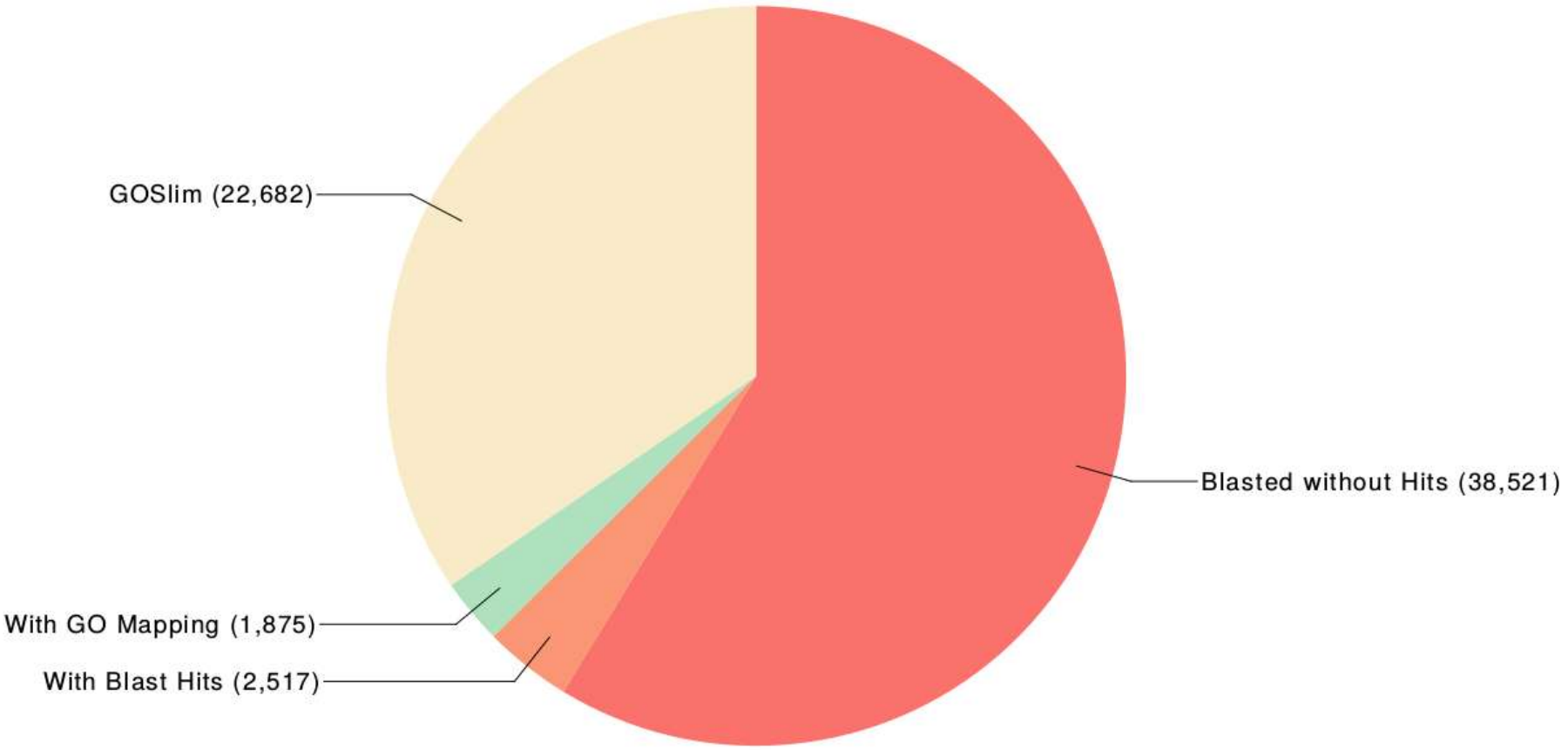

Figure 2b – Assembly annotation: InterProScan results

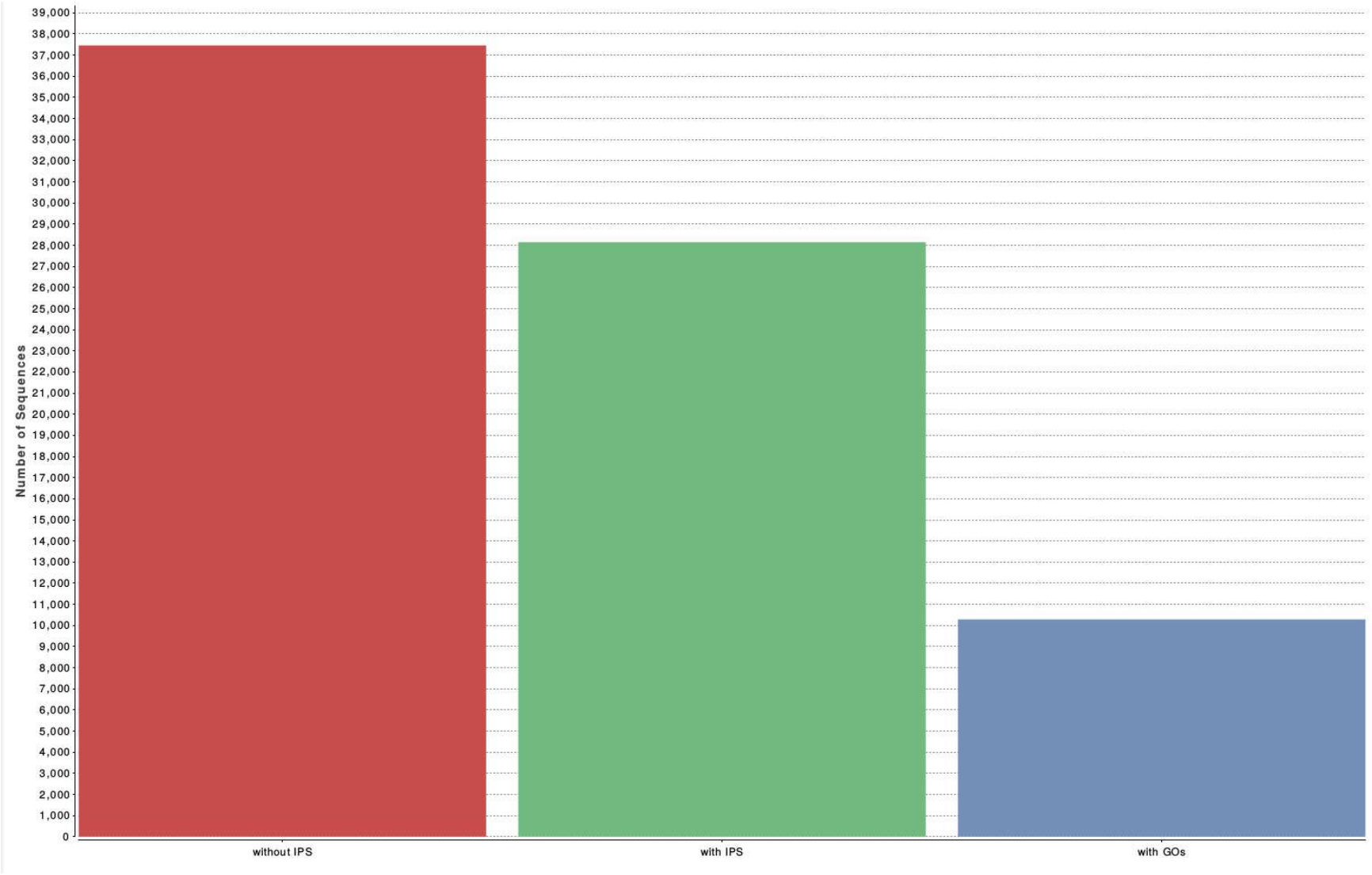

Figure 3a – Volcano plots showing the results of differential expression analyses between the abdomen of sexual and asexual females. Red dots indicate those transcripts that are significantly differentially expressed

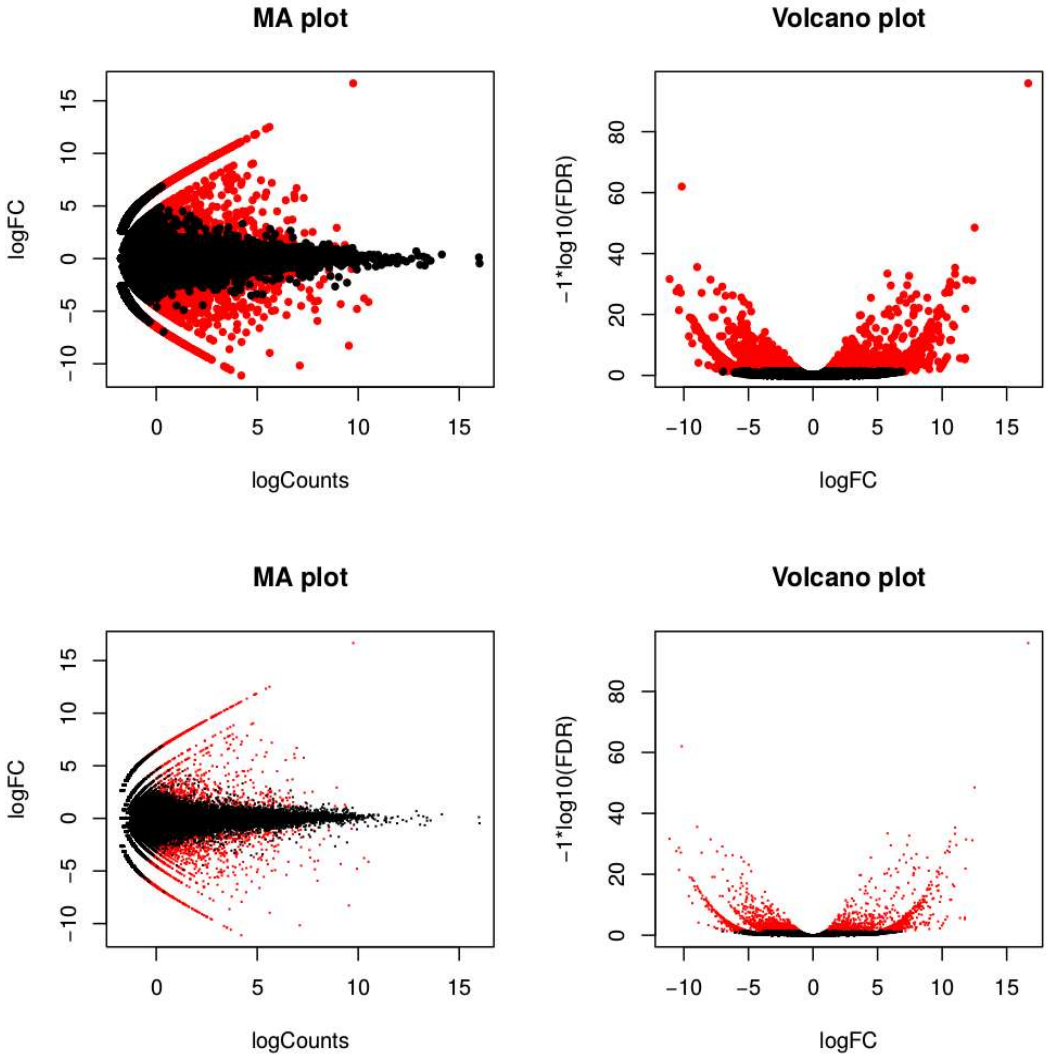

Figure 3b – Volcano plots showing the results of differential expression analyses between the head of sexual and asexual females. Red dots indicate those transcripts that are significantly differentially expressed

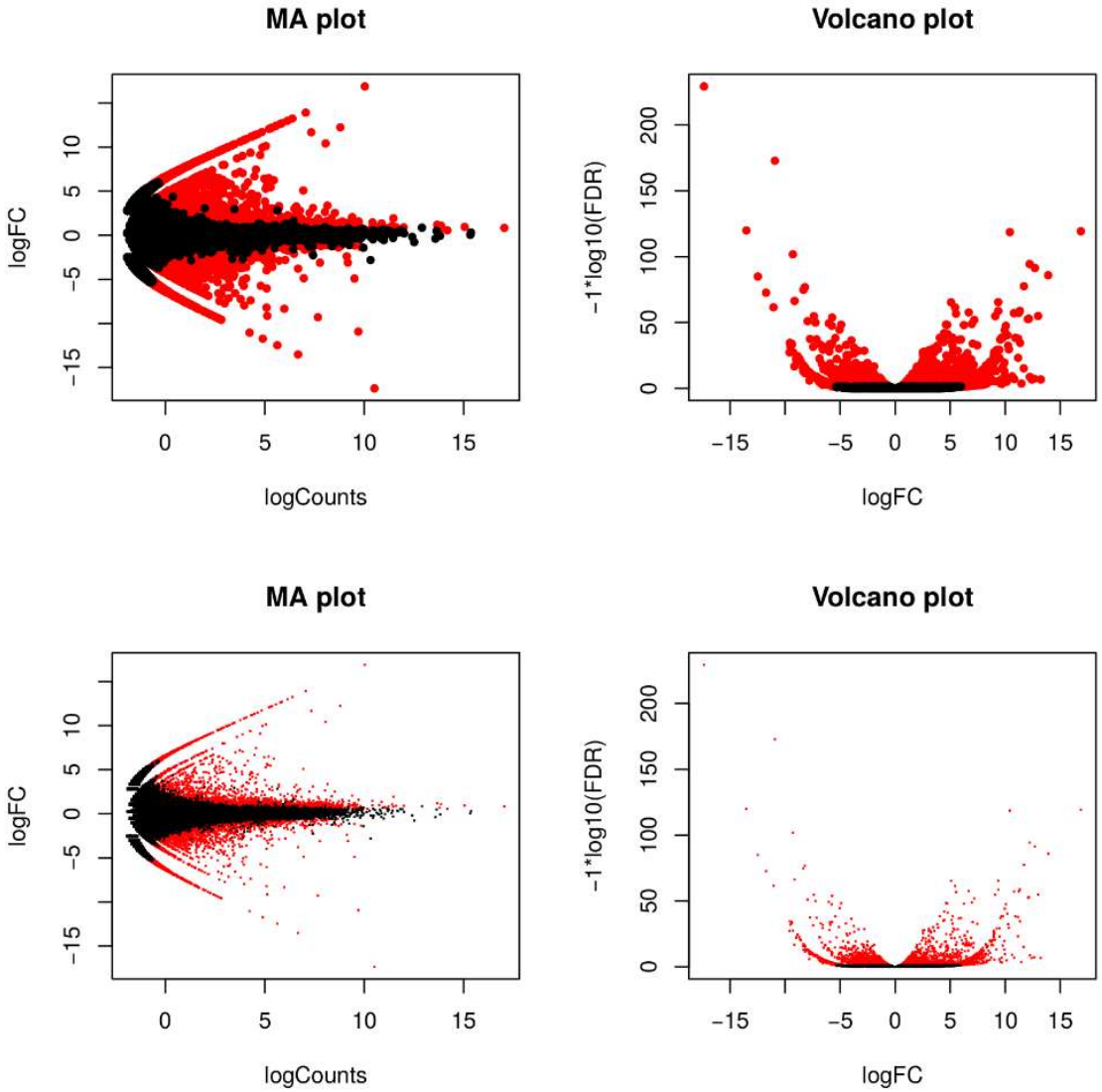

Figure 4 – Genes essential for oogenesis identified in the transcriptome of *Ischnura hastata.* Listed are the gene names and whether they are upregulated (Y) or not (N) in sexual (Sex) or asexual (Asex) females. Genes are grouped according to their role within the process of oocyte formation.

Essential oogenesis genes			
Gene name	**Sex**	**Asex**	
Yellow	N	Y	expressed with early chorion genes, vitelline membrane integrity
Extra-macrochaetae	N	Y	
TBC1 domain	Y	N	
Tropomyosin	Y	N	early embryogenesis and germ cell formation
Arrestin	Y	N	
Peroxiredoxin	Y	Y	
UDP glucuronosyl tranferase	Y	Y	
Caspase	N	Y	controlled cell death regulation, including pole cells
Neuralized	N	Y	
Fringe glycosyl transferase	Y	N	promote follicle cell mobility – choriogenesis
Innexin	Y	Y	
Ubiquitin	N	Y	regulation of cell cycle (mitosis/meiosis)
Tribbles	Y	N	
Tubulin	N	Y	
Dynein	N	Y	
Ankyrin	N	Y	oocyte determination and formation of A-P axis
ATP-dependent RNA helicase	Y	N	
Protein Kinase C alpha	Y	N	
Kinesin light chain	Y	N	
Sulfotransferase	Y	Y	oocyte determination and formation of D-V axis
Histone methyltransferase	N	Y	chromatin regulation - maternal regulation of gene expression
Replication factor	Y	N	
Argonaute	Y	N	involved in piRNA pathway
Arginine N methyltransferase	Y	N	
Apolipo 9	Y	N	
Mucin	Y	N	
Cytochrome P450	Y	N	vitellogenesis, lipidic storage, ovarian maturation
Takeout	Y	N	
Clathrin light chain	Y	Y	
Serine protease	Y	N	inmune defense
Small nuclear ribonucleo protein	Y	N	maintenance and division of germ-line and ovarian somatic stem cells
Glucose dehydrogenase	Y	Y	
Kinesin	Y	Y	affects cytoskeleton and actomyosine contractyle ring assembly
Eukaryotic translation initiation factor	Y	N	posterior group genes
Extended synaptotagmin	Y	N	
Ribosomal proteins	Y	Y	increased ovarian protein synthesis – early embryogenesis
Heat Shock cognate 70	Y	N	control of protein abundance during oogenesis

Figure 5 – Probabilities of membership of 178 sexual *Ischnura hastata* from 10 populations in America, as modelled based on different numbers (K) of hypothetical populations using STRUCTURE software, using data on 2,161 unlinked SNPs. Each bar represents an individual and the proportion of the bar that is a certain color represents the proportion of assignment to each cluster.

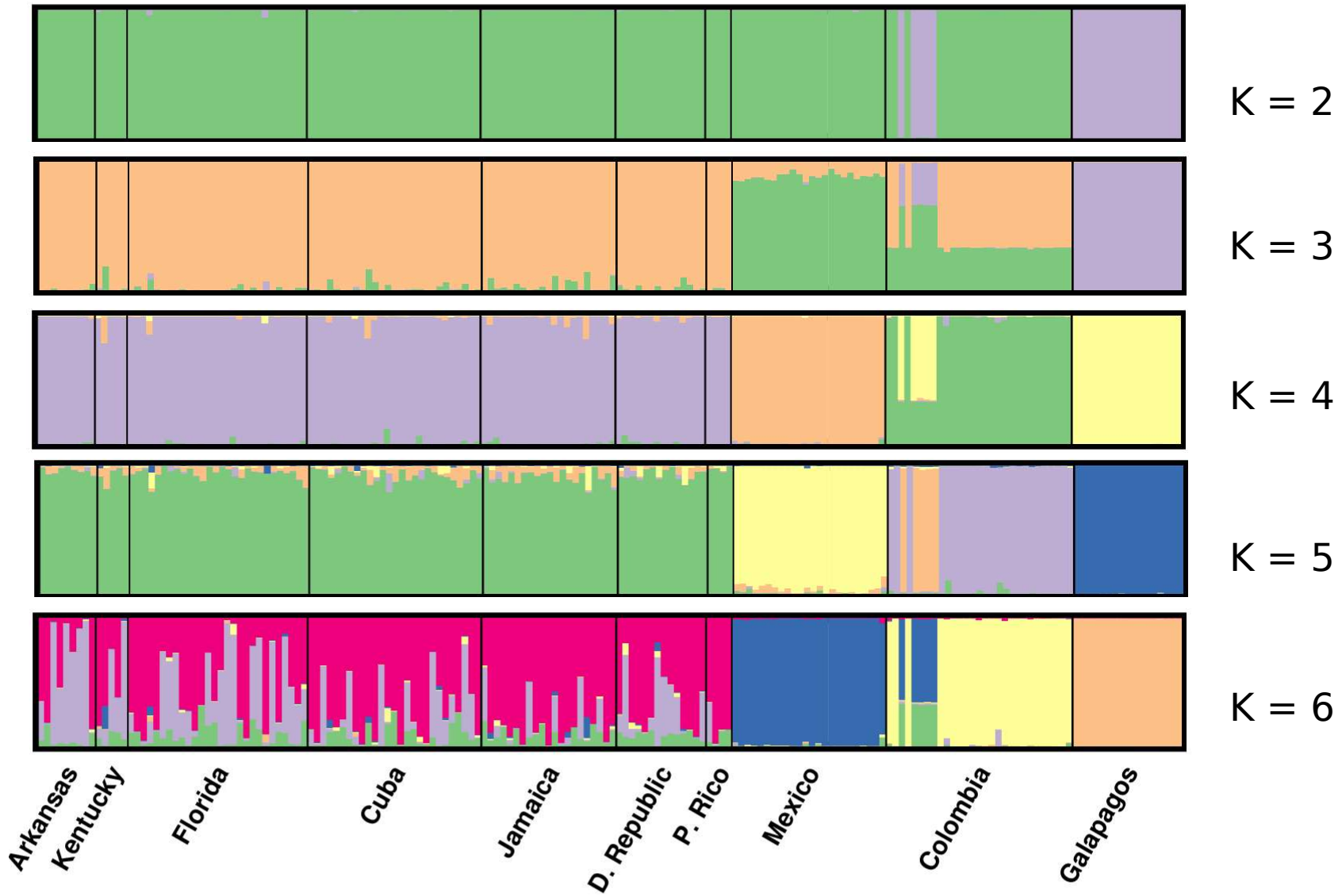

Figure 6 – Main wind currents on North America.