

Genes encoding novel secreted and transmembrane proteins are temporally and spatially regulated during *Drosophila melanogaster* embryogenesis

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Background: Morphogenetic events that shape the *Drosophila melanogaster* embryo are tightly controlled by a genetic program in which specific sets of genes are up-regulated. We used a suppressive subtractive hybridization procedure to identify a group of developmentally regulated genes during early stages of *D. melanogaster* embryogenesis. We studied the spatiotemporal activity of these genes in five different intervals covering 12 stages of embryogenesis. Results: Microarrays were constructed to confirm induction of expression and to determine the temporal profile of isolated subtracted cDNAs during embryo development. We identified a set of 118 genes whose expression levels increased significantly in at least one developmental interval compared with a reference interval. Of these genes, 53% had a phenotype and/or molecular function reported in the literature, whereas 47% were essentially uncharacterized. Clustering analysis revealed demarcated transcript groups with maximum gene activi