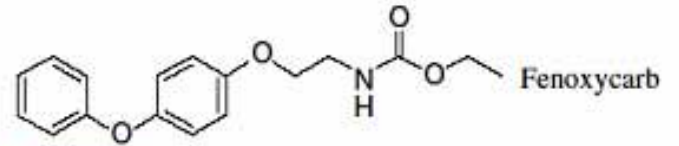
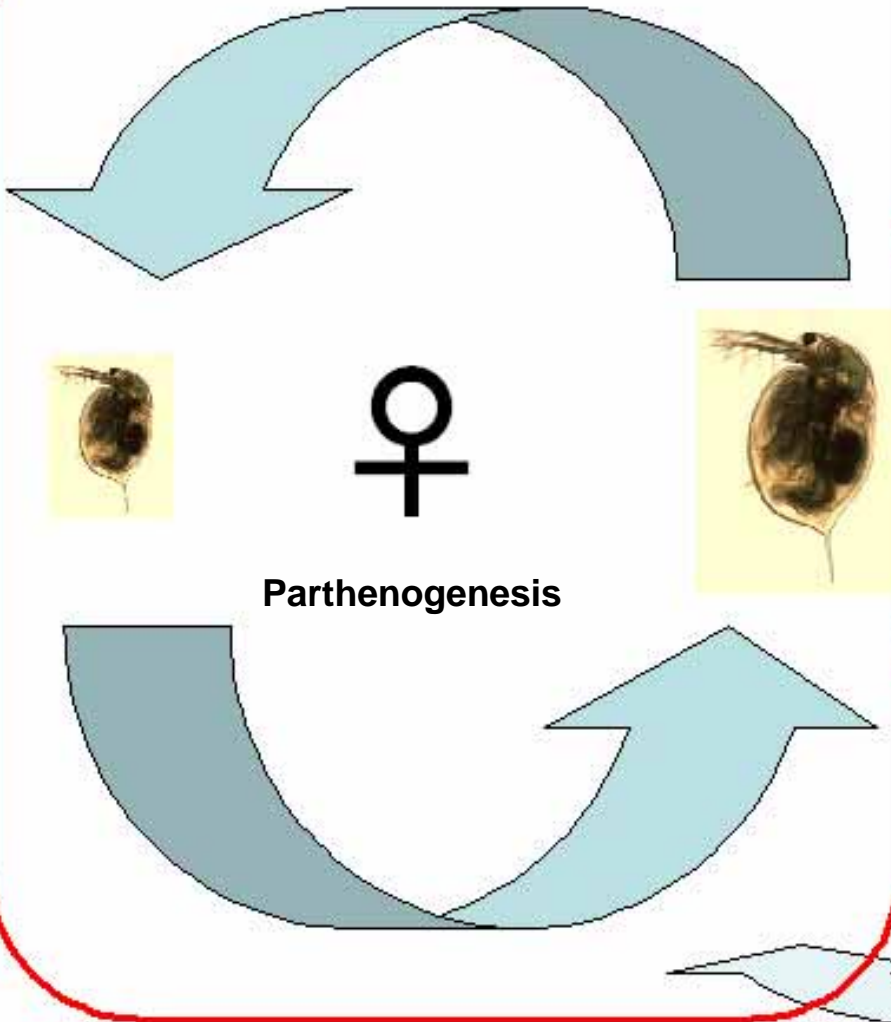


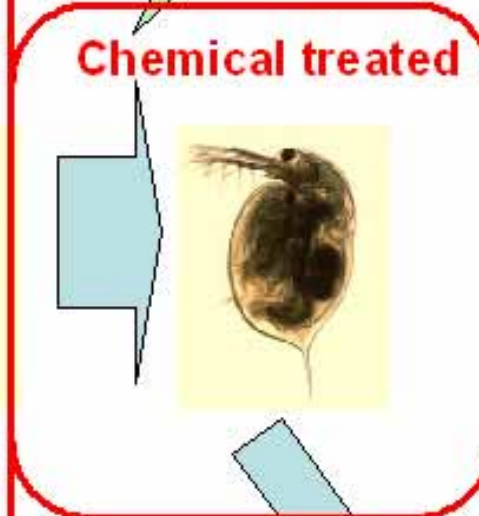
Daphnia magna



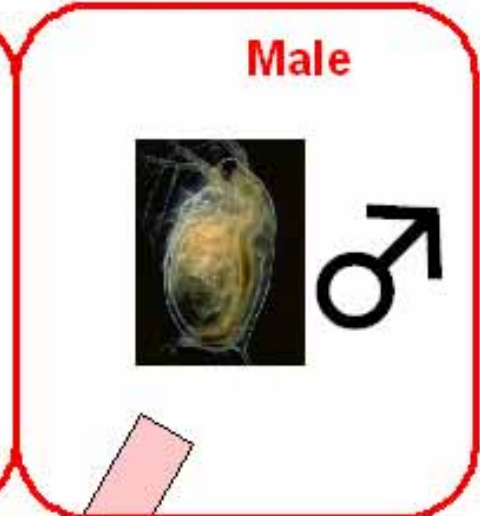
Normal condition



Chemical treated

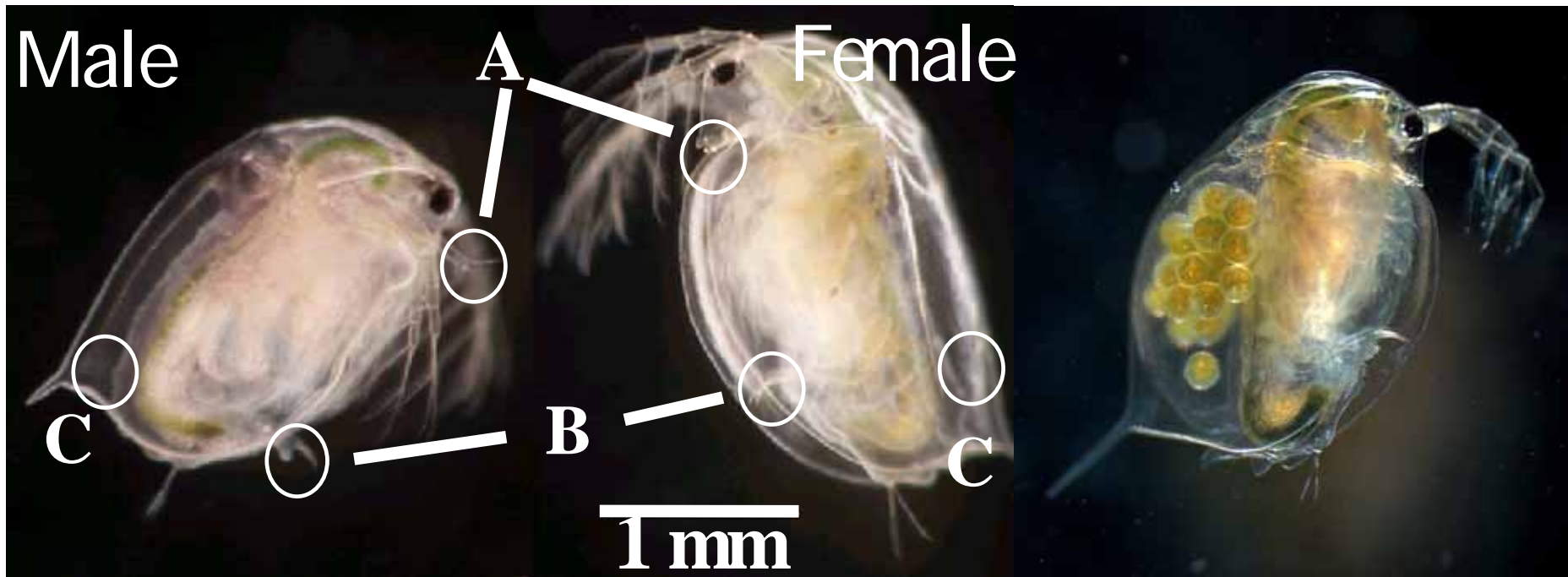


Male



Resting Egg

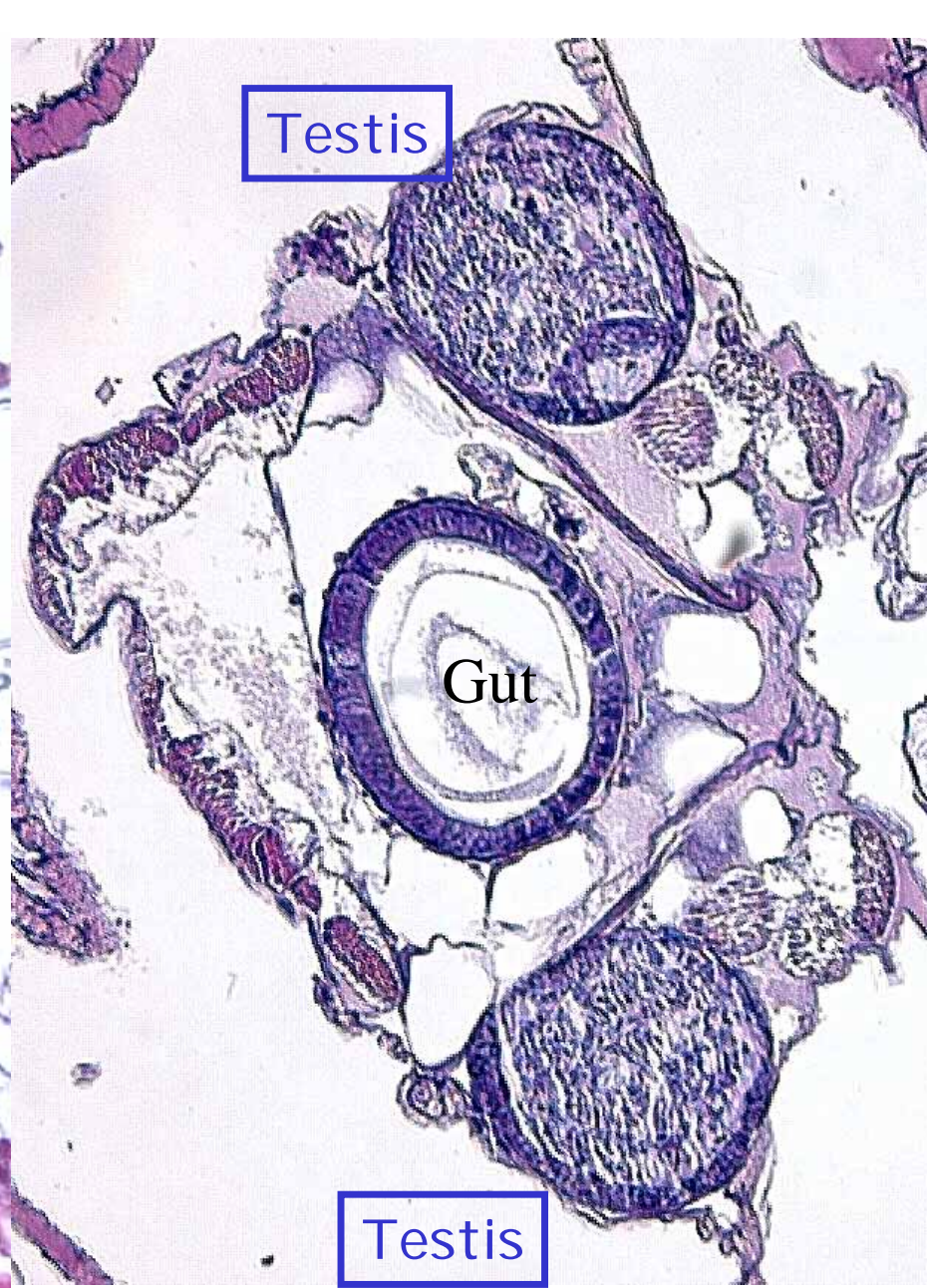
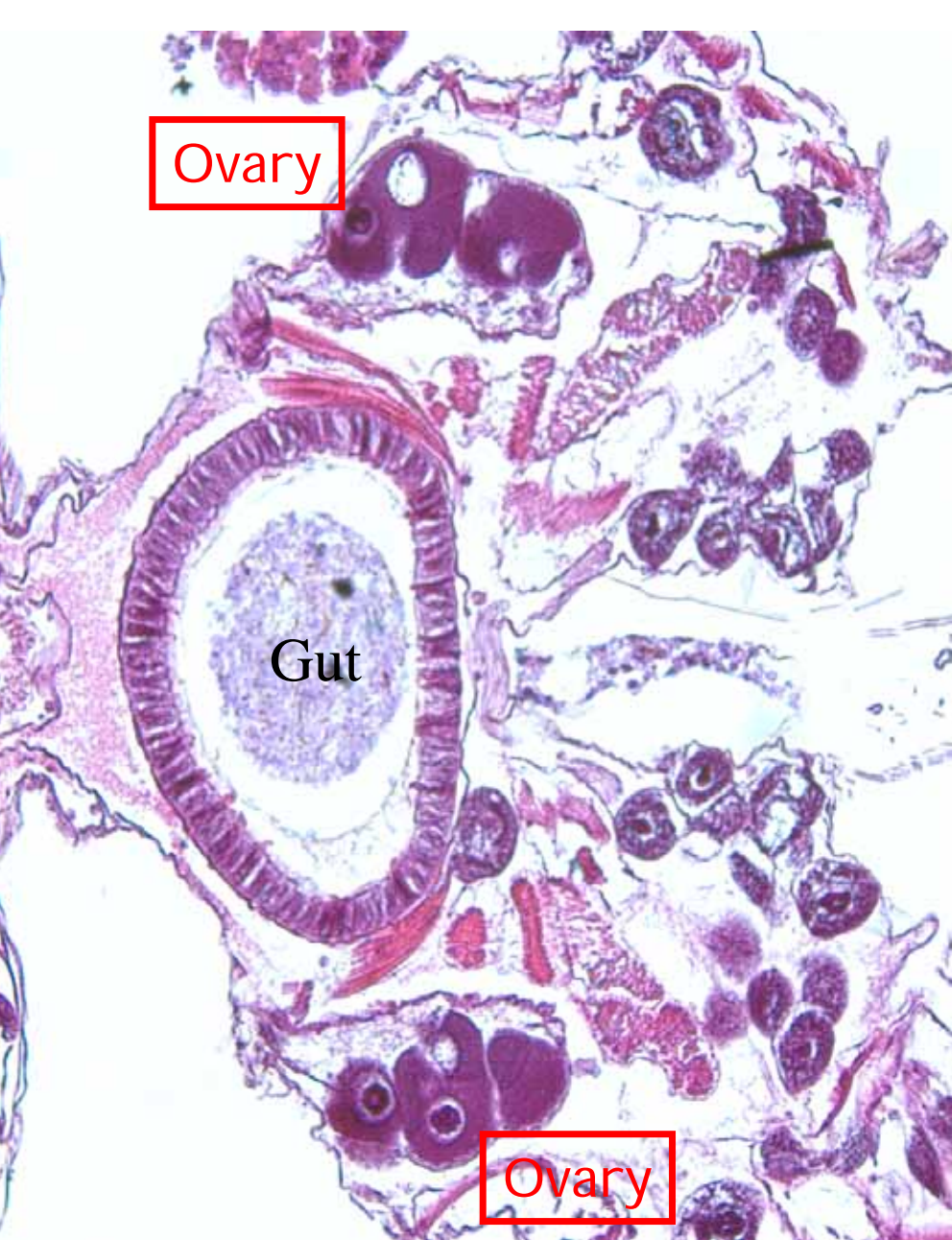
Sex Differentiation



A: 1st antenna

B: post abdominal claw

C: abdominal process





Ecotoxicogenomics

For DNA microarray analysis

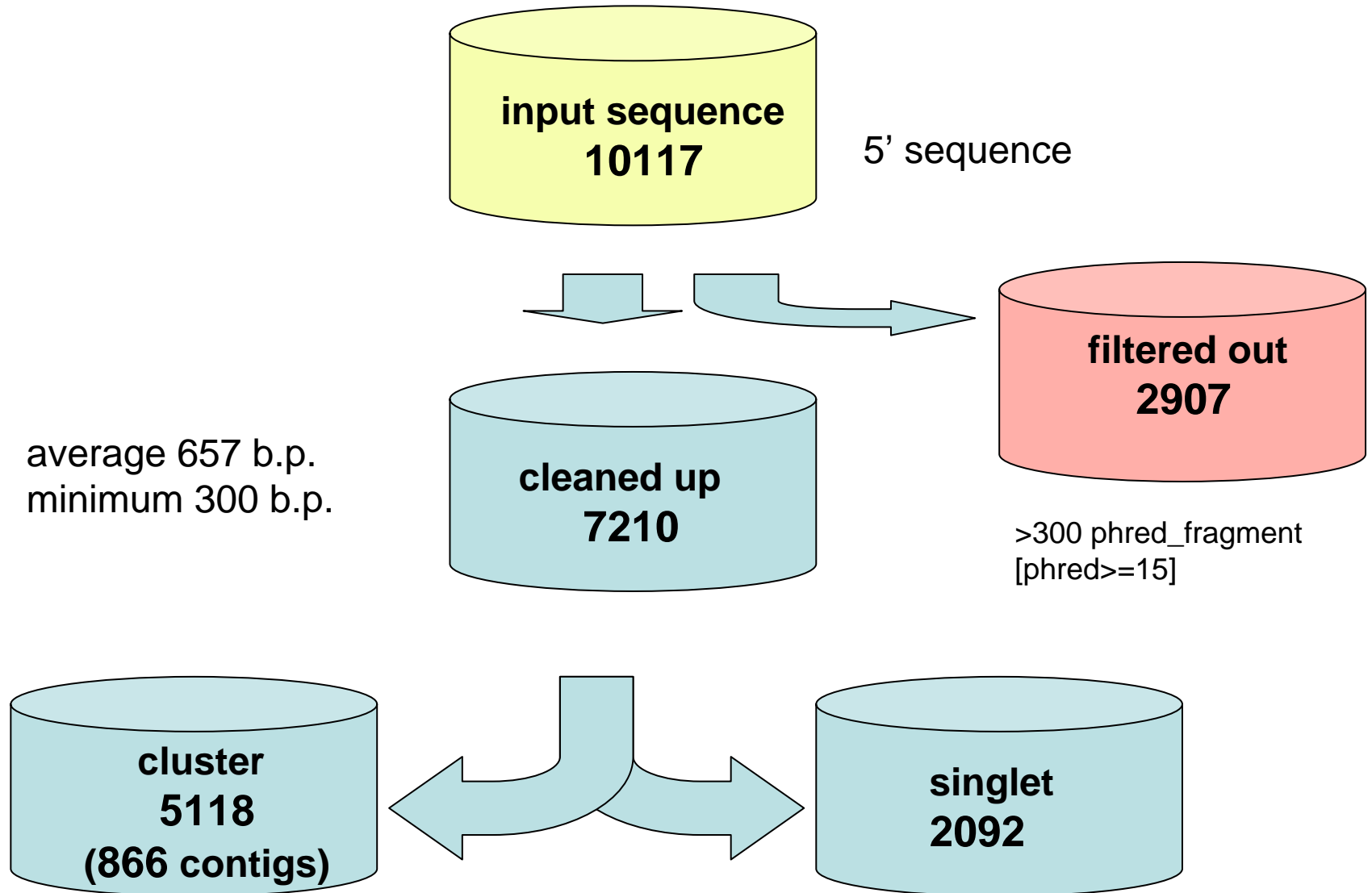
- Gene information
 - EST (expressed sequence tags)
(mRNA sequences)
 - cDNA library
 - Genome sequence

- DNA Microarray
 - cDNA or oligonucleotide
 - Slide glass (coating, fixation)

- Sample
 - quality control
 - quantity (micrograms of total RNA)

Labeling

EST analysis



Results of BlastX

clusterID	contigID	fragments	homology search result	score	E_value	consensus length
0	contig1	12	emb AJ298875.1 RES298875 Rana esculenta mRNA for acidic ribosomal protein 1 (prp1 gene)	71.9	1e-09	903
0	IGU001_S_C_000013_E12.r	1	ref NC_000909.1 Methanococcus jannaschii complete genome	42.1	0.42	437
1	contig1	2	ref NC_003074.1 Arabidopsis thaliana chromosome 3, complete sequence	40.1	2.2	584
2	contig1	43	gb AF045089.1 AF045089 Drosophila milleri cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	121	1e-24	973
2	contig2	2	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	3e-17	469
2	IGU001_S_C_000001_A12.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	519
2	IGU001_S_C_000001_C08.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	536
2	IGU001_S_C_000002_B01.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	475
2	IGU001_S_C_000002_B09.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	545
2	IGU001_S_C_000002_E11.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	3e-17	462
2	IGU001_S_C_000004_A01.r	1	gb AF200854.1 Drosophila simulans isolate MDW86 mitochondrion, complete genome	81.8	4e-13	385
2	IGU001_S_C_000004_A11.r	1	gb AF200854.1 Drosophila simulans isolate MDW86 mitochondrion, complete genome	81.8	6e-13	518
2	IGU001_S_C_000004_B11.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	507
2	IGU001_S_C_000004_C01.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	506
2	IGU001_S_C_000004_G05.r	1	gb AF147119.1 AF147119 Drosophila guttifer strain 15081-1971.1 cytochrome oxidase II (COII) gene, partial cds; mitochondrial gene for mitochondrial product	85.7	2e-14	230
2	IGU001_S_C_000004_H05.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	490
2	IGU001_S_C_000005_E07.r	1	gb AF147119.1 AF147119 Drosophila guttifer strain 15081-1971.1 cytochrome oxidase II (COII) gene, partial cds; mitochondrial gene for mitochondrial product	85.7	3e-14	453
2	IGU001_S_C_000005_F03.r	1	gb AF083864.1 AF083864 Simulium aureum 'G' isolate G2 cytochrome oxidase II (COII) gene, mitochondrial gene encoding mitochondrial protein, complete cds	95.6	4e-17	528

The result of similarity search against the public non-redundant database by Blastx.

	Number of Groups	Number of Clones
Genes from <i>D.magna</i>	10	252
Genes from other organisms	1208	4115
No similarity	1740	2843
Total	2958	7210

The number of EST groups and clones that showed similarity to registered genes are indicated.

Gene annotation!!



DaphniaBASE

Daphnia magna EST database

<http://daphnia.nibb.ac.jp>

***Daphnia* cDNA analysis**

[BLAST search against *Daphnia*BASE](#)

[List of Clones](#)

[List of Contigs](#)

[List of Pairs](#)

[All results of homology searching](#)

BJ925659-BJ936637: DDBJ

Ecotoxicogenomics

For DNA microarray analysis

- Gene information
 - EST (expressed sequence tags)
(mRNA sequences)
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 - Genome sequence
- DNA Microarray
 - cDNA or oligonucleotide
 - Slide glass (coating, fixation)
- Sample
 - quality control
 - quantity (micrograms of total RNA)
- Labeling



DLC(diamond-like carbon) coat

