

Identification of orthologs of *Caenorhabditis elegans* dauer formation genes in the parasitic nematode *Brugia malayi*

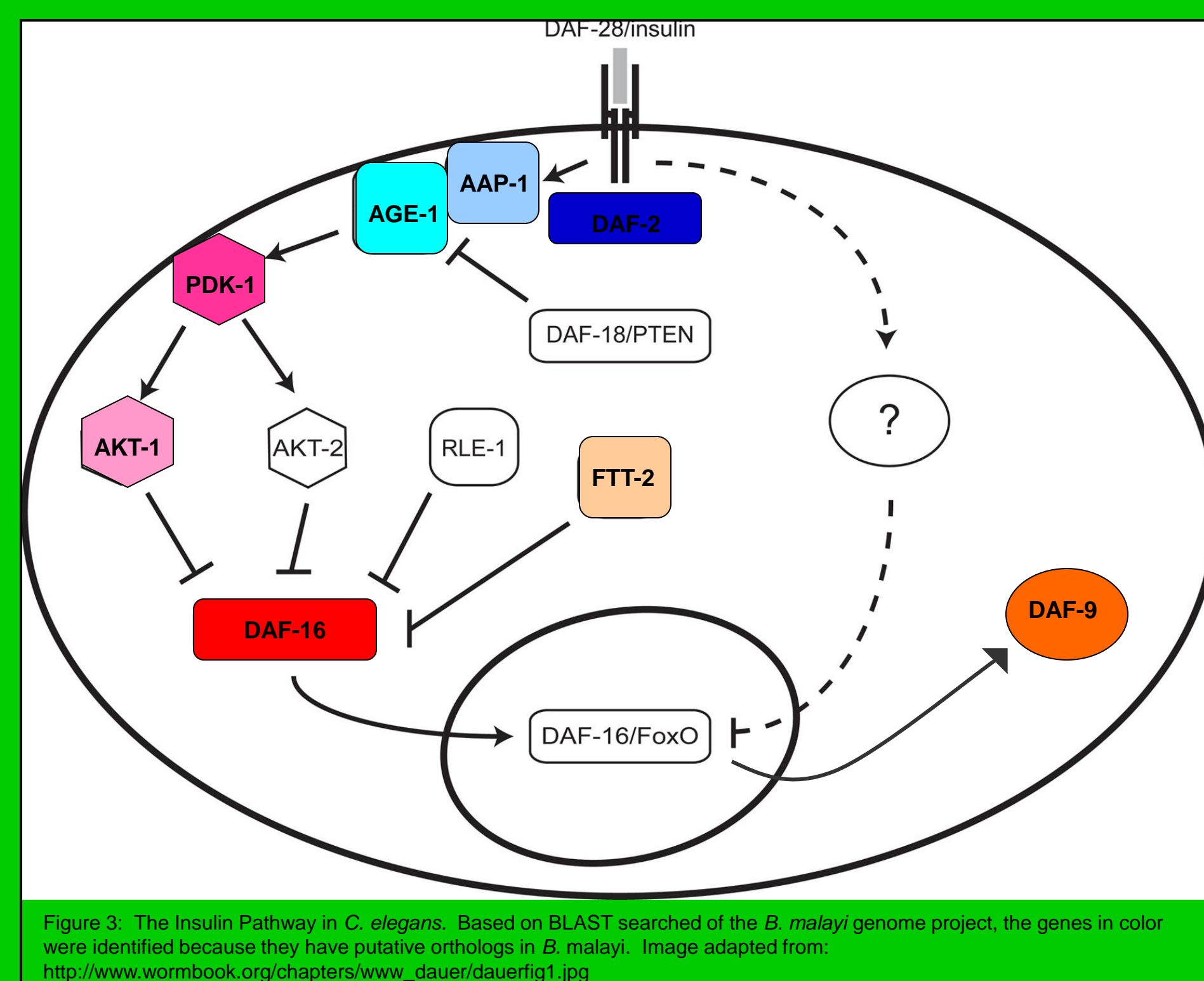
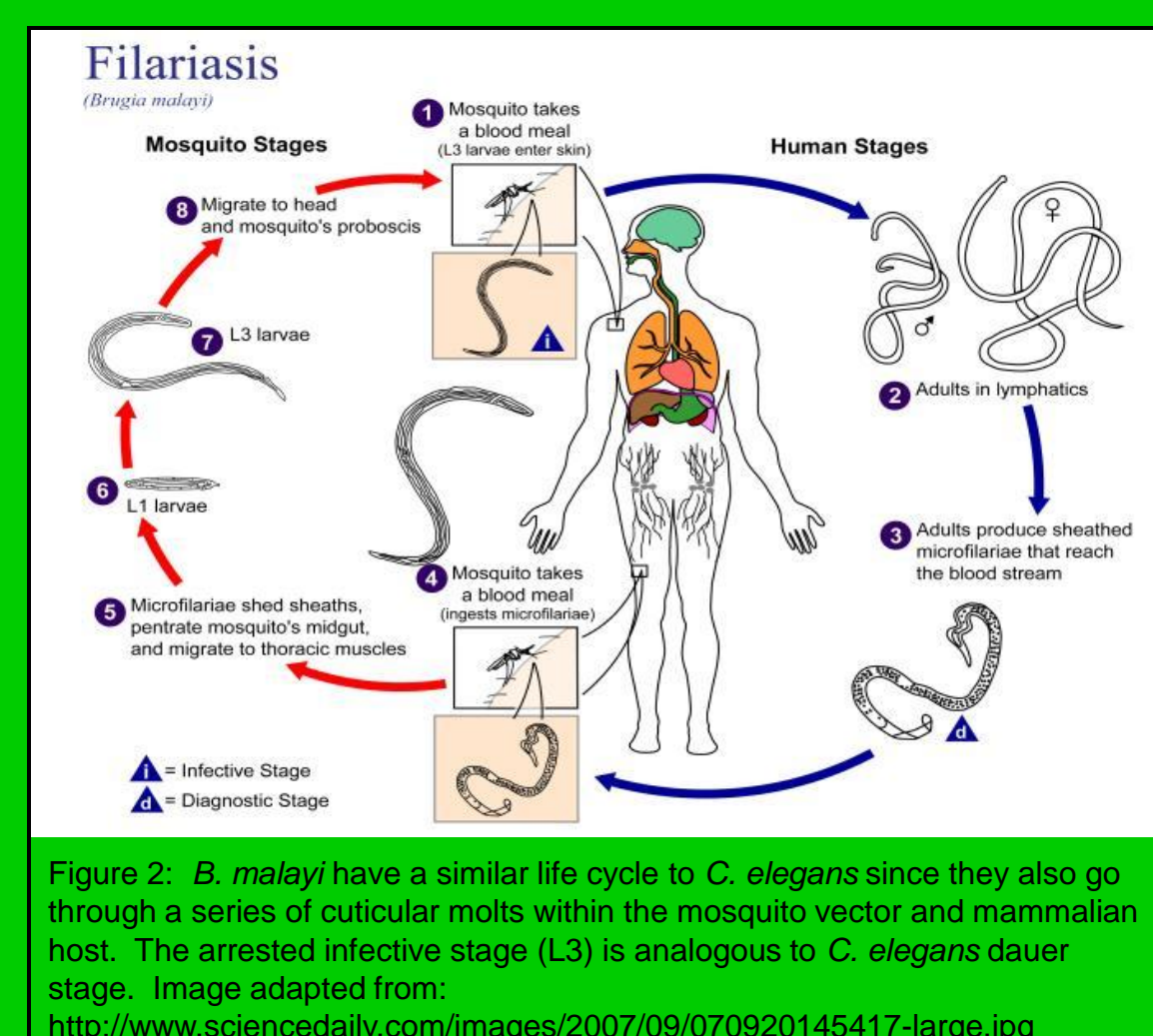
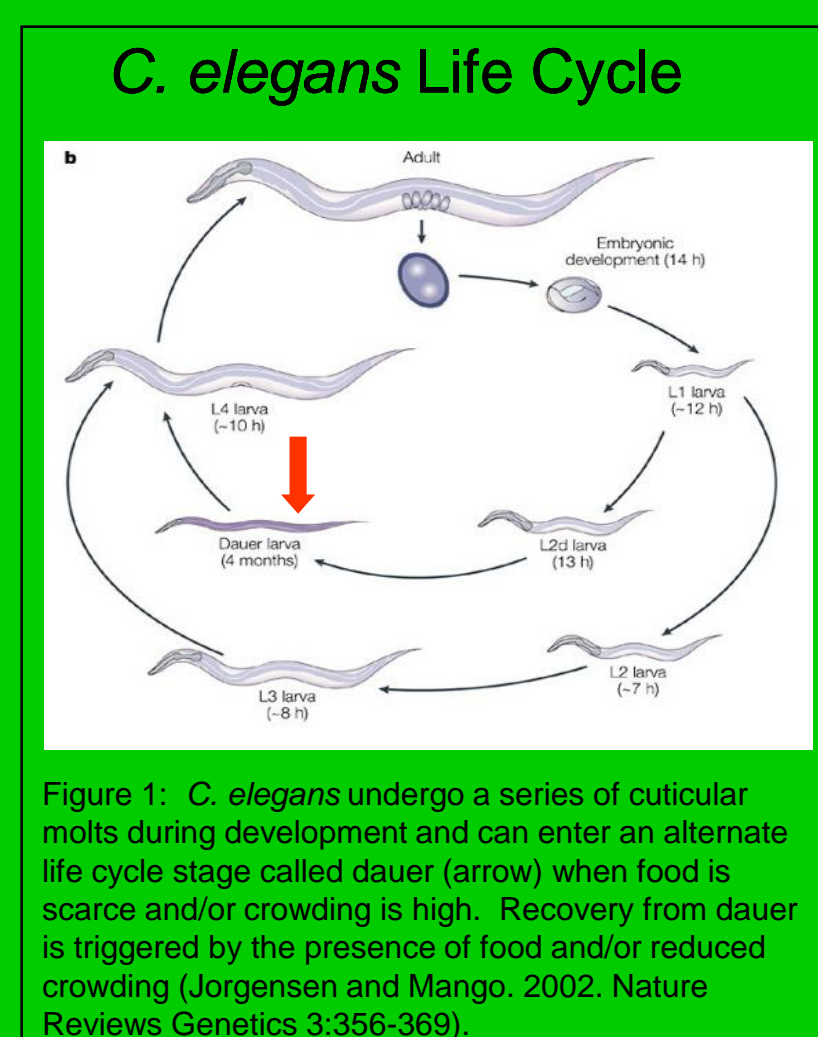


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Introduction



Significance

- *Brugia malayi* infections lead to elephantiasis after repeated exposure
- Dauer life stage is analogous to the infective stage larvae of *B. malayi*



Results

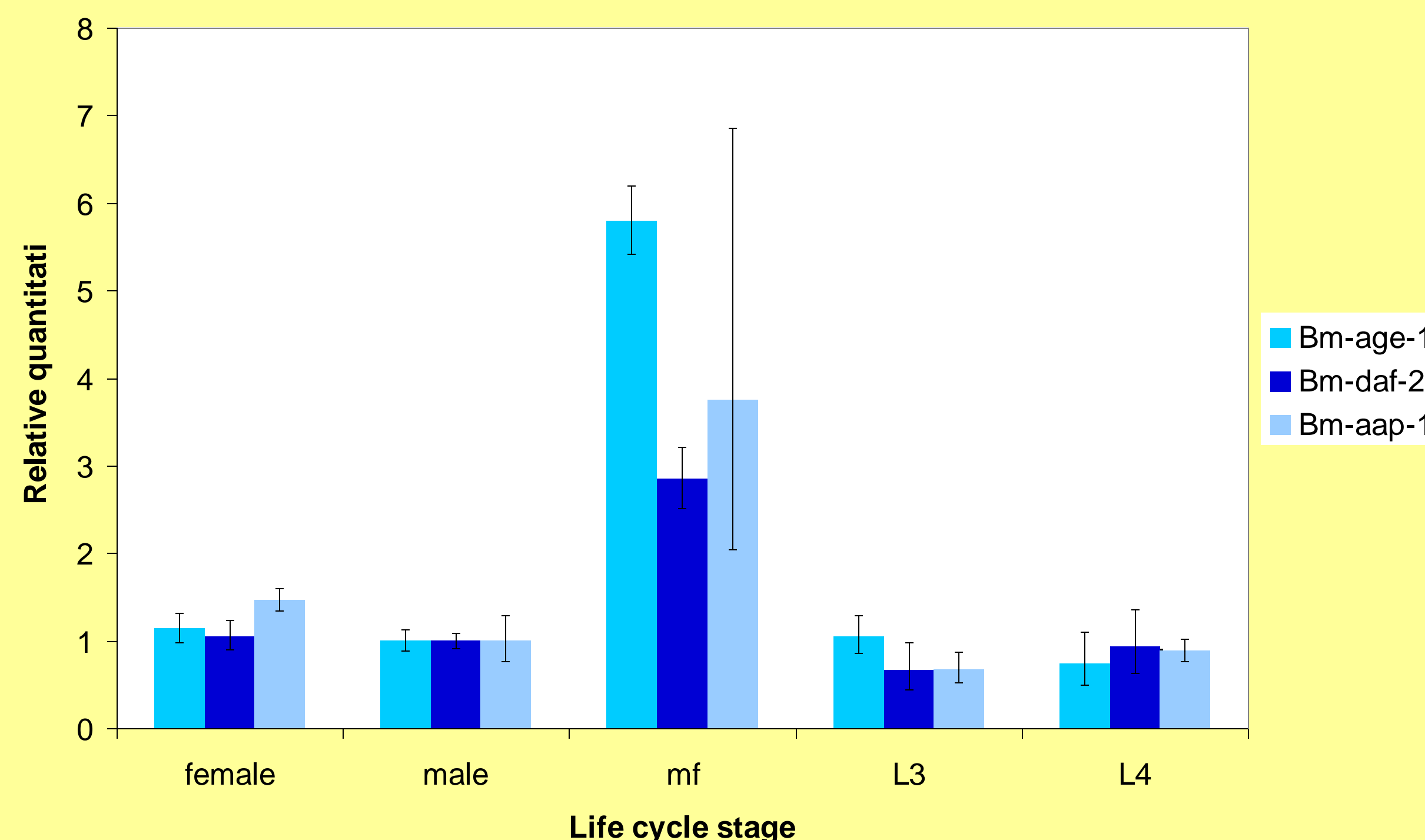
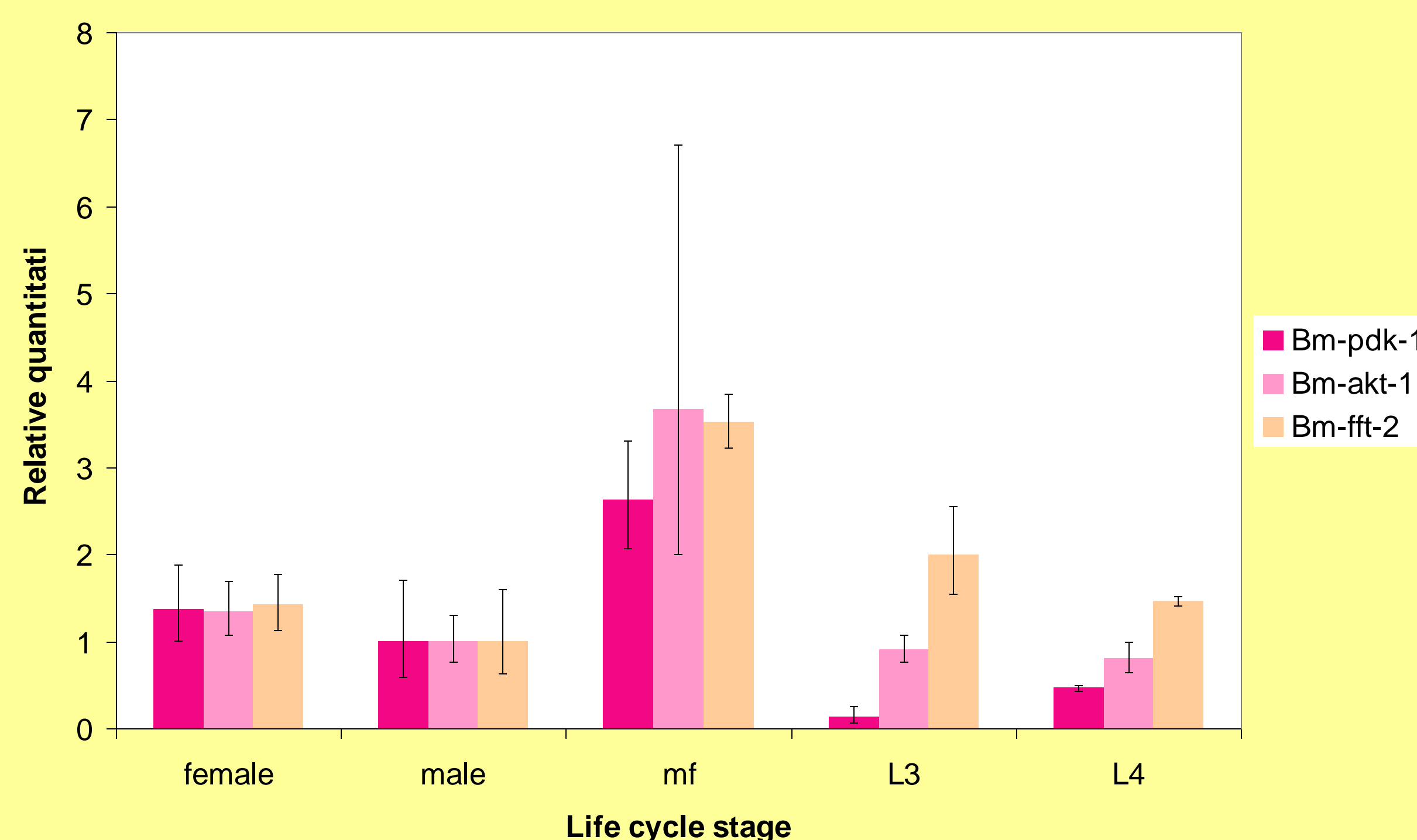
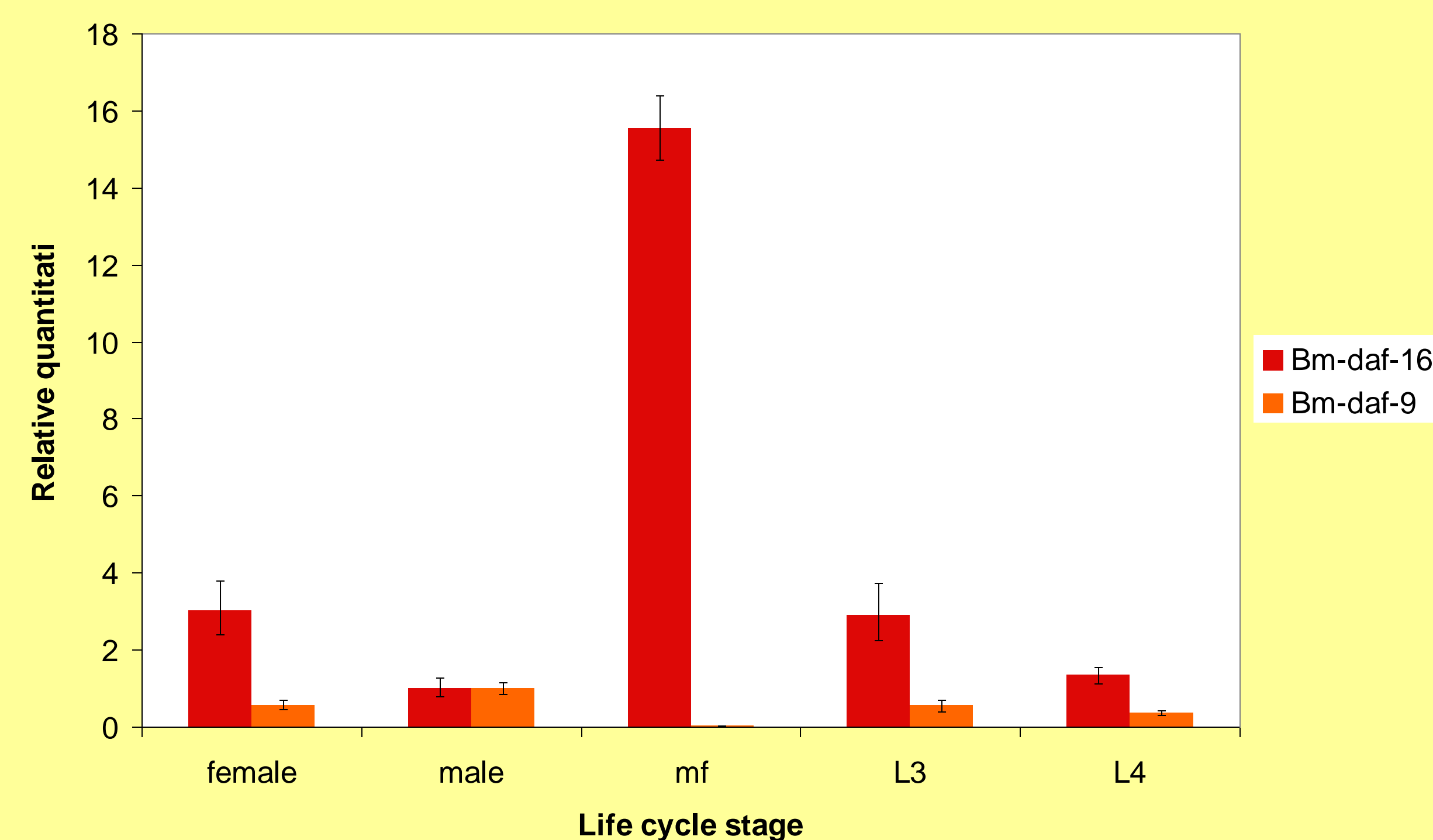
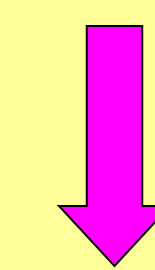


Figure 5: qRT-PCR results representing the relative gene expression of the indicated genes during different life stages in *B. malayi* are shown. All expression levels were normalized to the *Bm-actin* endogenous control. The relative quantification and error bars were calculated using Applied Biosystems software with the *B. malayi* male stage as the calibrator.

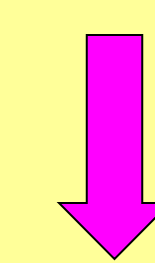
Methods

Quantitative Real-Time Polymerase Chain Reaction (qRT-PCR)

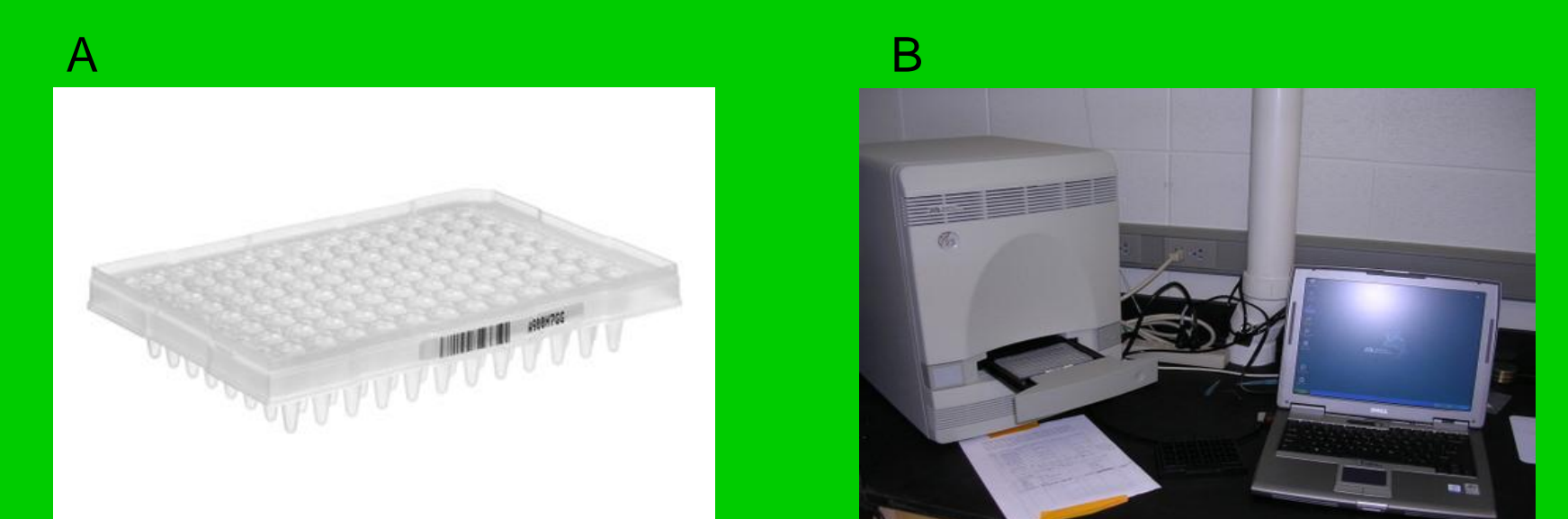
Design primer pairs for each of the genes of interest



Use dilutions of *B. malayi* female cDNA to generate standard curves for each primer set



Using cDNA isolated from different parasitic life cycle stages, run the reactions in quadruplicate for each gene



Conclusions

- Expression differs during the larval stages for all genes.
- Most have high expression in the microfilaria stage, then low expression in the L3 stage.
- *Bm-daf-16* shows high levels in L3 compared to L4 while *Bm-pdk-1* has the opposite expression in L3 and L4

Acknowledgements

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Figure 4 (A-C): Examples of elephantiasis caused by filarial parasites such as *B. malayi*, *W. bancrofti*, and *B. timoni*. A) Elephantiasis of the leg caused by filariasis. B) Thickening of the skin that is characteristic of elephantiasis. C) Elephantiasis of the scrotum.