Title

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ABSTRACT

iAbstract shoould be witten after the project is complete (or near complete). The abstract should include:
• A brief introductory statement.
•A statement of the purpose of the research.
•A statement of the research question.
•A brief discussion of the research method.
•A brief description of the results
•A brief statement of conclusion .

INTRODUCTION

The 70 kilo Dalton heat shock protein (HSP70) is believed to be found in all living organisms (Mayer and Bukau, 2004). On a molecular level, this protein acts as a chaperone that involves cycles of substrate binding and release of peptides. It requires ATP to function and acts as a signal of stress when involved in cell death (**Fig 1.**).

The house cricket is known as *Acheta domesticus* and can be found virtually anywhere around the world. Contrary to many beliefs, crickets feed on more than just plants but each other making them omnivores. Dorsal longitudinal flight muscles (DLMs) undergo a form of autophagic cell death and crickets lose the ability to fly. This process is called flight muscle histolysis. Histolysis is the degradation of tissues of living organisms. Histolysis usually takes place during animal metamorphosis. In *Acheta domesticus*, the process of histolysis takes places in a span of four days starting from the day of adult emergence. In most adult insects, Juvenile hormone (JH) controls the regulation of development and of reproduction. JH also regulates flight muscle histolysis in the cricket (Oliver et al, 2007)..

MATERIALS AND METHODS

House cricket last instar larvae were obtained from a commercial cricket breeder (Fluker Farms, Baton Rouge, LA) and reared at 30°C with a L:D 14:10 photoperiod. Virgin female adult crickets were isolated at emergence and designated age Day 0. Day 1 and Day 3 crickets were selected and their dorsal longitudinal muscles (DLMs), ovaries and fat body were dissected to collect tissue samples. The variants of the tissues varies from age of the cricket (day 1, day 2, day 3) and the different tissues (DLMs, ovaries, fat body). The dissection leads to the tri reagent step **(RNA isolation).** This next step using the tri reagent solution is broken up to five steps. These steps are listed as followed:

1. **HOMOGENIZATION**: 1 ml TRI REAGENT + 50-100 mg tissue
2. **PHASE SEPARATION**: homogenate + 0.2 ml chloroform.
3. **RNA PRECIPITATION**: aqueous phase + 0.5 ml isopropanol.
4. **RNA WASH**: 1 ml 75% ethanol.
5. **RNA SOLUBILIZATION**: nuclease-free water.

After the RNA isolation, cDNA first strand synthesis is done by the use of a PCR thermocycler machine. AMV enzyme, a reverse transcriptase, is used to synthesize the complementary DNA (cDNA). PCR amplification is performed. For this experiment, the protein of interest is HSP70. Therefore, the primer sets used were HSP 21 forward and reverse, HSP3' forward and reverse, and QRQ forward and reverse. When PCR product is ready, electrophoresis is performed using agarose gel. The final sample then is submitted for data sequencing.

RESULTS

LITERATURE CITED

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