**1. Prothoracic gland identification**

Immunohistochemistry + Immunofluorescence.

Antibody –Phantom: comp24584\_c0\_seq1 -----phm

GGGGATTCTTCCCACTCTCAACCAGAGGCCCAAATCGTTTCACAAAAGATCTGTAGGCAG

GTAATAGTACTTCAGCAACAGCAAGCCTGAGAGACTCTCGCAACTCGGTGTCAGGAACAG

TCCACTGAGATTGTTTTTGGTGAAGCTCCTCAAATTGAGCATTGAAGATCTTGAACCTGT

CTTTAACCAACCCCCTTGAAGCCCCACTTCCACTTCCTCCCTCACCCGGCACTGCACTAC

CACCCCCAGATGAGGTTAGGCCTTGCGCAGAGAGACATTGTAGAATCTTTGCCCAAGCAT

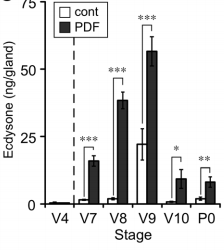
TCCTTTTATATTGATTTGCATGCTGCTGCACAATCC

**2. To test if pigment-dispersing factor (PDF) stimulate ecdysteroidogenesis**

(experiment will be conducted in one strain)

* Application of PDF into PG of diapausing and non-diapausing fifth instar larvae.

**Non-dipausing Diapausing**

**3. To test the sensitivity of PG to PDF in post long-day exposure larvae** (comparison between BE and UZ)

* Application of PDF into PG of diapausing larvae of BE and UZ

**4. To measure the expression level of PDF receptor on PG in post long-day exposure larvae** (comparison between BE and UZ)

* Q-PCR will be used to measure the expression level of PDF receptor

**5. To study the potential pathway?** (The goal of this study is to see how PDF regulate the ecdysteroidogenesis)