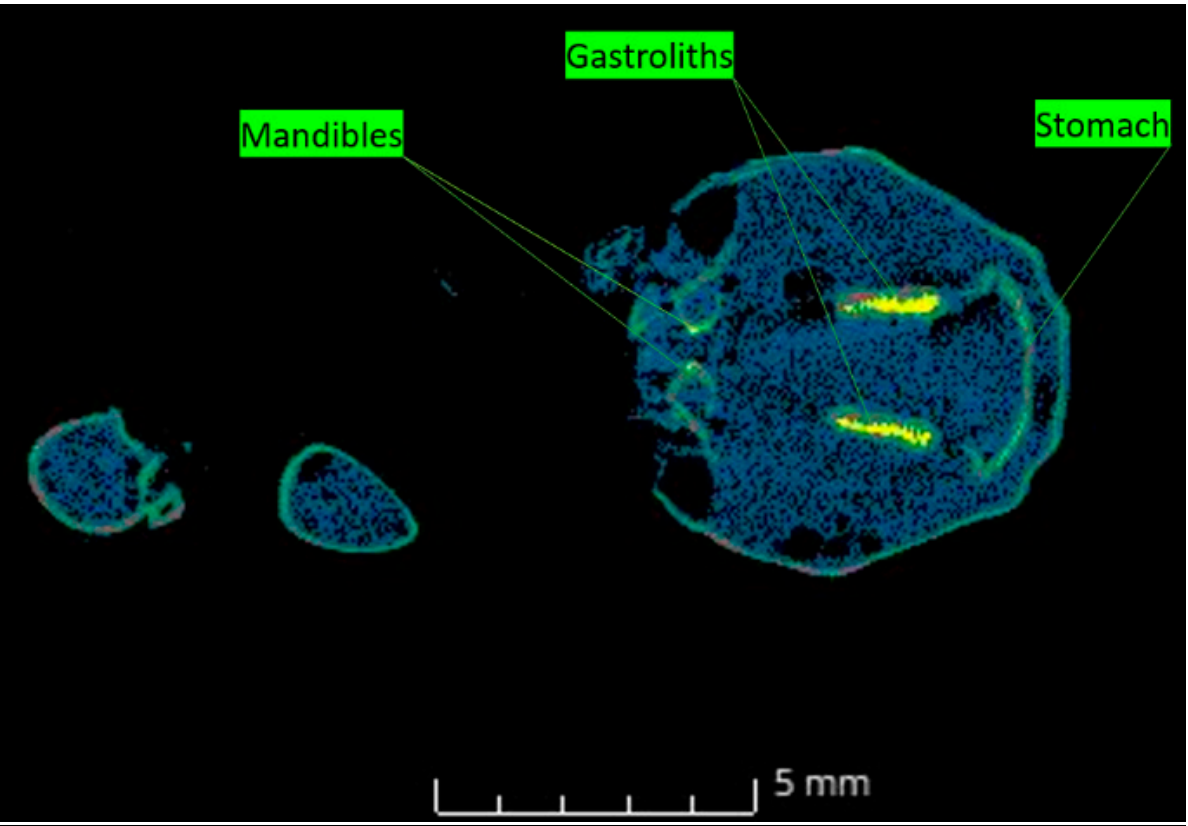


Supplementary Materials:

S1: CT scan of developing mandibles, gastroliths, and stomach in *Cherax quadricarinatus*



**Figure S1.** CT scan of mandibles, gastroliths, and stomach in treated *Cherax quadricarinatus* individual who died during ecdysis. Calcification is indicated in yellow in mandibles and gastroliths

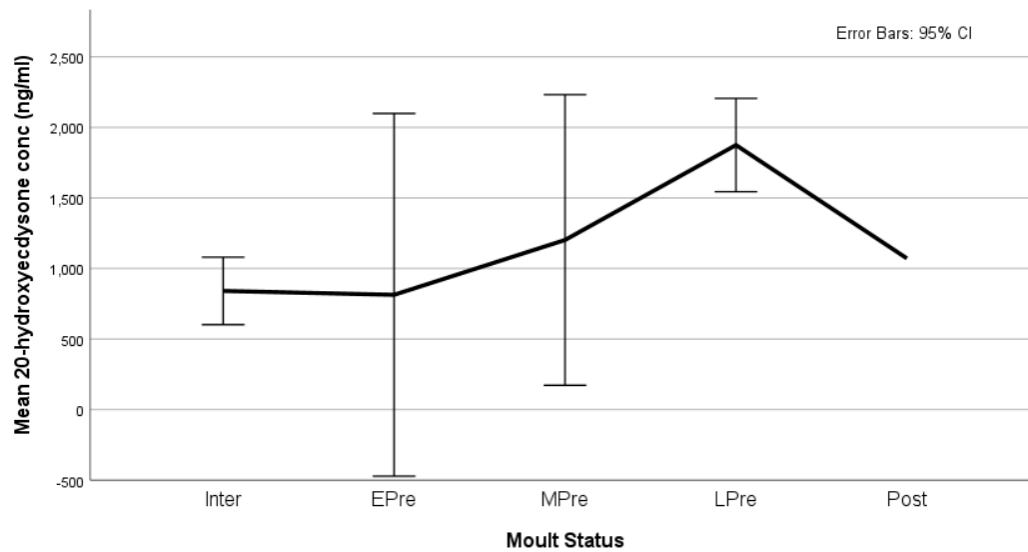
S2: Molt metadata for silencing trial

**Table S1:** Molt Data of control and treated *Cherax quadricarinatus* individuals, including sample ID, molt duration, group allocation, and molt status after experiment.

Sample ID	Molt Duration	Group G: Treatment A: Negative Control	Molt Status
2,1	40	G	Intermolt
2,2	18	G	N/A
2,3	51	A	Intermolt
2,4	23	A	Mid premolt
2,5	99	A	Intermolt
2,6	28	G	Early premolt

2,7	45	A	Intermolt
2,8	99	A	Intermolt
2,9	26	G	Mid premolt
2,10	28	G	Mid premolt
2,11	51	A	Intermolt
2,12	39	G	Intermolt
3,1	25	A	Intermolt
3,2	22	A	Intermolt
3,3	51	A	Intermolt
3,4	26	G	N/A
3,5	36	G	Intermolt
3,6	40	A	Early premolt
3,7	41	A	Late premolt
3,8	26	G	Intermolt
3,9	28	G	N/A
3,10	43	G	Intermolt
3,11	23	G	Late premolt
3,12	26	A	Intermolt
4,1	31	A	Early premolt
4,2	41	A	Intermolt
4,3	44	A	Intermolt
4,4	27	A	Early premolt
4,5	29	G	Post molt
4,6	34	G	Intermolt
4,7	25	G	Late premolt
4,8	99	A	Mid premolt
4,9	36	G	N/A
4,10	99	G	Intermolt
4,11	26	G	Intermolt
4,12	99	A	Late premolt

### S3: 20E ELISA across molt stages in *Cherax quadricarinatus*



**Figure S2.** Mean 20E Concentration Across the Experimental Group and Control Group at Different Molt Stages

### S4: CHH Superfamily Neuropeptide Sequence Data

>Cq-MIH-1

ATGGTTAAACACGCAACTCAGTCTTGCTCTGCGCTGAGGCCGTGGCTGATAGTGATG  
 GTGGTGGGTCTTCTTGTTACACAGACAACGCCAACGTTAACGGACGACTGTCCTGGA  
 GCCATGGGCAACAGACATATACACACCATGTTGTTGAGAGTATGTGGAGACTGCTAT  
 AATGTCCTCAGAGATCCTGAAATAGAGGTTGACTGCAGGAGCGGCTGCTTCACCAGT  
 GACACATTCAAGTCGTGTCTGGAGCTTATTGAACGTGGGGATGAGTTCTTTGATTTC  
 TGAGAAGGGTTGGCATTCTCAACGCTGGAGGCAAGTGA

>Cq-MIHL-1

ATGGGTAATCAGAAGTCTGAATGCTTCTACGCGCGGAGGGTGTGGCTGCTGGTGTG  
 ATAGCGCTTGTTGTACAGCAGTCAACCGCACGCTTCATTGAGGACGACTGTCCCGGA  
 GTAGTGGGTAACAGAAACGTACACAGCATGGTGATGAGAGTATGTGAAGATTGCTAT  
 AACGTCTTCAGGCATCCTGAAGTAGCTGTCGGGTGTAGCGTGAGGAAGAGTACCCAG  
 ACTTCTTGA

>Cq-MIHL-2

ATGGGTAATCAGAAAGTCTGAATGCTTCTACGCGCGGAGGGTGTGGCTGCTGGTGTTG  
ATAGCGCTTGTTGTACAGCAGTCAACCGCACGCTTCATTGAGGACGACTGTCCCGGA  
GTAGTGGGTAACAGAAACGTACACAGCATGGTGATGAGAGTATGTGAAGATTGCTAT  
AACGTCTTCAGGCATCCTGAAGTAGCTGTCGGGTGTAGGAGGGCCTGCTTCTCCAGT  
AAGATGTTCAAGTCTTGTCTCTCGGCTCTGCAGCGTGAGGAAGAGTACCCAGACTTC  
TTGAGATTAATTGGCATTCTCAACGCCGGACGAAAGTGA

>Cq-ITP

ATGTCTATATTCCAGGTTTGCACACTGGGAAGGATGTGTTTGTGGTTCCTGCTTATCAT  
AGGACTTCTCTCCCAGAGCCAGCAAGGTGCGGCCCATTTCTACAAGATCCAGCCTGG  
CACCTTCAAAGAGTTCCAATACATCAATTGCCAAGGAAGTTACAACAGGTCCACTTA  
CACCAAGTTAATCCGCATCTGTGAGGAATGTCAGAACCTCTACCGCAATGACTACAC  
CGTCTCGCTGGAATGCAAGGAGAACTGCTTCCAGAACGAGATGTTTGATAAATGTGT  
GCTGTCTCTGCTGCTGGCTCATAAAGAAGAGGAATATAAAAACATGATTACTTATGCC  
AGCGGGTAG

>Cq-CHH1

ATGACCTCCTGCAGGACGATGTGGTCACTGGTTGTGGTGGCGATGGTCGTCGTAGTG  
GTCACACTGGGTCCGACTGGCGTCCGTGGACGGTCCGTGGAAGGGTCGGTGAGGCT  
GGAACGACTGCTGTCCGGCCGGGTCATCTTCAGCACCTCTGGGTTTCCTCTCACAAGA  
TCACAGCCTCAACAAGAGACAAGTGTTGACCAAGCTTGCAAAGGCGTCTATGACC  
GAGCACTCTTCAAGAAGCTTGACCGAGTTTGTGATGATTGTTACAACCTCTATCGTAA  
ACCTTACGTTGCTGCCTCCTGCAGGGAAAAGTCTACAGTAACTTGGTGTTCCGTCAG  
TGTCTGGACGACCTGCTCCTTGTAGACGTTGTC ---missing --GTPCYC—

>Cq-CHHL

ATGTCACACTGTGCGTTACGTTAGTGGTAGTGTTGGTCGTTCTAACGACGTTGTGTTC  
TGGGCGTTCACTTTCTTCCGGGGAGGTTCAATGGCTTCTTCAGACGTCCCCCTACAAG  
AGCTTGCCTCAAGAGTACAATGTACGAAGGAGAGATTCAGGTCTTGAATACCACAGT  
GTTACTAAGAGAGCAGTCTTCGACTCACAGTGCAAAGGTTTCTACGACCGGGGCGTG  
TGGGCCAGGTTGAACCGCGTCTGTGTGCGACTGTCAGAATCTCTACAGATCACCTGAA  
ATAGAAAACGAGTGCAGAATGGGCTGCTTCGCTACCAAATACTTCACTTCATGTGTGT

CCAACCTCCTCCTGCCTGTGGATGAGTATCAAGACATGGCTGCTTTAGTCCGTGGATC  
ATAG

### **S5: Gene Block dsRNA Sequences for CHH Superfamily Neuropeptides**

>dsRNA1; silencing sequence MIH1-MIHL1-MIHL2

GCTGATAGTGATGGTGGTGGGTCTTCTTGTTACACCAGACAACGCCAACGTTAACGGA  
CGACTGTCCTGGAGCCATGGGCAACAGACATATACACACCATGTTGTTGAGAGTATG  
TGGAGACTGCTATAATGTCCTCAGAGATCCTGAAATAGAGGTTGACTGCAGGAGCGG  
CTGCTTCACGCTGGTGTTGATAGCGCTTGTTGTACAGCAGTCAACCGCACGCTTCATT  
GAGGACGACTGTCCCGGAGTAGTGGGTAACAGAAACGTACACAGCATGGTGATGAG  
AGTATGTGAAGATTGCTATAACGTCTTCAGGCATCCTGAAGTAGCTGTCGGGTGTAGC  
GTGAGGAAGAGTACCCACGTACACAGCATGGTGATGAGAGTATGTGAAGATTGCTAT  
AACGTCTTCAGGCATCCTGAAGTAGCTGTCGGGTGTAGGAGGGCCTGCTTCTCCAGT  
AAGATGTTCAAGTCTTGTCTCTCGGCTCTGCAGCGTGAGGAAGAGTACCCAGACTTC  
TTGAGATTAATTGGCATTCTCAACGC

>silencing sequence CHH-CHHL-ITP

CGGCCCATTTCTACAAGATCCAGCCTGGCACCTTCAAAGAGTTCCAATACATCAATTG  
CCAAGGAACTTACAACAGGTCCACTTACACCAAGTTAATCCGCATCTGTGAGGAATG  
TCAGAACCTCTACCGCAATGACTACACCGTCTCGCTGGAATGCAAGGAGAACTGCTT  
CCAGAACGGACGGTCCGTGGAAGGGTCGGTGAGGCTGGAACGACTGCTGTGGGCC  
GGGTCATCTTCAGCACCTCTGGGTTTCCTCTCACAAGATCACAGCCTCAACAAGAGA  
CAAGTGTTGACCAAGCTTGCAAAGGCGTCTATGACCGAGCACTCTTCAAGAAGCTT  
GACCGAGTTTGTGATGATTGAGGTTCAATGGCTTCTTCAGACGTCCCCCTACAAGAGC  
TTGCCTCAAGAGTACAATGTACGAAGGAGAGATTGAGGTCTTGAATACCACAGTGTT  
ACTAAGAGAGCAGTCTTCGACTCACAGTGCAAAGGTTTCTACGACCGGGGCGTGTG  
GGCCAGGTTGAACCGCGTCTGTGTCGAC