

Supporting Information for

Guanidinium-functionalized Interpolyelectrolyte Complexes Enabling RNAi in Resistant Insect Pests

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Primers Used in this Study.

dsRNA Synthesis

SfV-ATPase_dsRNA F	GAGGCTCTTCGTGAGATCTCAGG
SfV-ATPase_dsRNA R	GAAACGATCGTATGACGAGTAGCTG
SfCDC27_dsRNA F	ATTGTTCAAGAACCTATACAGGTTATCGTTTG
SfCDC27_dsRNA R	CAGGAGCTTGAGTCTCTGGTGTGATGCTGG
M13 F	TGTAACGACGACGGCCAGT
Sp6-T7 R	TAATACGACTCACTATAGGGAGCTCTCCCATATGGTGCAG

RT-qPCR

SfV-ATPase_qPCR F	TGTCCGTTCTACAAGACCGTGG
SfV-ATPase_qPCR R	TCACGGATGACGTTCCAGGTG
sfCDCqPCR F	CATGCCACTGACCACACTATGC
sfCDCqPCR R	TGTCACACCCAACAATGTGGC
SfKIF23qPCR F	AAGGAACTGATGGCACATTTGGAAATGAGG
SfKIF23qPCR R	AGTGGCGGTCAAGCGTTCTTCCAGAGCTCT
dsRNA_CDC27 F	CCACCAAGATGATTGTTCAAG
dsRNA_CDC27 R	GAGTCTCTGGTGTGATGCTGG
SfActin_qPCR F	AGATGACACAGATCATGTTCCG
SfActin_qPCR R	GAGATCCACATCTGTTGGAAG
GFP_qPCR F	TGAAGTTCATCTGCACCACCGG
GFP_qPCR R	TTGAAGAAGTCGTGCTGGCG

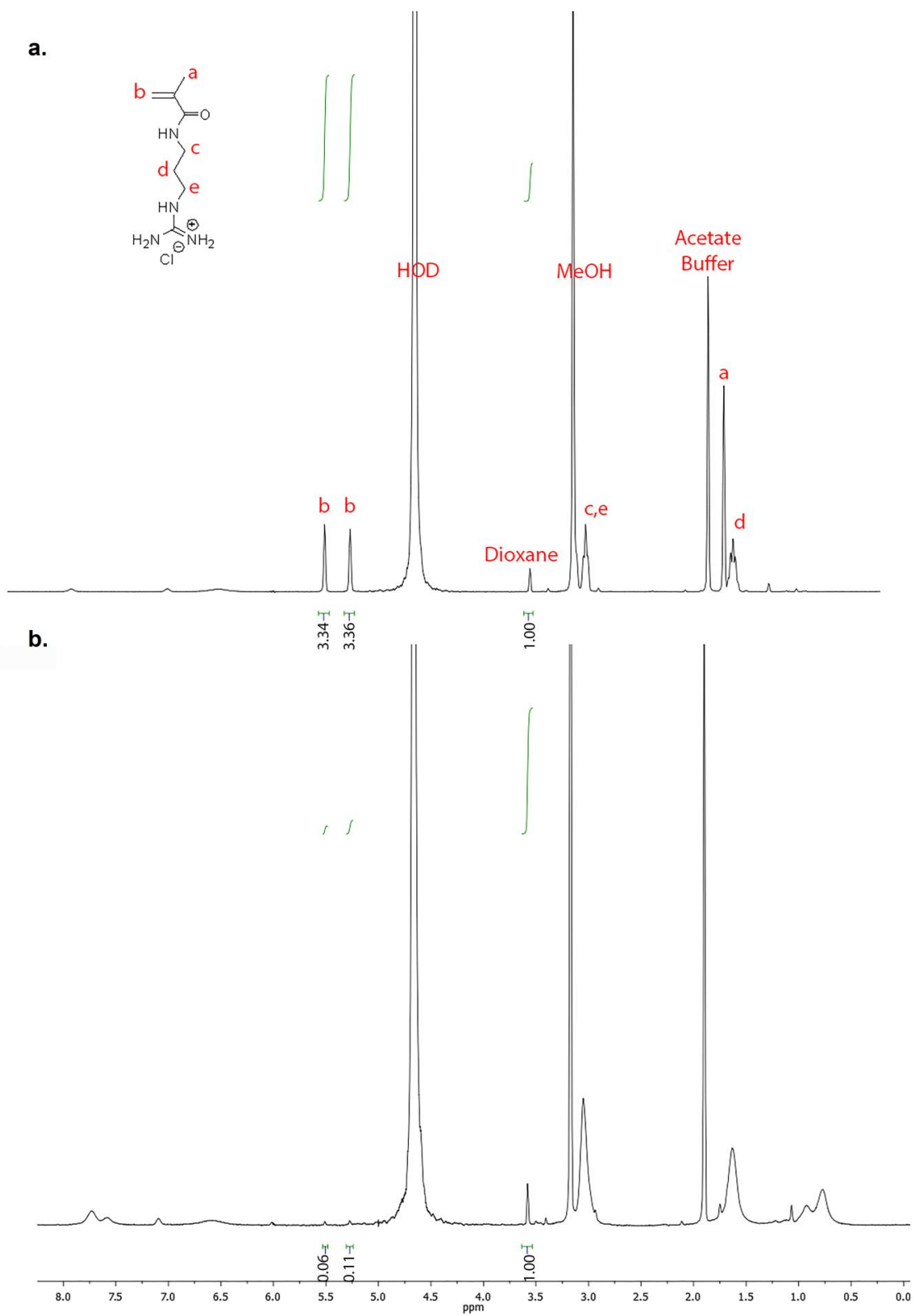


Figure S1. ^1H NMR spectra of pGPMA polymerization aliquots taken at (a) t_0 and (b) 19 hr.

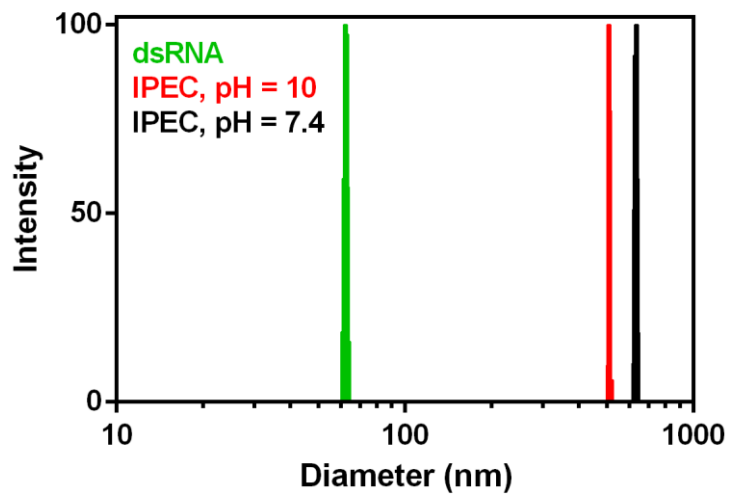


Figure S2. Hydrodynamic size histograms for pGPMA-dsRNA IPEC (8x weight ratio) at pH = 7.4 (black) and pH = 10 (red) and free dsRNA (pH = 7.4, green) as determined by dynamic light scattering (DLS) at 90° scattering angle.

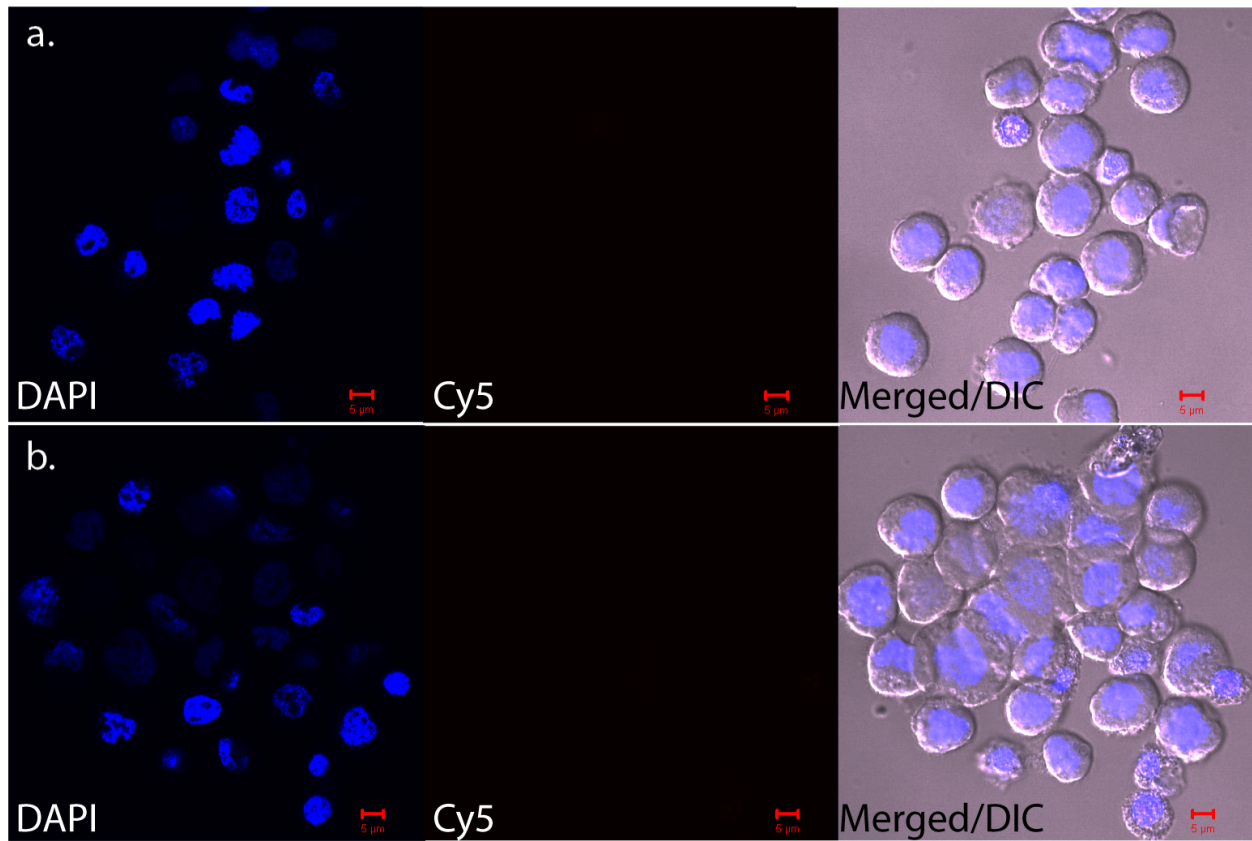


Figure S3. Sf9 cells treated with free Cy5-labeled dsRNA (red) after (a, top row) 24 hrs and (b, bottom row) 48 hrs. Nuclei were stained with DAPI (blue). Scale bars = 5 μm.

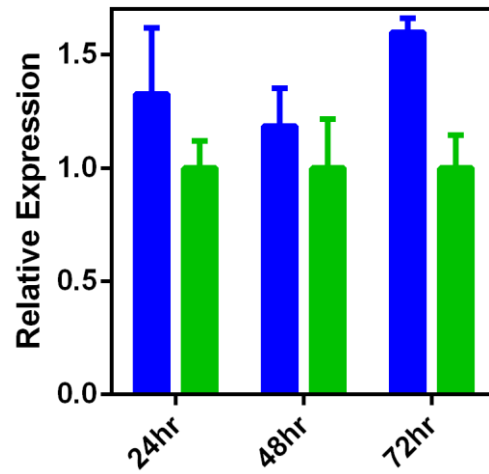


Figure S4. Expression of CDC27 determined by RT-qPCR in Sf9 cells following incubation with free pGPMA at identical concentration as used for 8x IPEC. Blue bars represent expression when polymer is added; green represents no treatment. Values are normalized to respective untreated controls. Error bars represent SEM.

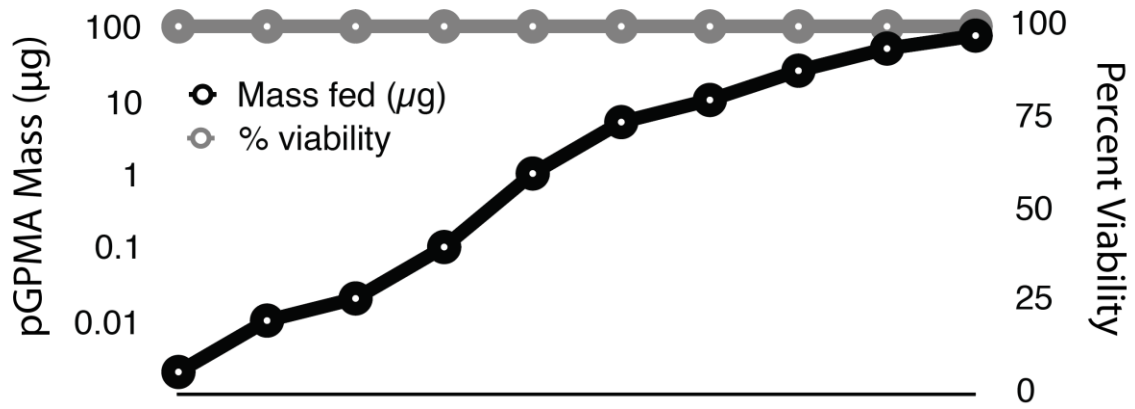


Figure S5. Survival of fall armyworm larvae after ingestion of pGPMA. Animals were directly fed masses indicated on the left y-axis (black line). The percentage of animals viable after feeding on right y-axis (grey line). (N = 4)