RhoGAP RGA-8 supports morphogenesis in *C. elegans* by polarizing epithelia through CDC-42

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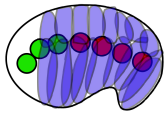
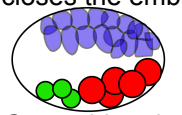
Gex (gut on the exterior) mutants block morphogenesis in *C. elegans* embryos

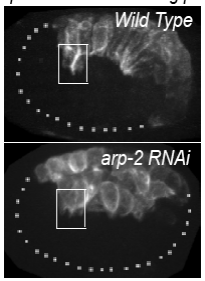


WT epidermis (blue) encloses the embryo



Gex epidermis fails to migrate

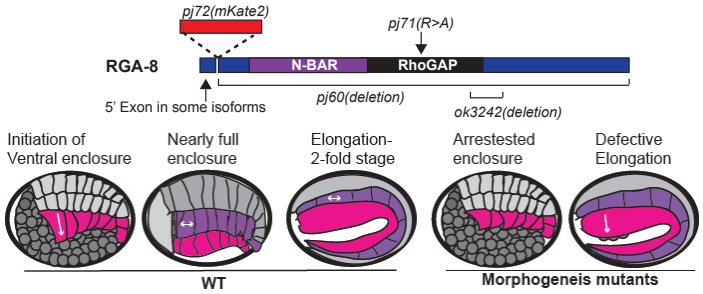
plin-26::vab-10 ABD::gfp



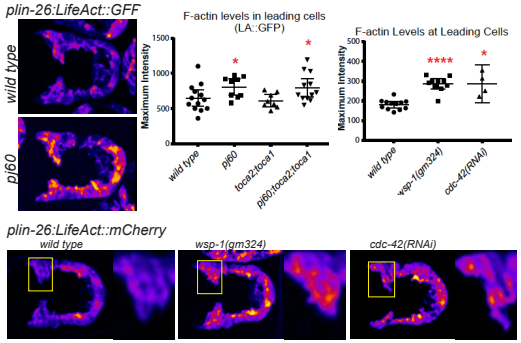
Epidermal F-actin is not polarized

RhoGAP RGA-8/RICH1/Nadrin/SH3BP1: *rga-8* alleles alter epidermal morphogenesis

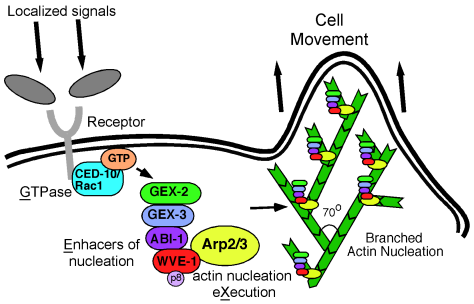
[*pj* alleles: Soto Lab CRISPR, *ok* allele from Stock Center]



Loss of *rga-8* and CDC-42 regulators increases F-actin in epidermis.

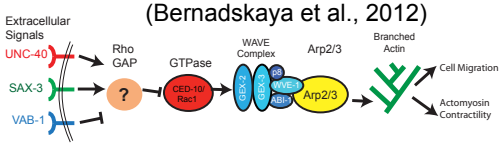


Cloning *gex* mutants showed branched actin promotes cell migrations of morphogenesis



How is branched actin regulated?

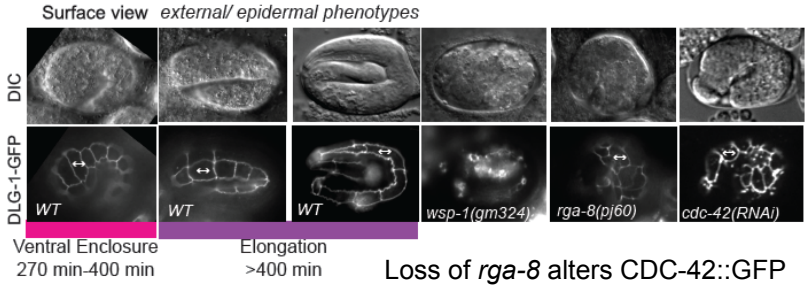
We identified extracellular signals involved. (Bernadskaya et al., 2012)



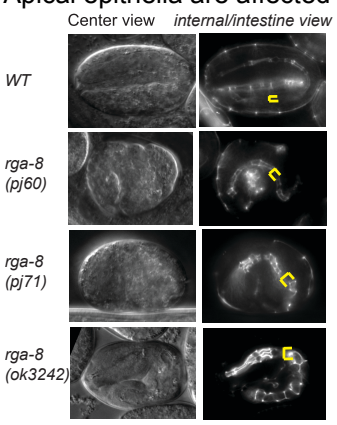
How are signals transmitted?

Characterizing GAPs for Rac1/CED-10 during morphogenesis identified…

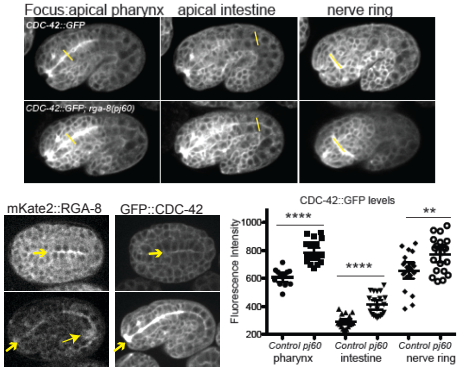
Mutations in rga-8, and in CDC-42 regulators, alter epidermal events.



Apical epithelia are affected

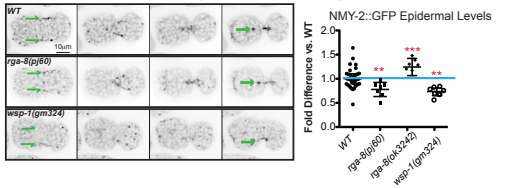


Loss of *rga-8* alters CDC-42::GFP apical enrichment in epithelia

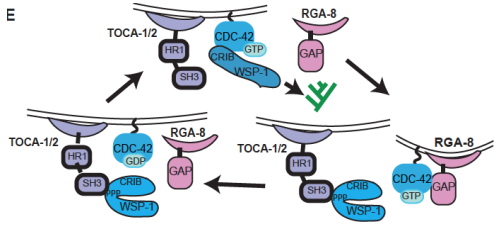


mKate2::RGA-8 is enriched in apical epithelia

Loss of *rga-8* and CDC-42 regulators decreases myosin during enclosure



Model for RGA-8 regulation of CDC-42



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