



**Figure S3** Similar to homozygous *spn-E* mutant egg chambers, dynein motor complex aggregates form and Gurken is not properly localized in some *spn-E* hemizygous mutant ovaries. *spn-E<sup>mutant</sup>/spn-E<sup>Δ125</sup>* were stained with  $\alpha$ -EGL (A-F, Red) to visualize the dynein motor complex and  $\alpha$ -GRK (A'-F', Green). (A) In wildtype (*spn-E<sup>Δ125</sup>/Balancer*) EGL localizes to and within the oocyte (A) and GRK forms a tight crescent at the dorsal-anterior corner of a stage 8-9 oocyte (B). (Egg chamber to the right of each panel). (B,C) In *spn-E<sup>4-48</sup>* and *spn-E<sup>23-17</sup>* no dynein aggregates form (B,C) and GRK is localized similar to wildtype (B',C'). These alleles represent the typical phenotype of the weaker *spn-E* alleles. (D-F) In *spn-E<sup>9A9</sup>*, *spn-E<sup>155-55</sup>*, and *spn-E<sup>653</sup>* dynein motor aggregates form (D-F) and GRK is not localized to the dorsal-anterior corner of the oocyte (D'-F'). These alleles represent the typical phenotype of the strong *spn-E* alleles. In the earlier chambers of *spn-E<sup>155-55</sup>* and *spn-E<sup>653</sup>* weak GRK expression is found within the oocyte (E',F', arrow).