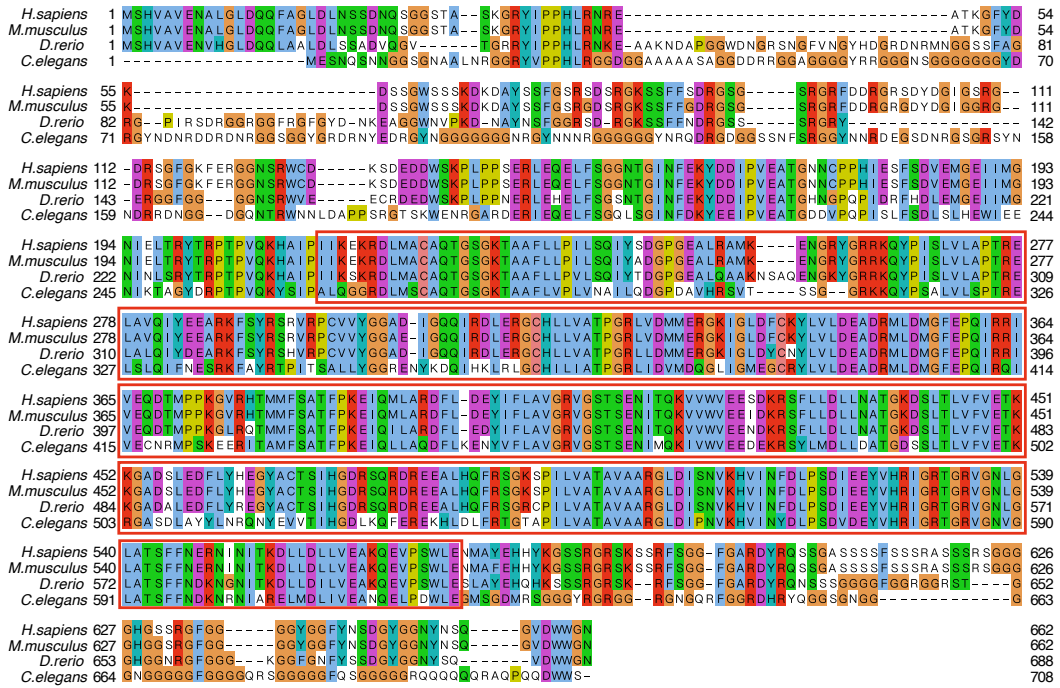
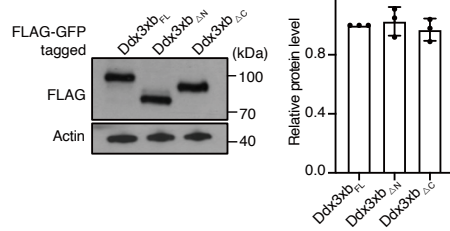


a

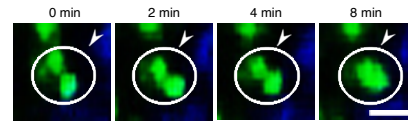


The conserved helicase domain is highlighted in the red boxes.

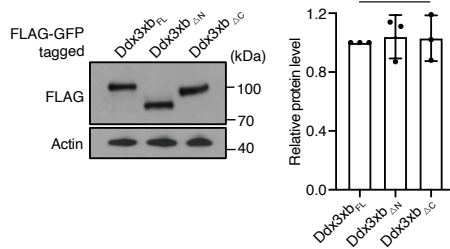
b



c



d



Supplementary information, Fig. S2 N-terminal IDR drives zebrafish Ddx3xb phase separation. a, Multi-alignment of protein sequences between human, mouse, zebrafish and *C. elegans*. **b,** Western blot (left) and statistical (right) analyses show protein level of different truncated versions of FLAG-GFP-tagged Ddx3xb in HEK293 cells. n = 3 biological replicates, error bars, mean \pm SD, *P* values were calculated by

the two-tailed Student' s *t*-test. **c**, Fusion upon contact of droplets formed by GFP-Ddx3xb protein in HEK293 cells. Scale bars, 2 μm . **d**, Western blot (left) and statistical (right) analyses show protein level of different truncated versions of FLAG-GFP-tagged Ddx3xb in zebrafish embryos. $n = 3$ biological replicates, error bars, mean \pm SD, *P* values were calculated by the two-tailed Student' s *t*-test.