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## **Dynactin suppresses the retrograde movement of apically localized mRNA in *Drosophila* blastoderm embryos**

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### **Supplementary Movie Legends**

#### **Supplementary Movie 1. *ftz* RNA particle movements in wild type embryos**

*In vitro* transcribed, fluorescently labeled *ftz* RNA moves bi-directionally in wild type syncytial blastoderm embryos. The apical side of the embryo is up and the basal is down. A relatively smooth minus run is marked in red and another minus run, interrupted by pauses and shorter or longer backward runs is marked in green. Movie is speeded up approximately 2.8 times and represents 80sec.

#### **Supplementary Movie 2. *ftz* RNA particle trails in wild type embryos**

Trail movie of a selected region of movie 1. Most of the *ftz* RNA particles shown move towards the minus ends of MTs. Two particles display plus runs. Movie is speeded up approximately 2.8 times.

#### **Supplementary Movie 3. *ftz* RNA movement in *Khc* mutants**

*In vitro* transcribed, fluorescently labeled *ftz* RNA moves bi-directionally in *Khc*<sup>27</sup> syncytial blastoderm embryos. The apical side of the embryo is up and the basal is down. Movie is speeded up approximately 6.5 times and represents 41sec.

#### **Supplementary Movie 4. *ftz* RNA movement in *KLP64D* mutants**

*In vitro* transcribed, fluorescently labeled *ftz* RNA moves bi-directionally in *KLP64D*<sup>k1</sup> syncytial blastoderm embryos. The apical side of the embryo is up and the basal is down. Movie is speeded up approximately 6 times and represents 77sec.

#### **Supplementary Movie 5. *ftz* RNA transport in the presence of the kinesin inhibitor AMP-PNP.**

*In vitro* transcribed, fluorescently labeled *ftz* RNA moves bi-directionally in syncytial blastoderm embryos preinjected with AMP-PNP. The apical side of the embryo is up and the basal is down. Movie represents 142sec and is speeded up approximately 9 times.

#### **Supplementary Movie 6. *ftz* RNA transport in *Glued* mutants**

*In vitro* transcribed, fluorescently labeled *ftz* RNA moves more frequently towards the plus end of MTs in *Glued1* syncytial blastoderm embryos. The apical side of the embryo is up and the basal is down. Movie is speeded up approximately 5 times and represents 63sec.