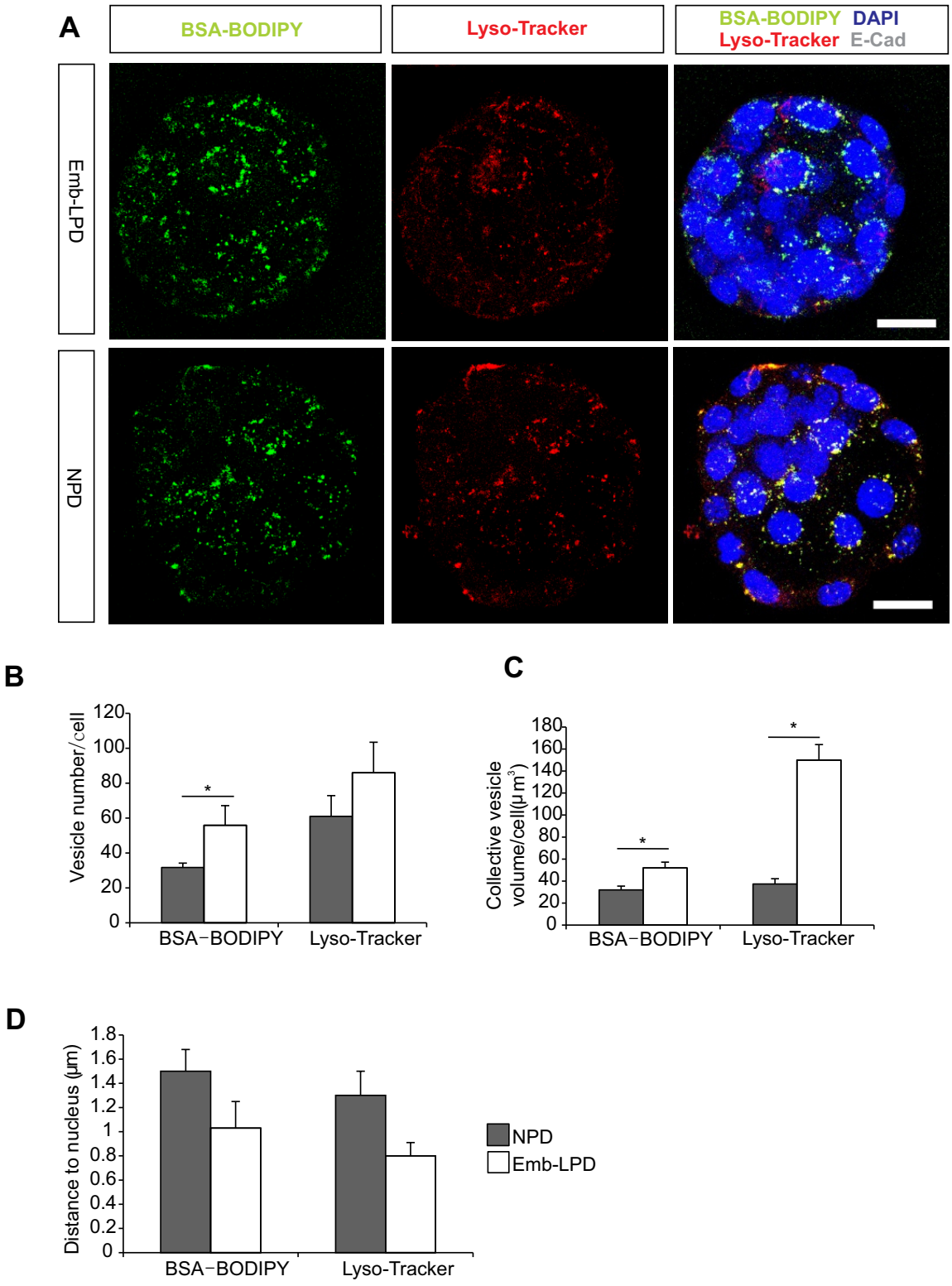


**Fig. S1. Endocytosis is increased in blastocyst TE following maternal Emb-LPD treatment using whole embryo scan method.** (A) Emb-LPD and NPD blastocysts following BSA-BODIPY (green) and Lyso-Tracker (red) endocytosis assay, fixation, nuclear labelling (DAPI, blue) and confocal microscopy. Bar=20 μm. (B,C) Emb-LPD blastocysts had increased numbers and collective volume of labelled vesicles. (D) Diet treatment had no effect on the distribution of labelled vesicles within blastocysts with respect to distance from TE nucleus. * $P<0.05$; $N$=6-7 mothers and 20-21 blastocysts per treatment.

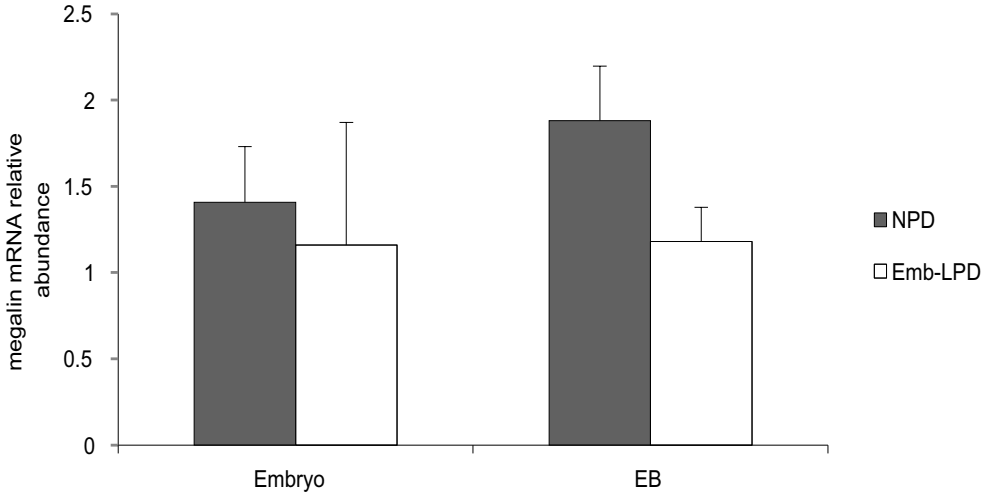


**Fig. S2. *Megalin* (*Lrp2*) mRNA expression is unchanged in blastocysts and EBs with respect to Emb-LPD and NPD treatments.** *Lrp2* expression is shown relative to *Ppib* and *Gapdh* house-keeping gene transcripts. *N*=7 mothers and 13-14 blastocysts individually analysed per treatment, and 6 ES cell clones for EB formation per treatment.

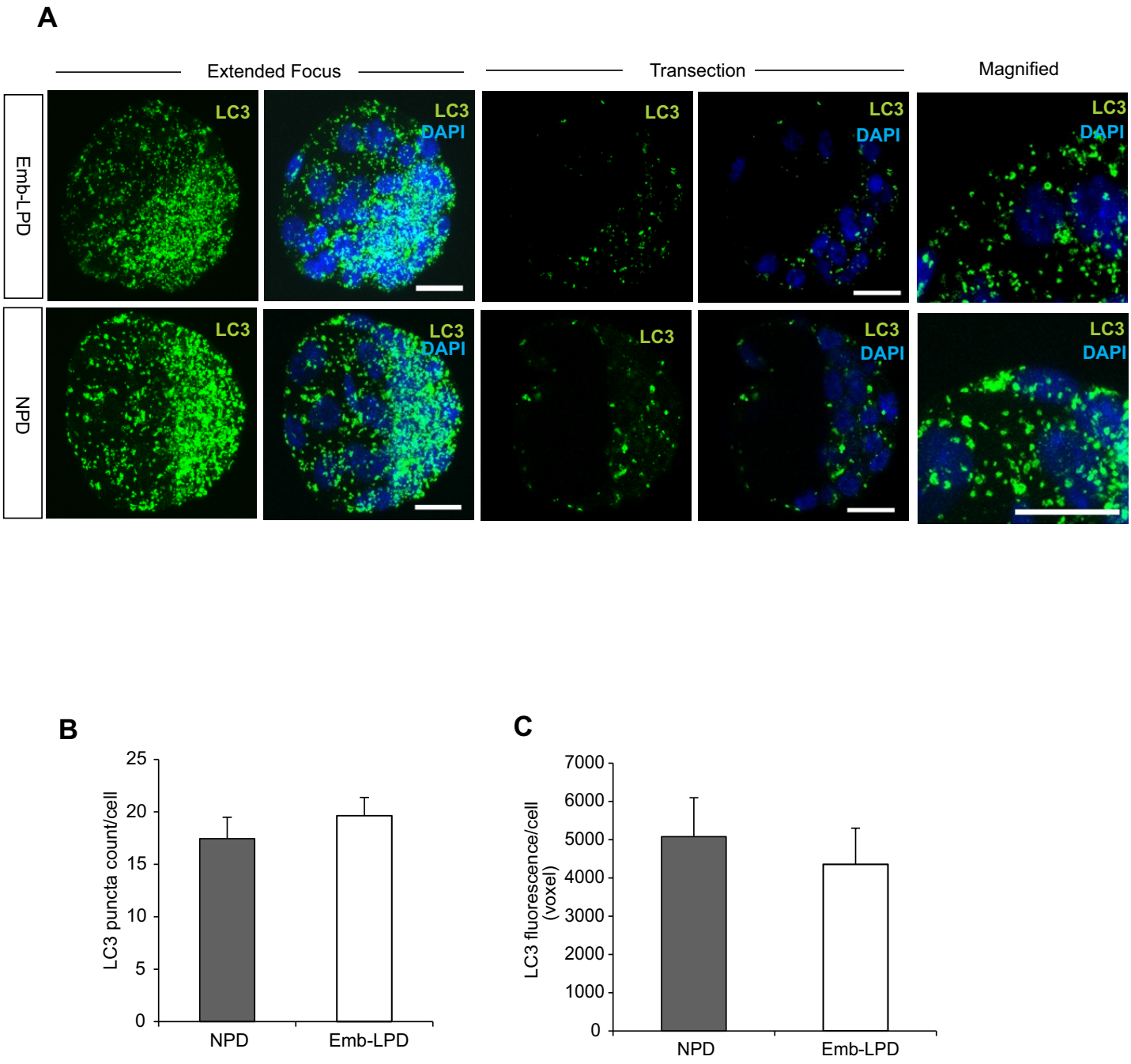


**Fig. S3. Emb-LPD and NPD blastocysts immunolabelled for LC3 marker for autophagosomes exhibit similar numbers and fluorescence intensity.** (A) Emb-LPD and NPD blastocysts either as accumulated z-series (left) or single mid-section (middle) and at higher magnification (right) following LC3 labelling showing punctate staining pattern. Bar=20 µm. (B,C) Number and fluorescence intensity of punctate labelled sites per cell is unchanged by diet treatment. *N*=6 mothers and 15-19 blastocysts per treatment.