



Supplementary Fig. 1. Morphology of the microtubules and the metaphase plate of oocytes during 44 h IVM. **(A)** The microtubules surrounding the chromosomes can be observed in the pro-metaphase II oocytes. **(B)** Chromosomes align on the metaphase plate and the microtubules form spindles in the mature (MII) oocytes. **(C–F)** Abnormal microtubular distribution in the MII oocytes. Blue: chromosomes; green: microtubules. Scale bar: 10 μ m.

Supplementary Table 1. The proportion of maturing and matured oocytes after 44 h of IVM culture.

EMF, G	0	(%)	25	(%)	50	(%)	75	(%)	100	(%)
PMII	13	(48.15)	17	(60.72)	16	(53.33)	21	(67.74)	13	(48.14)
MII	11	(40.74)	8	(28.57)	6	(20.00)	3	(9.68)	7	(25.93)
Abnormality	4	(14.81)	3	(10.71)	8	(26.67)	7	(22.58)	7	(25.93)
Total oocyte number	27		28		30		31		27	

G: Gauss

PMII: pro-metaphase II

MII: metaphase II