Supplementary Table SIV **Enriched canonical pathways within DEGs unique to the AMA GV/AMA MII oocyte comparison.**

Canonical pathways	Gene count	FDR[a]	Gene names
Breast Cancer Regulation by Stathmin1	30	2.09E-03	CAMK4, PPP2R2A, PPP1R3C, HRAS, PPP1CB, PPP1R14B, LIMK1, STMN1, PPM1L, TUBA3C/TUBA3D, PRKAR1B, PRKCE, ARHGEF3, TUBA3E, PRKD3, TP53, GNG4, CCNE2, GRB2, TUBB2A, PPP1R11, PPP2R5A, CDK1, GNAI3, CALM1 (includes others), CDKN1A, ITPR3, PIK3CD, ADCY7, CAMK2G
GADD45 Signaling	7	2.57E-02	TP53, PCNA, CCNE2, CCND2, CDKN1A, CDK4, CDK1
Oxidative Phosphorylation	17	4.90E-02	NDUFV1, ATP5G1, COX17, ATP5H, NDUFA7, NDUFS7, NDUFA1, NDUFA2, NDUFB11, NDUFV2, NDUFS8, NDUFB7, NDUFS6, CYCS, CYB5A, ATP5I, ATP5F1
Synaptic Long Term Potentiation	18	4.90E-02	CAMK4, PDIA3, GRM8, PPP1R3C, GRIA1, PPP1CB, HRAS, PPP1R11, PPP1R14B, PLCD3, CALM1 (includes others), PPP3CB, ITPR3, PRKAR1B, PRKCE, ATF4, PRKD3, CAMK2G
Mitochondrial Dysfunction	23	4.90E-02	NDUFV1, ATP5G1, COX17, ATP5H, UCP2, NDUFA7, NDUFS7, NDUFA1, NDUFA2, PDHA1, FIS1, PRDX3, NDUFB11, NDUFS8, NDUFV2, GPD2, NDUFB7, NDUFS6, CYCS, CYB5A, ATP5F1, ATP5I, PINK1
Regulation of Actin-based Motility by Rho	15	4.90E-02	ITGB1, PFN1, MYL6, ARPC5, PIKFYVE, PPP1CB, WASF1, LIMK1, RHOG, ARPC1A, RND3, RHOT1, ARPC3, PIP5KL1, MYL4
Actin Nucleation by ARP-WASP Complex	11	4.90E-02	ITGB1, RHOG, ARPC1A, RND3, RHOT1, GRB2, GNA12, ARPC5, ARPC3, HRAS, WASF1

AMA, advanced maternal age; DEG, differentially expressed gene; GV, germinal vesicle; MII, metaphase II.
DEG enrichment analysis was conducted using IPA.
[a]Benjamini-Hochberg multiple testing correction *P*-value (FDR).