

1 **Supplementary Table 1.** The sensitivity and intra- and inter-assay coefficients of
2 variation for E, P, LEP, and IGF-1¹.

Item	E	P	LEP	IGF-1
Intra-assay CV	8.1%	7.8%	5.4%	5.7%
Inter-assay CV	9.2%	10.5%	9.4%	11.2%
Sensitivity	10 pg/mL	100 ng/mL	100 ng/mL	1.0 µg/mL

3 ¹CV, coefficients of variation; E, estrogen; P, progesterone; LEP, leptin; IGF-1, insulin-
4 like growth factor-1.

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20 **Supplementary Table 2.** Metabolic Pathway Analysis for amniotic fluid metabolites.

Pathway Name	Matched Metabolites	Raw <i>P</i>-value	-log(p)	FDR
Aminoacyl-tRNA biosynthesis	Arginine, Tyrosine (2/75)	0.023753	3.74	0.64119
Arginine and proline metabolism	Arginine, Creatine (2/77)	0.024962	3.6904	0.64119
D-Arginine and D-ornithine metabolism	Arginine (1/8)	0.02632	3.6374	0.64119
Amino sugar and nucleotide sugar metabolism	Fucose, Fructose (2/88)	0.03206	3.4402	0.64119
Citrate cycle (TCA cycle)	Citric acid (1/20)	0.064663	2.7386	0.72846
Thiamine metabolism	Tyrosine (1/24)	0.077147	2.562	0.72846
Phenylalanine, tyrosine and tryptophan biosynthesis	Tyrosine (1/27)	0.086414	2.4486	0.72846
Glycolysis or Gluconeogenesis	Lactic acid (1/31)	0.098643	2.3162	0.72846
Pyruvate metabolism	Lactic acid (1/32)	0.10168	2.2859	0.72846
Propanoate metabolism	Lactic acid (1/35)	0.11073	2.2007	0.72846

21 Total number of compounds involved in each pathway and metabolites matched from

22 the uploaded data; *P* is the original *P*-value calculated from the enrichment analysis.

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