Supplementary Table 1 The transcriptome datasets related to gestational diabetes mellitus

Series	**Status**	**Description**	**(M/O/B)**	**Research theme**	***Organism***	**Tissue**	**Sample count**	**Experimental type**	**Platform**	**Techniques**	**Sample groups**	**Sequencing type**	**PMID**	**URL of datasets**
GSE2956	18-Jul-05	Gestational Diabetes Induces Placental Genes	M	Placenta-related	*Homo sapiens*	Placenta	1	Expression profiling by array	GPL310	Affymetrix Human Genome U133A Array	HC vs GMD	Microarray(mRNA-array)	14633856	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE2956

		for Chronic Stress and Inflammatory Pathways											
GSE19649	23-Dec-10	Genomic expression profiles of blood	M	Placenta-related	*Homo sapiens*	Blood, Placenta	3 blood, 2 placent	Expression profiling by array	GPL7350	Aalborg University Illumina human-6 v2.0 expression beadchip	HC vs GMD	Microarray(mRNA-array)	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE19649

		and placenta in Chinese women with gestational diabetes					a	y					
E-MEXP-3382	23-Aug-12	Transcriptional profiles of microRNAs	M	Circulating biomarkers	*Homo sapiens*	Blood	6	Transcription profiling by Microarray	/	Agilent Whole Human Genome 4×44K Microarray	ex_vivo_design vs disease_state_design	Microarray(miRNA-array)	24279768	https://www.ebi.ac.uk/biostudies/ArrayExpress/studies/E-MEXP-3966?query=E-MEXP-3382

RNAs from peripheral blood mononuclear cells of gestational diabetes mellitus patien	arra y	(One-color, v1, Design ID 014850, Catalog No. G4112F)	vs co-expression_design ign

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E-MEXP-3349	25-Aug-12	Transcriptional profile of peripheral blood mononuclear cells from Gestational Diabe	M	Circulating biomarkers	*Homo sapiens*	Blood	17	Transcription profiling by array	Agilent Whole Human Genome 4×44K Microarray (One-color, v1, Design ID 014850, Catalog No. G4112F)	Age37 seconds, 35 seconds, 40 seconds, 23 seconds, 33 seconds, 28 seconds, 24 seconds, 39 second	Microarray(miRNA-array)	248855 68	https://www.ebi.ac.uk/biostudies/ArrayExpress/studies/E-MEXP-3966?query=E-MEXP-3349

		tes Mellitus Patients								s, 29 seconds, 30 seconds, 38 seconds			
GSE49524	8-Aug-13	Differential expression profiles of human primary	O	Placenta-related	*Homo sapiens*	Umbilical cord blood	6	Expression profiling by array	GPL70 20	NuGO array (human) NuGO_Hs1a 520180	HC vs GMD	Microarray(mRNA-array)	24667242	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE49524

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MEXP-3966	-Oct-13	cription profiling of mRNAs from peripheral blood mononuclear cells of gestational	ulating biomarkers	*mo sapiens*	d	scription profiling by array	Whole Human Genome 4×44K Microarray (One-color, v2, Design ID 026652, Catalog No. G4845A)	34, 31	ray(miRNA-array)	biostudies/ArrayExpress/studies/E-MEXP-3966?query=E-MEXP-3966

		diabetes mellitus patients gdm.												
GSE65737	25-Feb-15	Differential microarray expression profile analysis of	O	Circulating biomarkers	*Homo sapiens*	Umbilical cord vein blood	6	Expression profiling by array	GPL16956	Agilent-045997 Arraystar human lncRNA microarray V3 (Probe Name Version)	NC vs GMD	Microarray(lncRNA-array)	25997, 33475530	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE65737

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		es-induced macrosomia													
GSE70493	3-Aug-15	Epigenome-wide and Transcriptome-wide Analyses Reveal	M	Circulating biomarkers	*Homo sapiens*	Placenta	63	Expression profiling by array	GPL17586	[HTA-2_0] Affymetrix Human Transcriptome Array 2.0 [transcript (gene) version]	GDM vs NGT	Microarray(mRNA-array)	26244062	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE70493

Gestational Diabetes is Associated with Alterations in the Human Leukocyte Antigen Comp

		lex [gene expression]												
GSE70494	3-Aug-15	Epigenome-wide and Transcriptome-wide Analyses Reveal Gestat	M	Circulating biomarkers	*Homo sapiens*	Placenta	145	Expression profiling by array, Methylation profiling	GPL13534, GPL17586	Illumina HumanMethylation450 BeadChip (HumanMethylation450_15017482), [HTA-2_0] Affymetrix Human Transcriptome Array 2.0 [transcript	HC vs GMD	Microarray(DNA methylation, mRNA-array)	26244062	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE70494

ional Diabetes is Associated with Alterations in the Human Leukocyte Antigen Complex	by arra y	(gene) version]

GSE51546	1-Jan-16	Maternal-diabetes induced gene expression changes in the umbilical cord	O	Placenta-related	*Homo sapiens*	Umbilical cord	12	Expression profiling by array	GPL10558	Illumina HumanHT-12 V4.0 expression beadchip	CONTROL vs GDM	Microarray	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE51546
GSE87	24-	Comparativ	O	Placenta	*Homo*	Umbilical	10	Expressio	GP	HumanHT-	CONTROL vs	Microarray(mR	https://www.ncbi.nlm.nih.gov/geo/query/acc.c

295	Sep-16	e study of the transcriptome of HUVECs from infants born to mothers diagnosed with	-related	*sapiens*	cord	n profiling by array	L10558	12 expression beadchip	V4.0	GDM	NA-array)	gi?acc=GSE87295

		GDM and controls.												
GSE98043	22-Apr-17	Circulating miRNAs for gestational diabetes mellitus	M	Circulating biomarkers	*Homo sapiens*	Plasma	4	Non-coding RNA profiling by array	GPL21575	Agilent-070156 Human_miRNA_V21.0_Microarray 046064 (Feature Number version)	NC vs GDM	Microarray(miRNA-array)	34126831	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE98043
GSE92772	31-D	RNA sequencing	M	Circulating	*Homo sapi*	Blood	32	Non-coding	GPL16791	Illumina HiSeq 2500 (Homo	NGT vs GDM	scnRNA-Seq, RNA-	29358694	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE92772

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		es (GDM) pregnant women					high throughput sequencing							
GSE89497	24-Jul-18	Single-cell RNA-seq reveals the diversity of trophoblast	M	Placenta-related	*Homo sapiens*	Placenta	764	Expression profiling by high throughput	GPL20301	Illumina HiSeq 4000 (Homo sapiens)	8 week vs 24 week	RNA-Seq	30042384	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE89497

		subtypes and patterns of differentiation in the human placenta							sequencing					
GSE10355	1-Aug-2	Human Feto-placenta	O	Placenta-related	*Homo sapiens*	Placenta	37	Expression profi	GPL6244	[HuGene-1_0-st] Affymetrix Human Gene	AEC vs VEC	Microarray (mRNA-array)	30091044	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE103552

18	ntal Arterial and Venous Endothelial Cells are Differentially Programmed by Gestational	ted	ling by array	1.0 ST Array [transcript (gene) version]

		Diabetes Mellitus Resulting in Cell-specific Barrier Function Changes												
GSE11376	31 -	Gestational	O	β-cell	*Rattus*	Pancreati	12	Expression	GPL22	Illumina HiSeq 4000	LF vs HFS	RNA-Seq	312	https://www.ncbi.nlm.nih.gov/geo/query/acc.c

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GSE14427 6	7-Jul- 20	Gestational diabetes mellit	M	Placenta-related	*Rattus norvegicus*	Placenta	6	Expression profiling	GPL14844	Illumina HiSeq 2000	CONTROL vs STZ	RNA-Seq	32595139	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE144276

		us alters placental structure, efficiency, and plasticity						by high throughput sequencing						
GSE154377	19-Oct-20	Cell-free DNA Methylation and	M	Circulating biomarkers	*Homo sapiens*	Plasma	134	Expression profiling by	GPL20301	Illumina HiSeq 4000 (Homo sapiens)	CONTROL vs GDM	RNA-seq	33045922	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE154377

		Transcriptomic Signature Prediction of Pregnancies with Adverse Outcomes [RNA-seq]						high throughput sequencing						
GS	20	Human	M	Placenta	*Homo*	Chorion	12	Non-GP	GP	Illumina		CONT	miRNA /	https://www.ncbi.nlm.n

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		As Associated with Skeletal Muscle Insulin Sensitivity												
GSE173193	4-May-21	Single cell RNA-sequencing	M	Placenta-related	*Homo sapiens*	Placenta	8	Expression profiling	GPL24676	Illumina NovaSeq 6000	GDM vs PE vs GL vs Control	scRNA-Seq	34025588; 36111515	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE173193

		reveals placental cellular heterogeneity in adverse pregnancy						by high throughput sequencing				71		
GSE11486	24-May	Circulating exosomal	M	Predictive mo	*Homo sapiens*	Exosomes	28	Non-coding RNA	GPL18573	Illumina NextSeq 500	CONTROL vs GDM	miRNA-Seq	34416903	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE114860

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E13673	-Jul-21	ional diabetes exposure induces an altered cardiac transcriptome that is associated	cell / Islet function	*tus nor vegicus*	iac	essionn profiling by high throughput sequencing	L22396	HiSeq 4000	LF	Seq	ih.gov/geo/query/acc.cgi?acc=GSE136737

		with impaired cardiac function in the rat offspring												
GSE147039	25-Aug-21	Gene expression in the F1 and F2	O	β-cell / Islet function	*Mus musculus*	Hippocampus	15	Expression profiling by array	GPL6887	Illumina MouseWG-6 v2.0 expression beadchip	F1-GDM vs F2-GDM vs Control	Microarray (RNA-array)	34417446	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE147039

		mouse hippocampus with intrauterine hyperglycemia exposure						y						
GSE18273	27-Au	Circulating circRNA	M	Predictive mo	*Homo sapiens*	PBMCs	12	Non-coding RNA	GPL28148	Agilent-084217 CapitalBio Technology	HC vs GDM	Microarray(circRNA-array)	35094	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE182737

	g-21	signature in pregnancies with gestational diabetes mellitus	dels			profiling by array	Human CircRNA Array v2 [full-layout]					
GSE154415	31-Dec-21	Integrated analysis of the transc	M	Placenta-related	*Homo sapiens*	Placenta	24	Expression profiling by	GPL20301	Illumina HiSeq 4000	HC vs GDM	meRIP-Seq, RNA-Seq /	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE154415

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GSE154414	31-Dec-21	RNA sequence of gestational diabetes mellitus (GDM) and healthy control placentas	M	Placenta-related	*Homo sapiens*	Placenta	8	Expression profiling by high throughput sequencing	GPL20301	Illumina HiSeq 4000	HC vs GDM	RNA-Seq	/ https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE154414

		l placentas										
GSE154413	31-Dec-21	Integrated analysis of the transcriptome-wide m6A methylome in gestat	M	Placenta-related	*Homo sapiens*	Placenta	16	RIP-Seq	GPL20301	Illumina HiSeq 4000 (Homo sapiens)	CONTROL vs GDM	RIP-Seq / https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE154413

		ional diabetes mellitus and healthy control placentas [meRIP-seq]												
GSE19411	21-Jan	Exosomal RNA	M	Predictive	*Homo sapiens*	Blood exos	6	Expression	GPL22120	Agilent-078298 human	GDM vs CONT	Microarray(mRNA-	/	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE194119

9	n-22	expression profiles and their prediction performance in gestational diabetes mellitus patien	mo dels	*ens*	omes	profiling by array; Non-coding RNA profiling by array	ceRNA array V1.0 4X180K [Probe Name Version]	ROL	array, lncRNA-array, circRNA-array)	

		ts with macrosomia										
GSE200983	21-Apr-22	Effect of O-GlcNAc Transferase (OGT) siRNA in trophoblastic BeWo	M	Placenta-related	*Homo sapiens*	Placenta	6	Expression profiling by high throughput sequencing	GPL20301	Illumina HiSeq 4000 (Homo sapiens)	siRNA vs O-GlcNAc Tansferase(siOGT)	RNA-seq /	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE200983

		cells												
GSE20334	31-May-22	Expression profiles of placenta and umbilical cord blood with or without gestat	B	Circulating biomarkers	*Homo sapiens*	Umbilical cord blood	84	Expression profiling by high throughput sequencing	GPL24676	Illumina NovaSeq 6000 (Homo sapiens)	CONTROL vs GDM	RNA-Seq	35606885	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE203346

		ional diabetes mellitus (GDM)												
GSE21699	3-Nov-22	Characterization of human plasma pregnancy-associated diabetes mellitus (GDM)	M	Circulating biomarkers	*Homo sapiens*	Plasma	328	Non-coding RNA profiling by high throughput	GPL24676	Illumina NovaSeq 6000	Normal vs GH vs GDM vs PE	miRNA-Seq	35926094	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE216997

associated miRNAs at first trimester and their association with pregnancy complications

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		[cohort 2]												
GSE192813	9-Nov-22	Plasma exosomal microRNAs associated with metabolism as early predictor of	M	Circulating biomarkers	*Homo sapiens*	Plasma sEVs	24	Non-coding RNA profiling by high throughput sequencing	GPL16791	Illumina HiSeq 2500	NGT vs GDM	miRNA-Seq	35926094	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE192813

		gestational diabetes mellitus												
GSE213799	16-Nov-22	Chemerin-induced down-regulation of placenta-derive	O	Placenta-related	*Homo sapiens*	Placenta	14	Non-coding RNA profiling by high throughput	GPL11154	Illumina HiSeq 2000	HC vs GDM	miRNA-Seq	36359855	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE213799

d exo-somal miR-140-3p and miR-574-3p promotes umbilical vein endothelial cells	sequenci ng

		prolif eratio n, migra tion, and tube forma tion in gestat ional diabet es mellit us												
GS E20	23 -	Syste matic	M	Plac enta	*Ho mo*	Place nta	6	Non- codi	GP L24	Illumina NovaSeq	HC vs GDM	lncRN A-Seq	/	https://www.ncbi.nlm.nih.gov/geo/query/acc.c

6041	Nov-22	characterization of human placenta-derived circRNAs and identification of autop	-related	*sapiens*	ng RNA profiling by high throughput sequencing	676	6000	gi?acc=GSE206041

		hagy-related circRNAs in gestational diabetes mellitus [lncRNA]												
GSE233633	5-Jul-23	Gestational diabetes	M	Placenta-*mus*	*Mus musculus*	Uterus, Vagina	16	Expression	GPL30172	NextSeq 2000	GDM vs CONTROL	RNA-Seq	38310089	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE236335

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		maternal immunity and the vaginal microbiota												
GSE22899	21-Jul-23	RNA sequencing profile of cord blood	O	Circulating biomarkers	*Homo sapiens*	Umbilical cord Blood	60	Expression profiling by high	GPL24676	Illumina NovaSeq 6000	Lean vs Overweight / high GWG vs GDM	RNA-Seq	37470310	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE228990

		endothelial progenitor cells						throughput sequencing						
GSE212309	18-Jan-24	Single-cell RNA-sequencing of umbilical cord blood reveal	O	Circulating biomarkers	*Homo sapiens*	Umbilical cord Blood	7	Expression profiling by high throughput sequ	GPL24676	Illumina NovaSeq 6000	HC vs GDM	scRNA-Seq	38188508	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE212309

		s impaired fetal immune homeostasis by gestational diabetes mellitus						enci ng						
GSE24279	29 -	Serum	M	Circulating	*Homo*	Serum	28	Expression	GPL21	[miRNA-4] Affymetrix	CONTROL vs	Microarray(mi	381	https://www.ncbi.nlm.nih.gov/geo/query/acc.c

3374	Feb-24	exosomal miRNA profile in pregnancies with gestational diabetes based on pancreatic	ing biomarkers	*sapiens; synthetic construct*	maternal exosomes, serum placental exosomes	n profiling by array	572	Multispecies miRNA-4 Array [ProbeSet ID version]	preGDM (high/low HOMA-%β)	RNA-array)	56	gi?acc=GSE243374

		β-cell function											
GSE267259	12-May-24	RNAseq between gestational diabetes mellitus and healthy control	M	Circulating biomarkers	*Homo sapiens*	Serum	8	Expression profiling by high throughput sequencing	GPL18573	Illumina NextSeq 500	HC vs GDM	RNA-Seq	/ https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE267259

		l groups												
GSE255246	16-Aug-24	Intrauterine hyperglycemia during late gestation caused mitochondrial	O	β-cell / Islet function	*Mus musculus*	Skeletal muscle	10	Expression profiling by high throughput sequencing	GPL24247	Illumina NovaSeq 6000 (Mus musculus)	CTR vs GDM	RNA-seq	39043630	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE255246

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E-MTAB-11439	27-Nov-24	Placental-Liver Crosstalk in the Control of Pregnancy	M	Placenta-related	*Mus musculus*	Liver	8	RNA-seq of coding RNA	GPL21103	Illumina HiSeq 4000	Wild type genotype vs Igf2-H19 misexpression	RNA-Seq	/	https://www.ebi.ac.uk/biostudies/ArrayExpress/studies/E-MEXP-3966?query=E-MEXP-3966
GSE250374	16-Dec-24	METTL3 mediates m6A modificatio	M	Placenta-related	*Homo sapiens*	Placenta	12	MeRIP-seq	GPL24676	Illumina NovaSeq 6000	GDM vs NC	MeRIP-Seq	/	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE250374

		n of hsa_circ_0072380 to regulate the progression of gestational diabetes mellitus																
GS	26	ACSS	M	β-	*Mu*	Panc	78	Expr	GP	Illumina		NP	vs	scRNA-	403	https://www.ncbi.nlm.n		

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		ession of gestational diabetes (scRNA-Seq)												
GSE289077	7-Mar-25	NRF2 deficiency leads to inadequate beta	M	β-cell / Islet function	*Mus musculus*	Pancreatic islets	15	Expression profiling by high thro	GPL21103	Illumina HiSeq 4000 (Mus musculus)	Non-pregnant vs Pregnant	RNA-Seq	40054060	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE289077

		cell adaptation during pregnancy and gestational diabetes						ugh put sequencing						
GSE267340	16-Apr-	Single cell RNA sequencing	M	Placenta-related	*Homo sapiens*	Placenta	4	Expression profiling	GPL24676	Illumina NovaSeq 6000 (Homo sapiens)	GDM vs CONTROL	scRNA-Seq	40394177	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE267340

	25	of placenta in patients with gestational diabetes during term pregnancy						by high throughput sequencing					
GSE24931	5-May	Discrete placenta	M	Placenta -	*Homo sapi*	Placenta	54	Expression	GPL11154	Illumina HiSeq 2000	GDMA 1 vs GDMA	RNA-Seq	/ https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE249311

1	- 25	ntal gene expression signatures of diabetes during pregnancy	rela ted	*ens*		profiling by high throughput sequencing			2 vs T2DM vs Healthy			
GSE20604 2	11-Jun-	Systematic characterization	M	Placenta-related	*Homo sapiens*	Placenta	6	Non-coding RNA	GPL20301	Illumina HiSeq 4000 (Homo sapiens)	Healthy pregnant	miRNA / -Seq	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE206042

25	ation of human placenta-derived miRNAs and identification of autophagy-related	ted	profiling by high throughput sequencing	women vs GDM

		d miRNAs in gestational diabetes mellitus [miRNA-seq]											
GSE284329	30-Jul-25	Multi-Omics Profiling Reveal	M	Circulating biomar	*Homo sapiens*	PBMCs	17	Expression profiling	GPL28038	DNBSEQ-G400 (Homo sapiens)	CTL vs GDM	RNA-Seq	40715462	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE284329

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E-MTAB-9203	2-June-25	RNA-seq of human first and second trimester placenta	M	Placenta-related	*Homo sapiens*	Placenta	14	RNA-seq of coding RNA, Human-High-throughput sequ	GPL11154	Illumina HiSeq 2000	Second trimester vs First trimester	RNA-Seq	/ https://www.ebi.ac.uk/biostudies/ArrayExpress/studies/E-MEXP-3966?query=E-MTAB-9203

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GSE278861	10-Dec-24	Single-cell RNA sequencing identifies Endothelial derived HBEGF promoting	O	β-cell / Islet function	*Mus musculus*	Pancreatic islets	9	Expression profiling by high throughput sequencing	GPL23479	BGISEQ-500 (Mus musculus)	Virgin vs GD	scRNA-Seq	/	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE278861

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GSE23714	29-Sep-23	Excess folic acid supplementation increases adiposity and impacts insulin sensiti	B	β-cell / Islet function	*Mus musculus*	Liver	40	Expression profiling by high throughput sequencing	GPL19057	Illumina NextSeq 500 (Mus musculus)	GDM vs CONTROL	RNA-seq	/	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE237149

vity in femal e mice durin g pregn ancy and has sex-specif ic effects on fetal offspr ing

GSE234741	16-Jun-23	Multiparity increases the risk of diabetes by impairing proliferative capacity of beta cells II	M	β-cell / Islet function	*Mus musculus*	Pancreatic islets	2	Expression profiling by high throughput sequencing	GPL21273	HiSeq X Ten (Mus musculus)	Virgin vs MP	scRNA-Seq	37903900	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE234741

GSE23474	16-Jun-23	Multiparity increases the risk of diabetes by impairing proliferative capacity of beta cells I	M	β-cell / Islet function	*Mus musculus*	Pancreatic islets	11	Expression profiling by high throughput sequencing	GPL24247	Illumina NovaSeq 6000 (Mus musculus)	Virgin vs MP	RNA-Seq	37903900	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE234740

GSE13097	30-May-19	Induction of alpha cell-restricted Gc in dedifferentiating beta cells contributes to stress-induc	M	β-cell / Islet function	*Mus musculus*	Pancreatic islets	6	Expression profiling by high throughput sequencing	GPL17021	Illumina HiSeq 2500 (Mus musculus)	NGT vs DM	RNA-Seq	31120862	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE130997

		ed beta-cell dysfunction [RNA-seq]												
GSE36067	20-Nov-12	Role of microRNAs in compensatory b-cell mass	M	β-cell / Islet function	*Rattus norvegicus*	Pancreatic islets	14	Expression profiling by array, Non-codi	GPL6247, GPL10906	[RaGene-1_0-st] Affymetrix Rat Gene 1.0 ST Array [transcript (gene) version], Agilent-019159 Rat	Non-pregnant vs Pregnant	Microarray(miRNA-array)	22996663	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE36067

		expansion associated with pregnancy and obesity					ng RNA profiling by array	miRNA Microarray (miRBase release 12.0 miRNA ID version)					
GSE21860	2-Jul-10	RNA-seq of pancreatic islets isolated	M	β-cell / Islet function	*Mus musculus*	Pancreatic islets	6	Expression profiling by high	GPL9185	Illumina Genome Analyzer (Mus musculus)	Non-pregnant vs Pregnant	RNA-Seq	20581837	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE21860

		from normal femal e and pregn ant femal e mice						thro ugh put sequ enci ng						
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GS E10 401 7	11 - Se p-18	Rat IUGR islet transc ripto me seque	O	β-cell / Islet fun ctio n	*Rat tus nor vegi cus*	Panc reati c islets	12	Expr essio n profi ling by high	GP L18 694	Illumina HiSeq 2500 (Rattus norvegicus)	IUGR and Control	RNA-Seq	305 084 15	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE104017

		ncing at 2 time points					thro ugh put sequ enci ng						
GS E10 064 5	30 - Ju n- 17	Differ entiall y expre ssed non- codin g RNAs in mous	M	β- cell / Islet fun ctio n	*Mu s mu scul us*	Panc reati c islets	6	Expr essio n profi ling by arra y	GP L20 668	Ncode Mus musculus Non-coding array	Non- pregna nt vs Pregna nt	Microar ray(lnc RNA)	287 968 01	https://www.ncbi.nlm.n ih.gov/geo/query/acc.c gi?acc=GSE100645

		e islets during pregnancy											
GSE90022	8-Sep-17	RNA Sequencing of Pancreatic Islets from Intrauterine Grow	O	β-cell / Islet function	*Ovis aries*	Pancreatic islets	8	Expression profiling by high throughput sequ	GPL19778	Illumina HiSeq 2500 (Ovis aries)	IUGR and Control	RNA-Seq	28200173	https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE90022

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Supplementary Table 2 Glossary of major transcriptomic technologies

Terms	Brief descriptions	Reference
Microarray	Hybridization-based platform using predefined probes to quantify relative	[1]

	gene expression across thousands of genes in parallel.	
Bulk RNA-seq	High-throughput sequencing approach that measures average transcript abundance from mixed cell populations within a tissue or sample.	[2]
ncRNA-seq	RNA-sequencing strategies optimized to capture non-coding RNAs, including microRNAs, long non-coding RNAs, and circular RNAs.	[3]
Single-cell RNA-seq (scRNA-seq)	Sequencing of individual cells to resolve cellular heterogeneity and identify distinct cell types and transcriptional states.	[4]
MeRIP-seq (m6A-seq)	Antibody-based immunoprecipitation of N6-methyladenosine (m6A)-modified RNA followed by sequencing to map RNA methylation patterns transcriptome-wide.	[5]
Spatial transcriptomics	Technologies that profile gene expression while preserving spatial context within intact tissue sections.	[6]

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