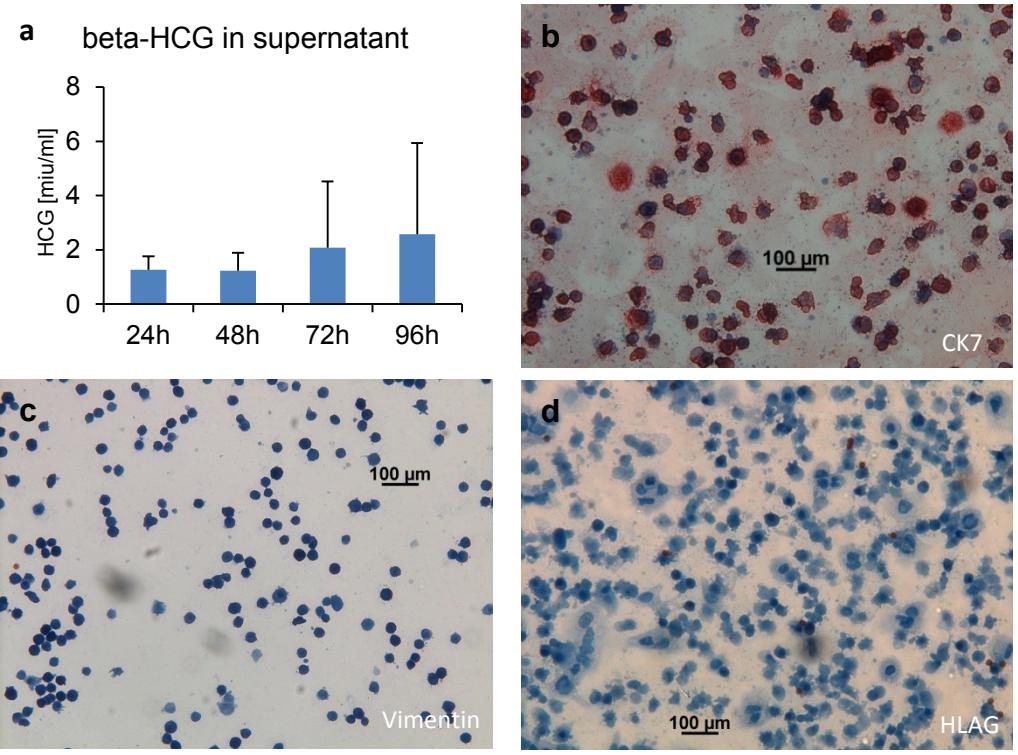
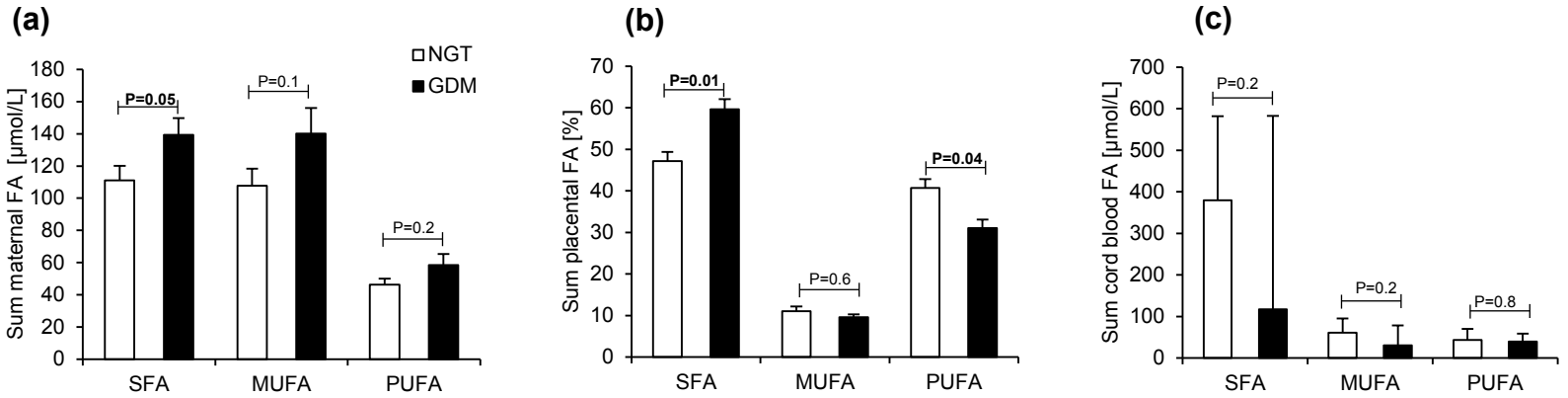
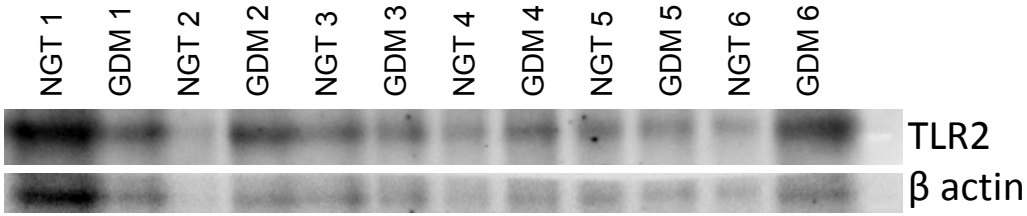


Supplemental Fig. 1: Quality control of primary trophoblasts
(a) Human choriongonadotropin (HCG) values of primary trophoblasts (N=7) after 24h, 48h, 72h and 96h in cell culture supernatant. Immunocytochemical staining of primary trophoblasts with antibody against cytokeratin 7 (CK7) (b), a trophoblast-specific marker; vimentin (c); and histocompatibility antigen, class I, G (HLAG) (d).



Supplemental Fig. 2: Non-esterified fatty acids (NEFA) in mother, placenta and fetus

Saturated (SFA), mono-unsaturated (MUFA) and poly-unsaturated (PUFA) NEFA-profile in maternal plasma (a) (NGT N=18; GDM N=18), placental tissue (b) (NGT N=19; GDM N=11), and fetal cord blood (c) (NGT N=11; GDM N=7). Shown are means ± SEM. White columns show results of NGT and black columns of GDM women. Significant changes (P≤0.05) of the multiple linear regression analyses are marked with bold fonts.



Supplemental Fig. 3: Western blot TLR2
Blot shows the protein expression of TLR2 and β actin in GDM women and NGT controls (NGT N=6, GDM N=6, as indicated).

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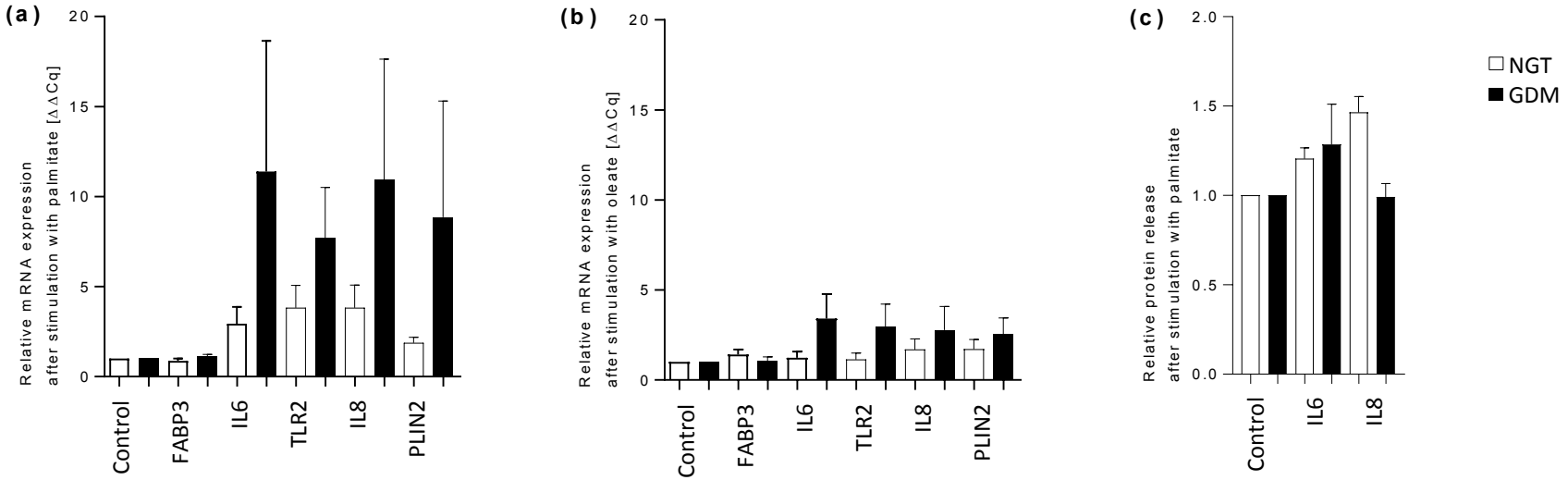

Supplemental Fig. 4: Gene expression of inflammatory genes in trophoblasts of NGT and GDM women
mRNA expression of primary trophoblasts of NGT and GDM women after 24h stimulation with 100µM palmitate (a) and oleate (b). Protein release of primary trophoblasts of NGT and GDM women after stimulation with palmitate (c). Expression and release are given as fold-change with respect to the BSA control. In an ANOVA no significant changes were present.

Supplemental Table 1: Primer sequences of qPCR experiments

Gene	Forward primer (5'→3')	Reverse primer (5'→3')
FABP3	AGCAGATGACAGGAAGGTCAA	CAATTAGCTCCCGCACAAGT
FABP4	CCTTTAAAAATACTGAGATTTCCTTCA	GGACACCCCCATCTAAGGTT
IL1B	CTGTCCTGCGTGTTGAAAGA	TTGGGTAATTTTTGGGATCTACA
IL6	CAGGAGCCCAGCTATGAACT	GAAGGCAGCAGGCAACAC
IL8	AGACAGCAGAGCACACAAGC	AGGAAGGCTGCCAAGAGAG
FAT	TGCCTATTCTTTGGCTTAATGAG	TTACTTGACTTCTGAACATGTTTGC
LIPG	ATTGCCAGGATGCTCGACT	GTGGACATTCCCGAGAGAAA
LPL	AGGAGCATTACCCAGTGTCC	CCAAGGCTGTATCCCAAGAG
PLIN2	CGTTGCAGTTGATCCACAA	GGATACTGGTCCTTTGTACTGAGAT
RPS13	CCCCACTTGGTTGAAGTTGA	ACACCATGTGAATCTCTCAGGA
SLC27A1	GTCGTCCTCCGCAAGAAAT	TCCCCGATGTACTGAACCAC
SLC27A4	TGCCTGAGCTGCACAAAA	AGAACAGCGGGTCTTTCACA
TLR2	CTCTCGGTGTCGGAATGTC	AGGATCAGCAGGAACAGAGC
TLR4	AGCCATGGCCTTCCTCTC	TTCAGCTCCATGCATTGATAA
TNFa	CAGCCTCTTCTCCTTCCTGAT	GCCAGAGGGCTGATTAGAGA

Supplemental Table 2: Lipid profile of placental tissue of NGT and GDM women. Placental lipid profile of 8 normal glucose tolerant (NGT) women and 8 women gestational diabetes (GDM) was compared. Placental extracts were separated into five lipid subfractions, i.e., cholesteryl esters (CE), diacylglycerols (DG), non-esterified fatty acids (NEFA), phospholipids (PL), and triacylglycerols (TG). All data are given as absolute numbers or means ± SD. Significant differences (P=0.05) are indicated in bold fonts.

	CE		DG		NEFA		PL		TG	
	NGT	GDM	NGT	GDM	NGT	GDM	NGT	GDM	NGT	GDM
C14:0 [%]	5.45±2.86	4.17±2.21	1.37±0.36	1.62±0.25	2.78±1.01	3.4±1.34	0.45±0.12	0.52±0.23	5.43±1.63	4.09±1.87
C16:0 [%]	26.46±8.71	25.37±5.41	28.58±1.45	29.15±2.69	***26.08±2.42***	***30.02±2.28***	19.09±1.02	20.51±3.26	33.15±3.03	31.06±2.81
C16:1-n7 [%]	1.67±0.93	1.02±0.35	1.70±1.07	1.55±1.02	0.43±0.11	0.46±0.08	0,19±0.09	0.26±0,10	1.37±0.36	1.46±0.11
C18:0 [%]	19.25±8.01	19.94±6.88	18.65±1.8	19.34±2.17	***17.57±3.81***	***25.28±4.82***	14.92±0.65	16.19±2.79	17.87±7.89	17.05±4.07
C18:1-n7-cis [%]	0.9±0.37	1.62±1.92	1.13±0.17	1.05±0.27	1.57±0.29	1.25±0.45	1.66±0.27	1.56±0.26	1.83±0.62	2.04±0.61
C18:1-n9 [%]	8.56±3.34	8.95±3.96	5.46±0.57	5.84±1.80	9.27±3.19	8.11±1.80	8.19±0.74	7.84±0.99	17.15±9.21	19.24±6.81
C18:2-n6 [%]	21.29±14.74	22.25±9.25	5.91±0.69	5.04±1.98	9.64±2.00	7.86±2.21	9.77±1.03	9.56±1.79	9.08±4.79	10.48±2.49
C18:4-n3 [%]	2.54±1.30	1.56±0.61	0.13±0.04	0.17±0.07	1.62±1.10	1.27±0.57	0.14±0.09	0.32±0.41	2.48±1.86	1.87±1.08
C20:0 [%]	0.49±0.22	0.48±0.19	0.5±0.09	0.52±0.17	0.34±0.16	0.45±0.08	***0.21±0.04***	***0.31±0.16***	0.47±0.23	0.40±0.25
C20:3-n6 [%]	7.07±2.37	7.31±2.43	7.49±2.84	7.07±3.02	5.91±2.02	5.11±1.69	***7.31±1.76***	***5.85±1.16***	3.93±2.94	3.87±1.41
C20:4-n6 [%]	4.93±4.43	5.06±3.03	27.73±.1.62	26.68±7.38	15.98±4.08	11.96±4.43	26.35±1.80	25.84±6.02	4.23±1.86	5.30±2.74
C22:0 [%]	0.31±0.14	0.28±0.10	***0.05±0.02***	***0.10±0.04***	0.22±0.09	0.20±0.13	0.71±0.12	0.88±0.29	0.29±0.14	0.27±0.11
C22:4-n6 [%]	0.62±0.19	0.59±0.31	0.69±0.12	0.57±0.24	3.07±1.78	1.66±1.49	2.10±0.52	2.00±0.31	0.93±0.52	0.80±0.25
C22:5-n3 [%]	0.23±0.09	0.29±0.15	0.10±0.05	0.15±0.06	0.24±0.07	0.21±0.10	0.41±0.08	0.41±0.11	0.30±0.14	0.30±0.12
C22:5-n6 [%]	0.44±0.19	0.49±0.14	0.31±0.07	0.40±0.16	0.71±0.17	0.70±0.25	0.97±0.26	0.86±0.25	0.48±0.32	0.45±0.20
C22:6-n3 [%]	0.75±0.15	0.87±0.35	1.55±0.51	1.85±0.76	3.34±1.60	2.02±0.75	6.10±1.29	5.28±1.32	1.49±0.99	2.06±1.19
C24:0 [%]	0.30±0.08	0.34±0.17	0.13±0.05	0.20±0.09	0.19±0.07	0.24±0.10	0.86±0.17	1.05±0.84	0.41±0.29	0.30±0.18
C24:1-n9 [%]	0.40±0.11	0.44±0.14	0.24±0.14	0.26±0.12	0.22±0.11	0.25±0.10	0.77±0.15	1.02±0.59	0.49±0.37	0.42±0.22
MUFA [%]	9.87±3.49	11.00±3.66	6.83±0.72	7.15±2.00	11.06±3.42	9.61±2.06	0.11±0.01	0.10±0.02	19.46±9.54	21.70±6.97
PUFA [%]	37.64±16.90	38.14±11.18	43.9±2.16	41.92±4.56	40.73±6.42	31.04±6.26	0.54±0.01	0.51±0.08	22.91±5.14	25.12±5.10
SFA [%]	51.77±19.24	50.08±13.52	49.27±2.43	50.93±4.39	47.18±6.71	59.60±7.45	0.36±0.01	0.39±0.07	57.63±12.73	53.18±8.18