Rokatoarivelo et al., Supplementary data

Supplementary Figure 1. Expression of housekeeping genes in the analyzed samples

Gene expression of *GADPH* and *LRP10* in the adipose tissues of all the samples.

Supplementary Figure 2. Expression of cytokines in the sera of patients

Indicated cytokines were measured in the sera of patients and controls. N= 5 BMI<30 (kg/m^2); n=5 no diabetes BMI ≥30 (kg/m^2); n=7 diabetes BMI ≥30 (kg/m^2).

Supplementary Figure 3. Expression of CRP in the sera of patients

CRP levels were measured in the sera of patients and controls using hsCRP kit. N= 5 BMI<30 (kg/m^2); n=25 no diabetes BMI ≥30 (kg/m^2); n=9 pre-diabetes BMI ≥30 (kg/m^2); n=25 diabetes BMI ≥30 (kg/m^2).

Supplementary Figure 4. Expression of other cytokines in visceral and subcutaneous adipose tissues of patients

Indicated cytokines were measured in 41 visceral and 42 subcutaneous adipose tissues of patients and controls. N= 9 and 8 BMI<30 (kg/m^2); n=12 no diabetes BMI ≥30 (kg/m^2); n=11and 9 pre-diabetes BMI ≥30 (kg/m^2); n=10 and 12 diabetes BMI ≥30 (kg/m^2). (VAT and SAT).

Supplementary Figure 5. Expression of *IFNG*, *IL18*, *IL15* and *IL15RA* cytokines in visceral and subcutaneous adipose tissues of patients

Gene expression of *IFNG*, *IL18*, *IL15* and *IL15RA* in the visceral and subcutaneous adipose tissues. n= 4-11 BMI<30 (kg/m^2); n=34 - 40 no diabetes BMI ≥30 (kg/m^2); n=12-17 pre-diabetes BMI ≥30 (kg/m^2); n=38 diabetes BMI ≥30 (kg/m^2). None of the data was statistically significant.

Supplementary Figure 6. Correlation between protein and gene expression in adipose tissues

Correlation between protein and gene transcripts for TNFα, IL6, IL-1β and IL15 in visceral and subcutaneous adipose tissues is shown in the figure. n= 24 - 30.

Supplementary Figure 7. Expression patterns of select cytokines in the visceral and subcutaneous adipose tissues

Expression pattern of the indicated cytokines in the visceral and subcutaneous adipose tissues from a given patient. A line of a particular color in both the depots indicates data from each patient. The points have been joined for easy visualization. Dotted lines do not have the corresponding data in the other adipose tissue depot. The straight lines represent the data presented in Fig. 4.

Supplementary Figure 8. Expression patterns of select cytokine genes in the visceral and subcutaneous adipose tissues

Expression pattern of the indicated cytokines in the visceral and subcutaneous adipose tissues from a given patient. Each line indicates data from each patient. The points have been joined for easy visualization.

Supplementary Figure 9. Chemokine levels in adipose tissues

Expression of select chemokines in the visceral and subcutaneous adipose tissues. n= 9 and 8 BMI<30 (kg/m^2); n=12 no diabetes BMI $\geq$30 (kg/m^2); n=11 and 9 pre-diabetes BMI $\geq$30 (kg/m^2); n=10 and 12 diabetes BMI $\geq$30 (kg/m^2). None of the data was statistically significant.

Supplementary Figure 10. Expression of chemokines in adipose tissues

A) Gene expression of *CCL2*, *CCL5* and *CXCL10* in the visceral and subcutaneous adipose tissues. n= 8-11 BMI<30 (kg/m^2); n=34 - 40 no diabetes BMI $\geq$30 (kg/m^2); n=12 - 17 pre-diabetes BMI $\geq$30 (kg/m^2); n=38 diabetes BMI $\geq$30 (kg/m^2). None of the data was statistically significant. **B)** Correlation between chemokines (*CCL2*, *CCL5*) and cytokines (*TNFA*, *IL6*) at the level of gene expression. Pooled data (BMI<30 (kg/m^2) and BMI $\geq$30 (kg/m^2)) was used for the analysis. n= 29. **C)** Correlation between

chemokines (CCL2, CCL5 and CXCL10) and cytokines (TNFα, IL6 and IFNγ). Pooled data (BMI<30 (kg/m^2) and BMI ≥30 (kg/m^2)) was used for the analysis. n= 42.

Supplementary Figure 11. Correlation between *CD68*, *TNFA* and *IL6* gene expression in adipose tissues

Correlation between gene transcripts for *CD68*, *TNFA* and *IL6* in visceral and subcutaneous adipose tissues is shown in the figure. n= 30 - 61.

Supplementary Figure 12. VEGF and PDGF in adipose tissues

Expression of VEGF-A, PDGF-BB and PDGF-AA in the visceral and subcutaneous adipose tissues and sera. None of the data was statistically significant.

Supplementary Figure 13. Correlation between VEGF and select cytokines in adipose tissues

Correlation between the growth factors (VEGF-A, PDGF-BB and PDGF-AA) and inflammatory cytokines (IL-6, TNFα, IL-1β and IL-15) in visceral and subcutaneous adipose tissues is shown in the figure. n= 42.

Supplementary Table 1: List of primers used in this study

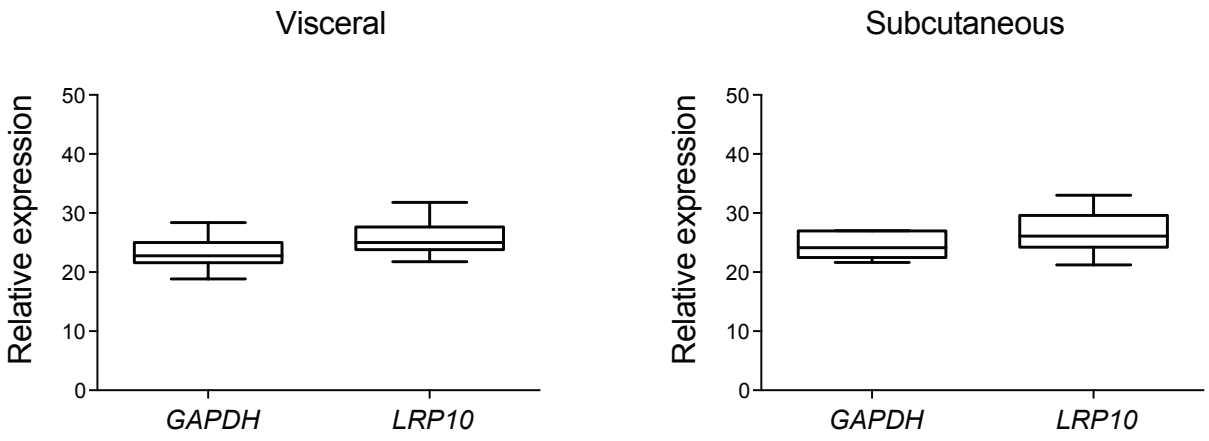
Gene name	Gene ID	Sense primer	Anti-sense primer	Amplicon size	Primer efficiency
IL1B	NM_000576.2	TGACCTGAGCACCTTCTTTC	CCACTTGTTGCTCCATATCC	205bp	1.92
IL6	NM_000600	CCACTCACCTCTTCAGAACG	CATCTTTGGAAGGTTCAGGTTG	150bp	2.1
TNFA	NM_0005943	CAGCCTCTTCTCCTTCCTGAT	GCCAGAGGGCTGATTAGAGA	122bp	2.03
IL15	NM_172175.2	CAAACAACAGTTTGTCTTCTAATGG	GACAATATGTACAAAACTCTGCAAAAA	112pb	2.2
IL15RA	NM_001351097.1	AGACAACAGCCAAGAACTGG	TTGCCTTGACTTGAGGTAGC	166bp	2.1
IL18	NM_001562	CATTGACCAAGGAAATCGGC	CACAGAGATAGTTACAGCCATACC	136bp	2.1
IL10	NM_000572	CGCATGTGAACTCCCTGG	TAGATGCCTTTCTCTTGGAGC	145bp	ND
LRP10	NM_014045	GGATGGAGGCTGAGATTGTG	CTGTAGCAGAGAACGCAGG	146bp	1.9
GAPDH	NM_002046.5	GATGACATCAAGAAGGTGGTGAA	GTCTTACTCCTTGGAGGCCATGT	245bp	2.02
IFNG	NM_000619	GCATCGTTTTGGGTTCTCTTG	AGTTCCATTATCCGCTACATCTG	113bp	ND
IL4	NM_000589	AGCTGATCCGATTCCTGAAAC	AACGTACTCTGGTTGGCTTC	94pb	ND
CD4	NM_000616.4	TCAAAATAGACATCGTGGTGCT	ACCTGTTCCCCCTCTTTCTTA	72bp	2.08
CD8	NM_001768.6	TCATGGCCTTACCAGTGACC	AGGTTCCAGGTCCGATCC	105bp	2.0
CD68	NM_001251	CATCTCTGTACTGAACCCCAAC	CCATGTAGCTCAGGTAGACAAC	149bp	1.98
PPARG	NM_138711.3	AGTCCTCACAGCTGTTTGCCAAGC	GAGCGGGTGAAGACTCATGTCTGT	124bp	2.06
IL1RN	NM_173843	CCTCATGCTCTGTTCTTGGG	TGTCCTGCTTTCTGTTCTCG	130pb	1.87

ND- the data set did not permit the determination of primer efficiency

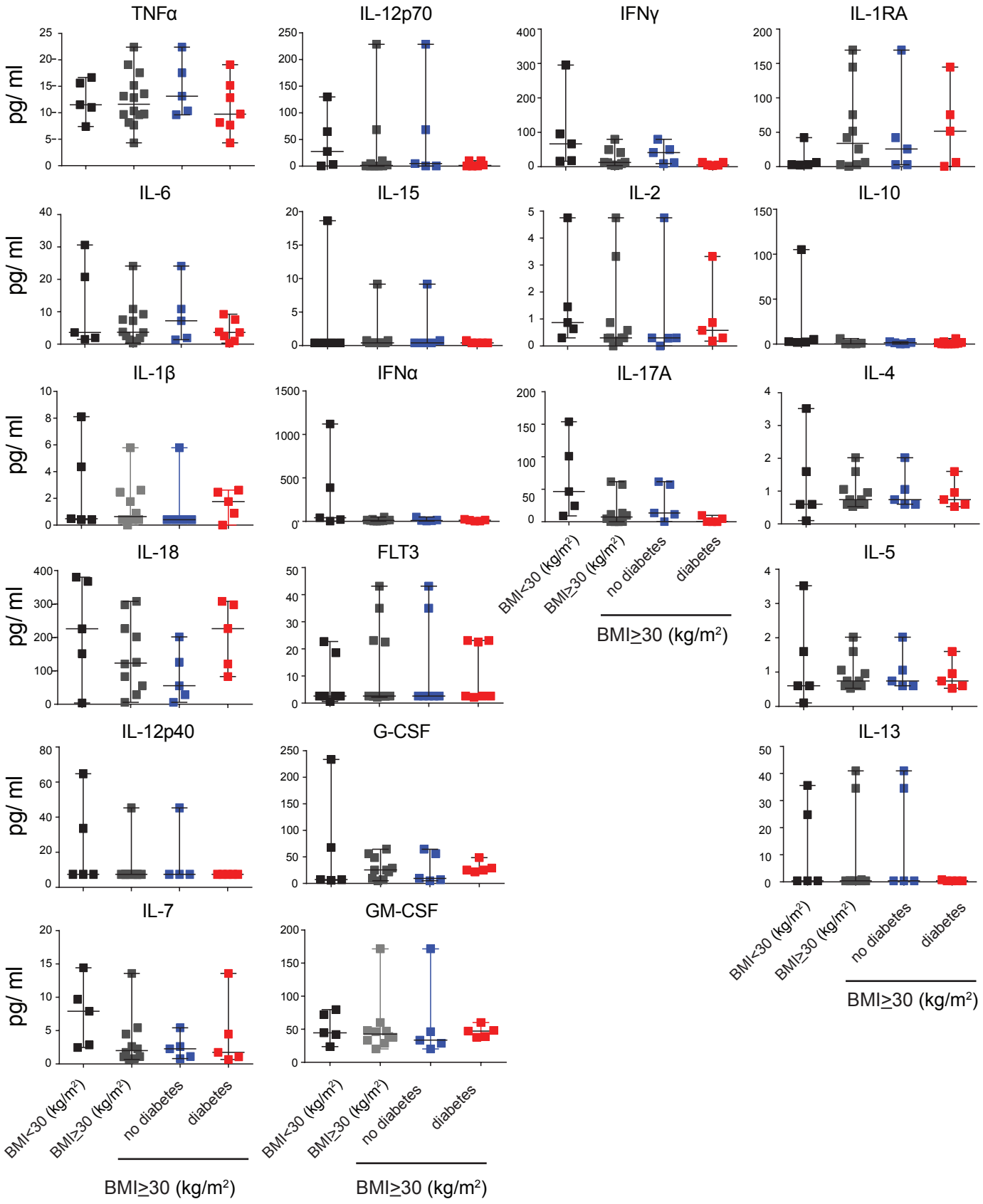
Gene names

IL1B, Interleukin-1 beta
IL6, Interleukin-6 beta
TNFA, Tumor necrosis factor, alpha
IL15, Interleukin-15
IL15RA, Interleukin-15, receptor subunit alpha
IL18, Interleukin-18
IL10, Interleukin-10
LRP10, LDL receptor related protein 10
GAPDH, Glyceraldehyde-3-phosphate dehydrogenase
IFNG, Interferon gamma
IL4, Interleukin-4
CD4, CD4 molecule
CD8, CD8a molecule
CD68, CD68a molecule
PPARG Peroxisome proliferator activated receptor gamma
IL1RN Interleukin-1 receptor antagonist

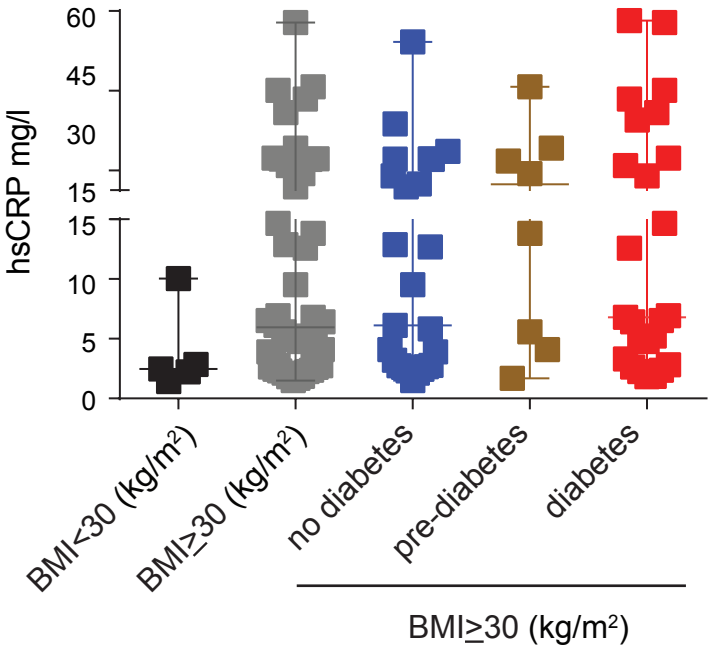
Rakotoarivelo et al., Supplementary Figure 1



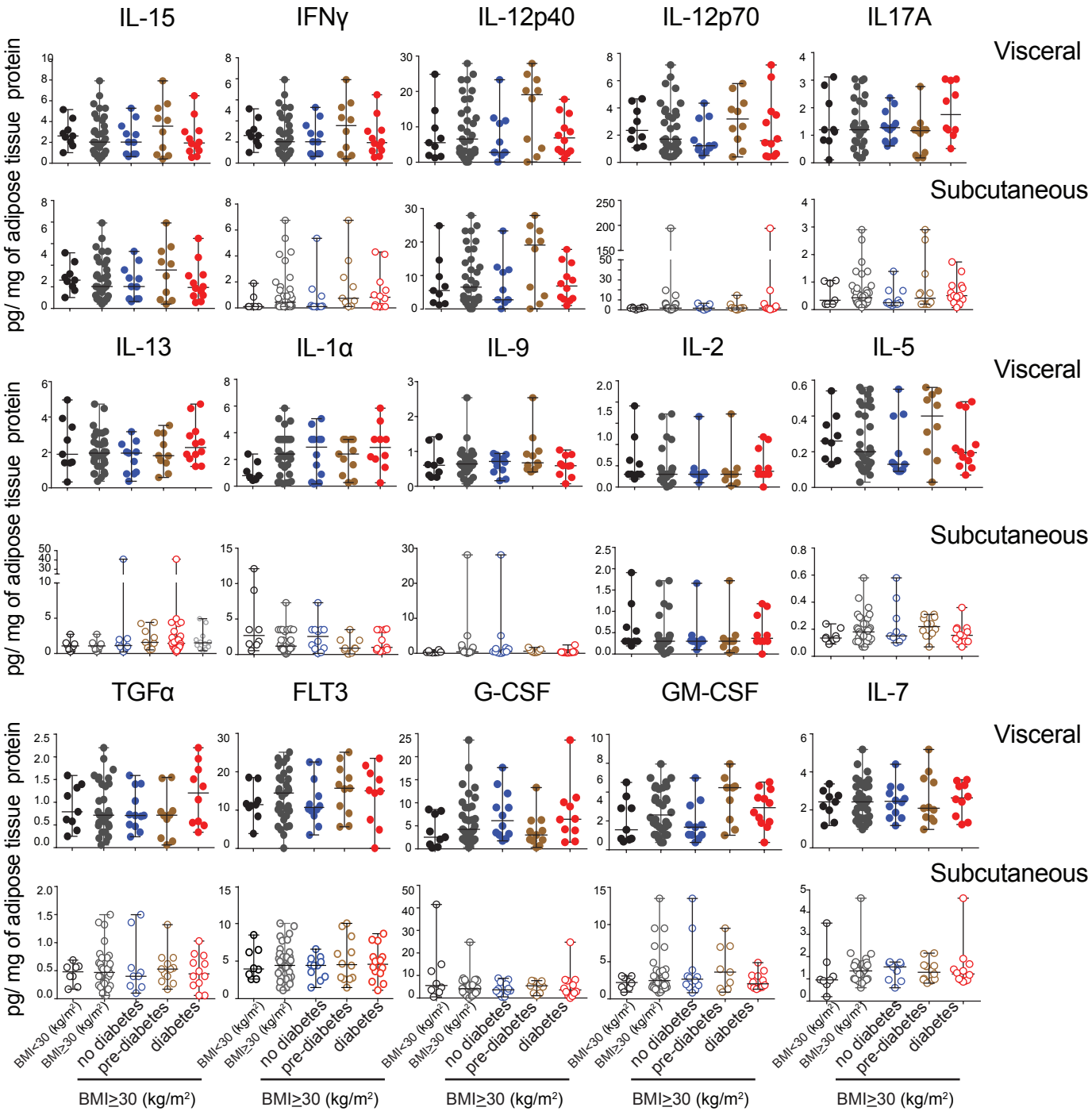
Rakotoarivelo et al., Supplementary Figure 2



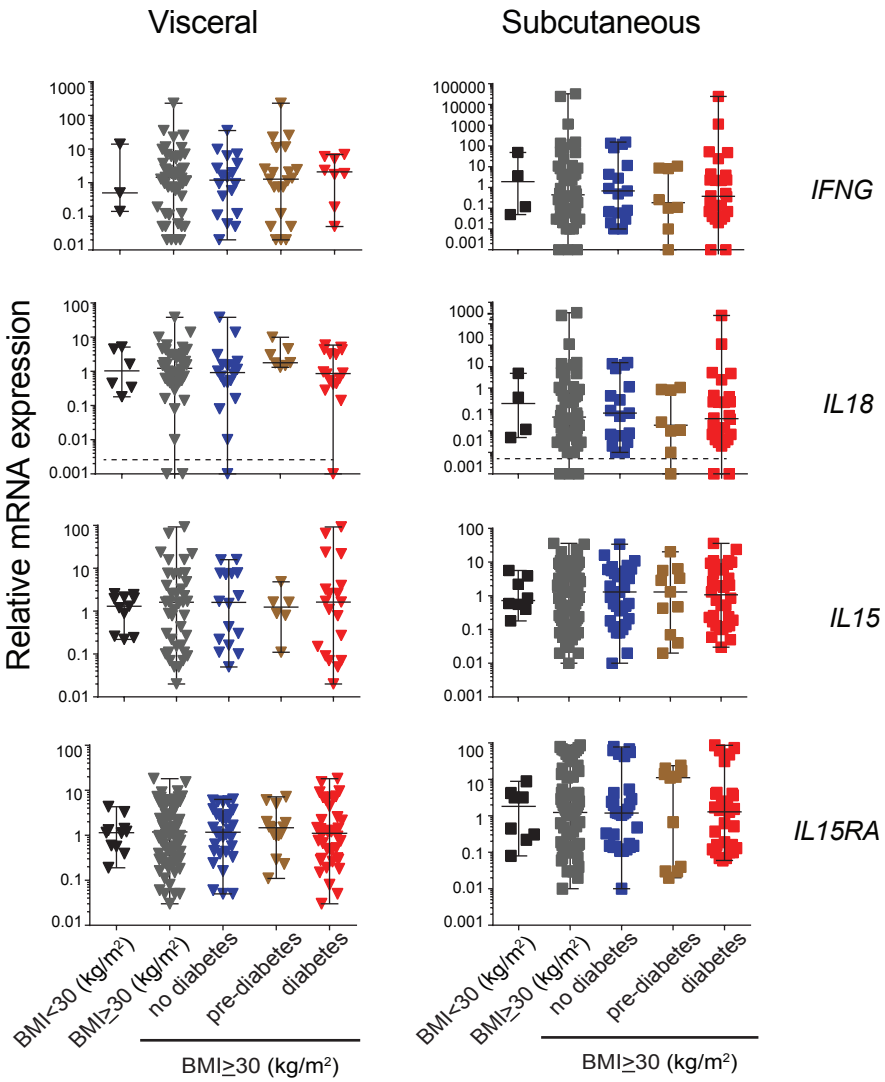
Rakotoarivelo et al., Supplementary Figure 3



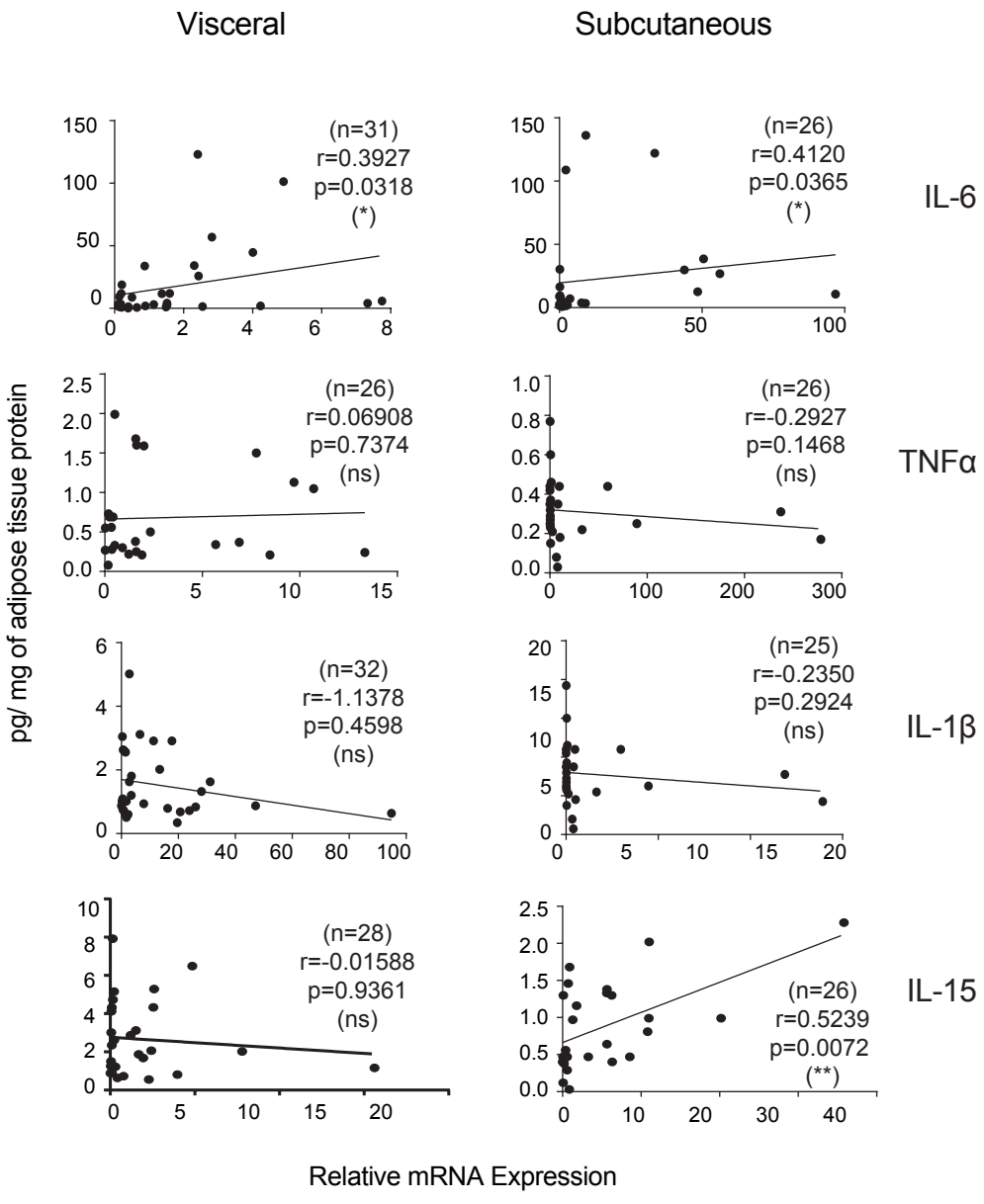
Rakotoarivelo et al., Supplementary Figure 4



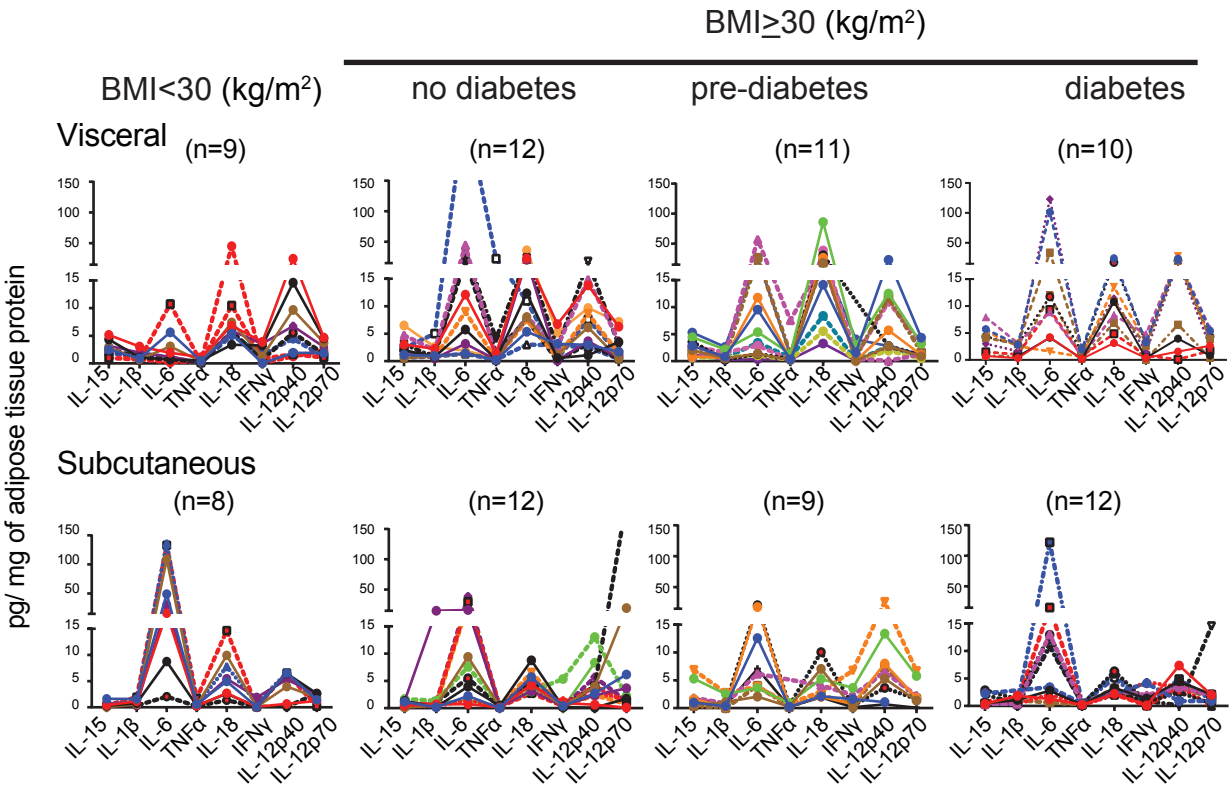
Rakotoarivelo et al., Supplementary Figure 5

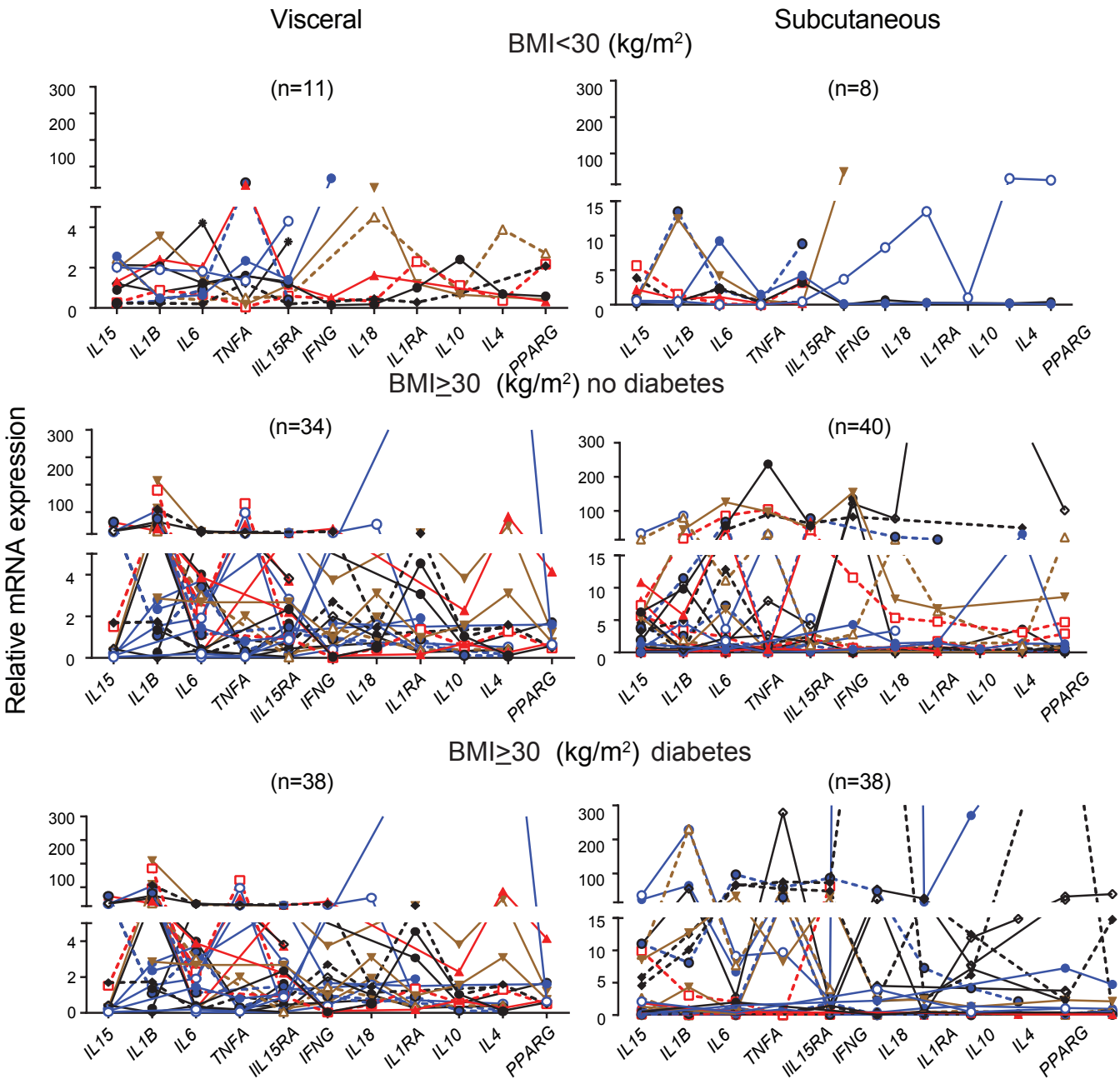


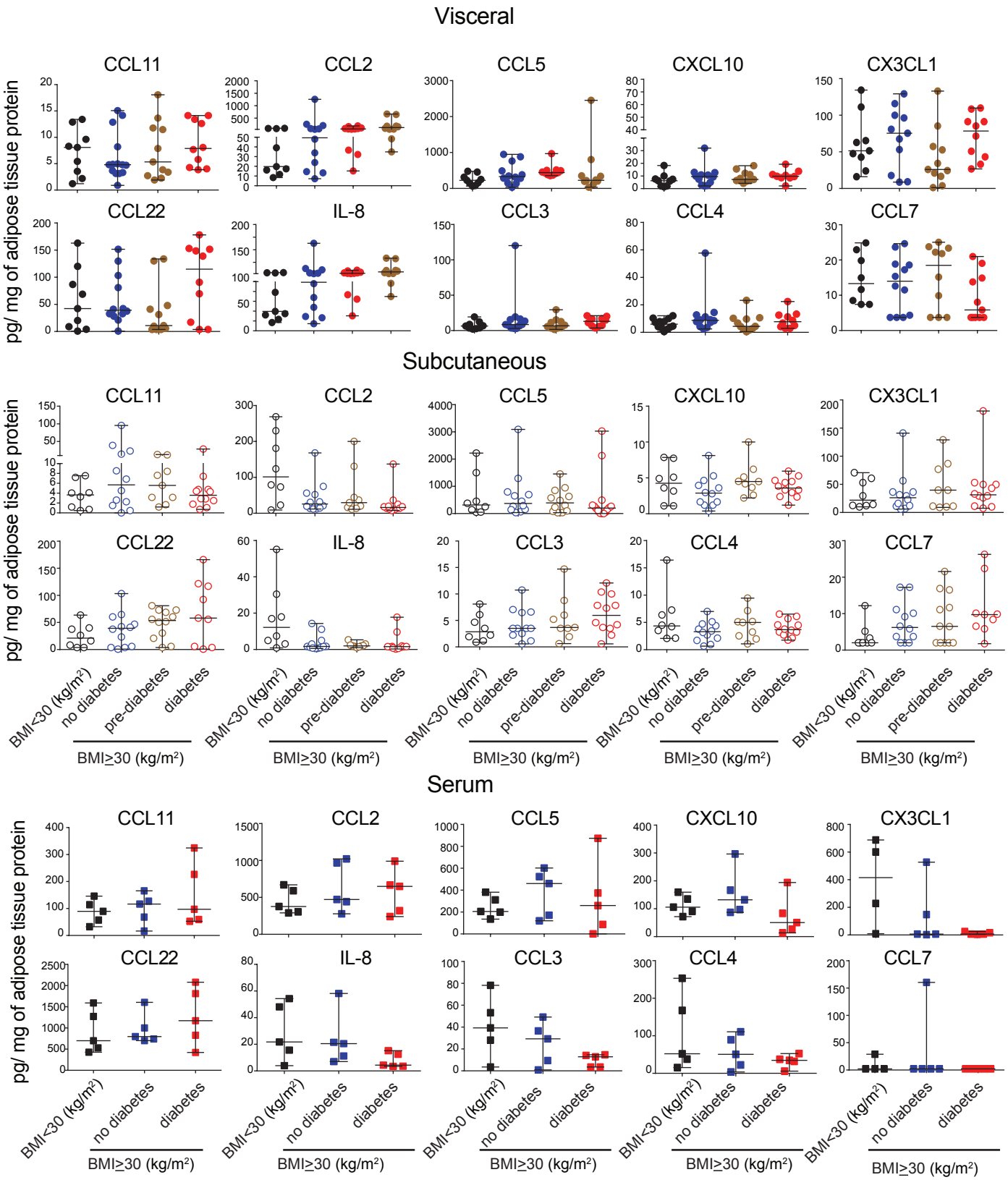
Rakotoarivelo et al., Supplementary Figure 6

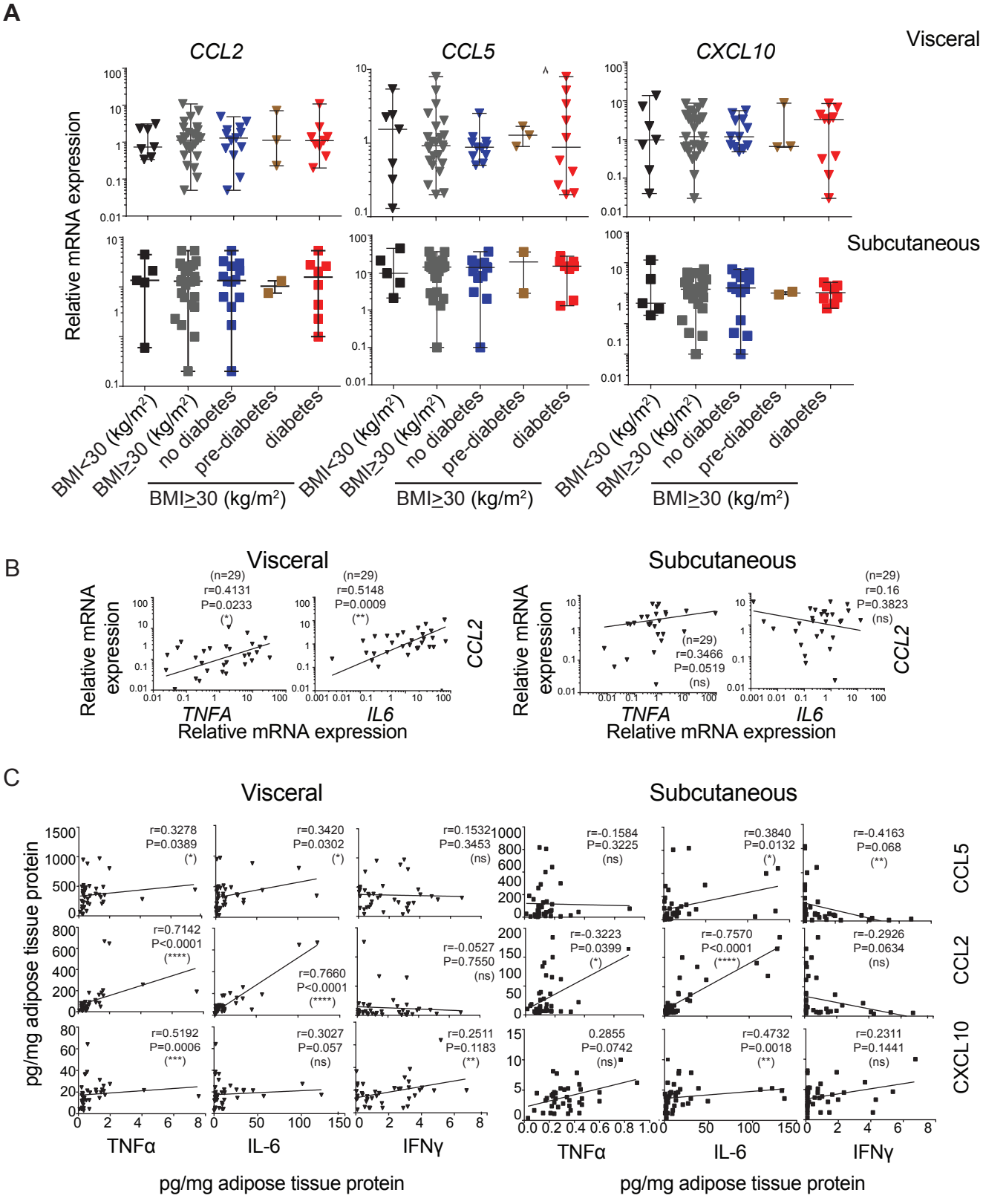


Rakotoarivelo et al., Supplementary Figure 7

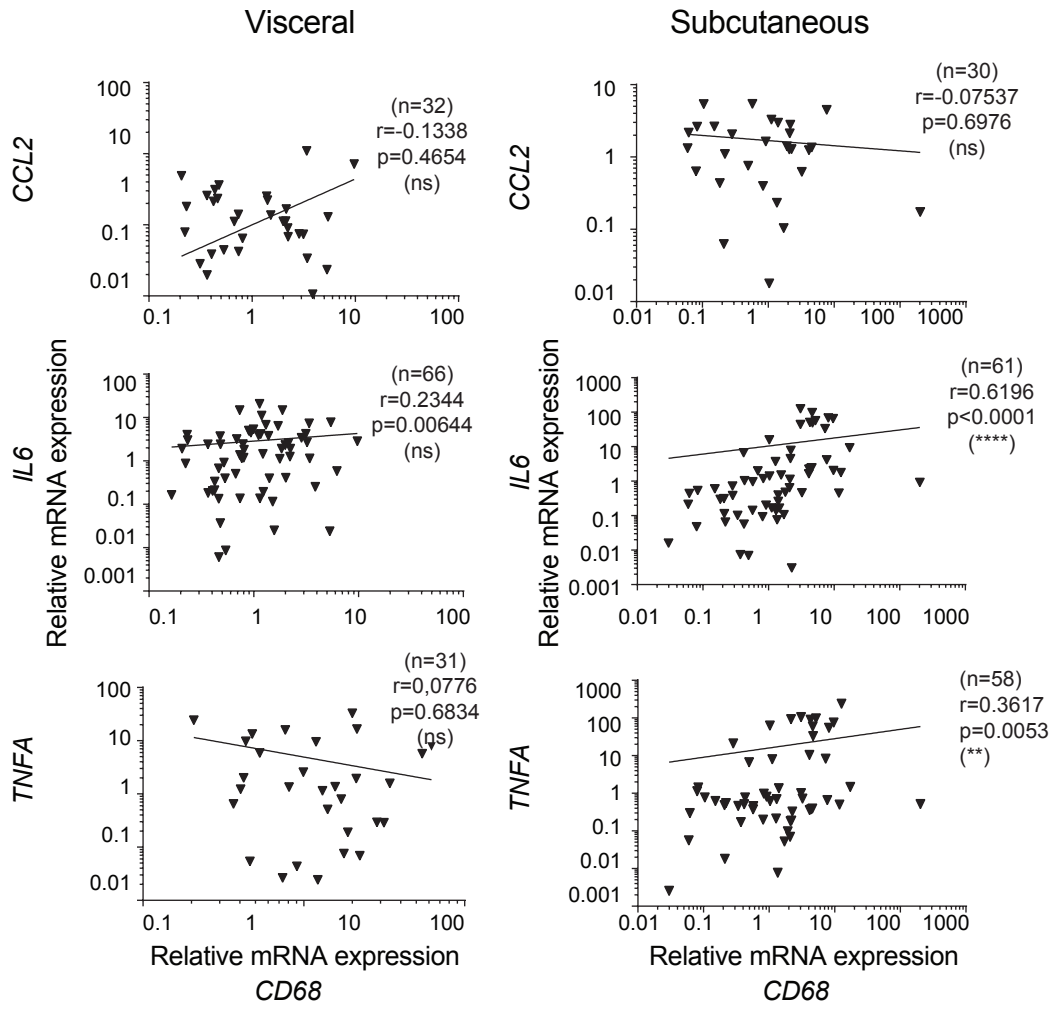



Visceral
Subcutaneous
BMI<30 (kg/m²)
(n=11)
(n=8)
BMI≥30 (kg/m²) no diabetes
(n=34)
(n=40)
BMI≥30 (kg/m²) diabetes
(n=38)
(n=38)
Relative mRNA expression
300
200
100
15
10
5
4
2
0
IL15
IL1B
IL6
TNFA
IIL15RA
IFNG
IL18
IL1RA
IL10
IL4
PPARG

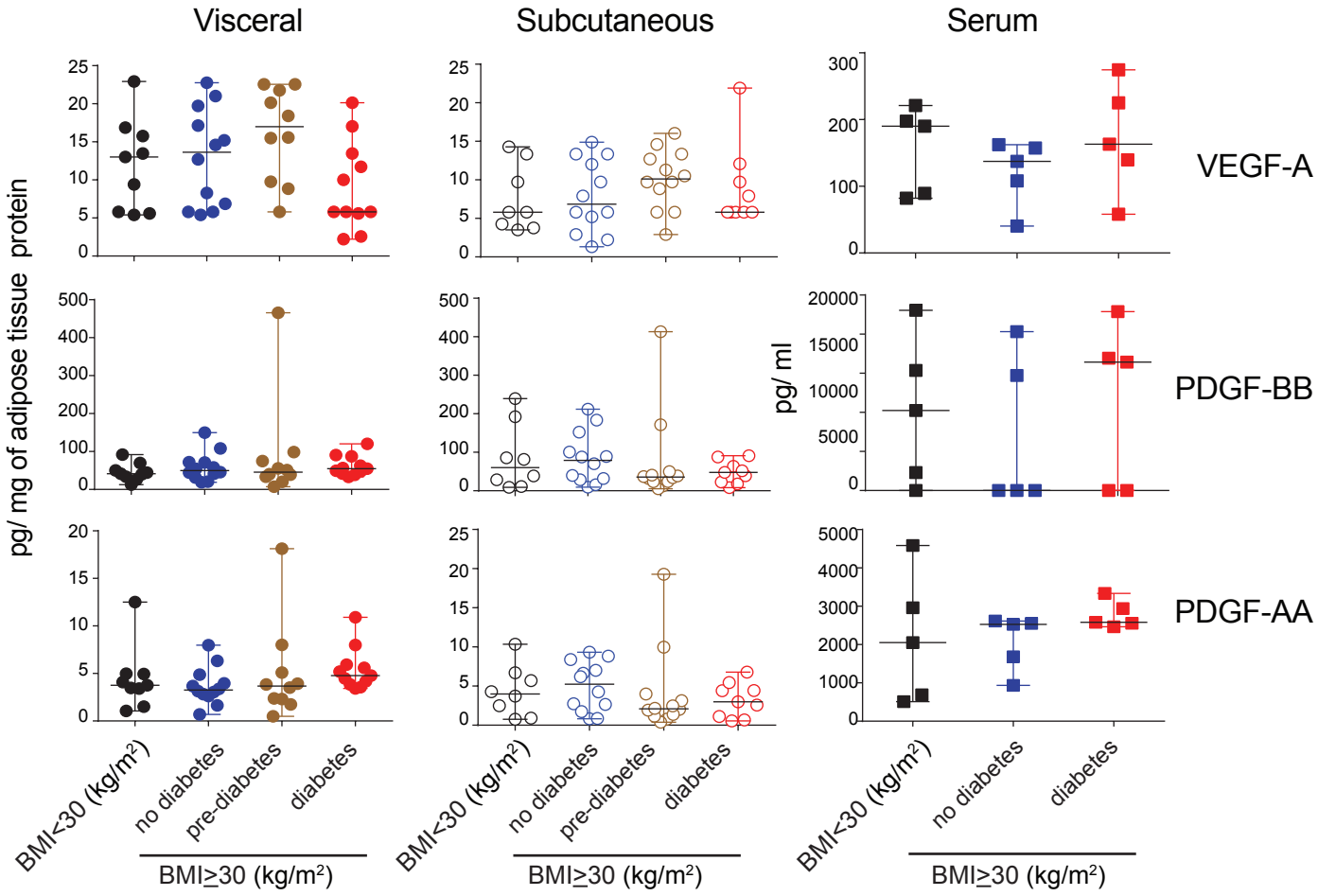

Visceral
Subcutaneous
Serum
pg/ mg of adipose tissue protein
CCL11
CCL2
CCL5
CXCL10
CX3CL1
CCL22
IL-8
CCL3
CCL4
CCL7
BMI<30 (kg/m²)
no diabetes
pre-diabetes
diabetes
BMI≥30 (kg/m²)

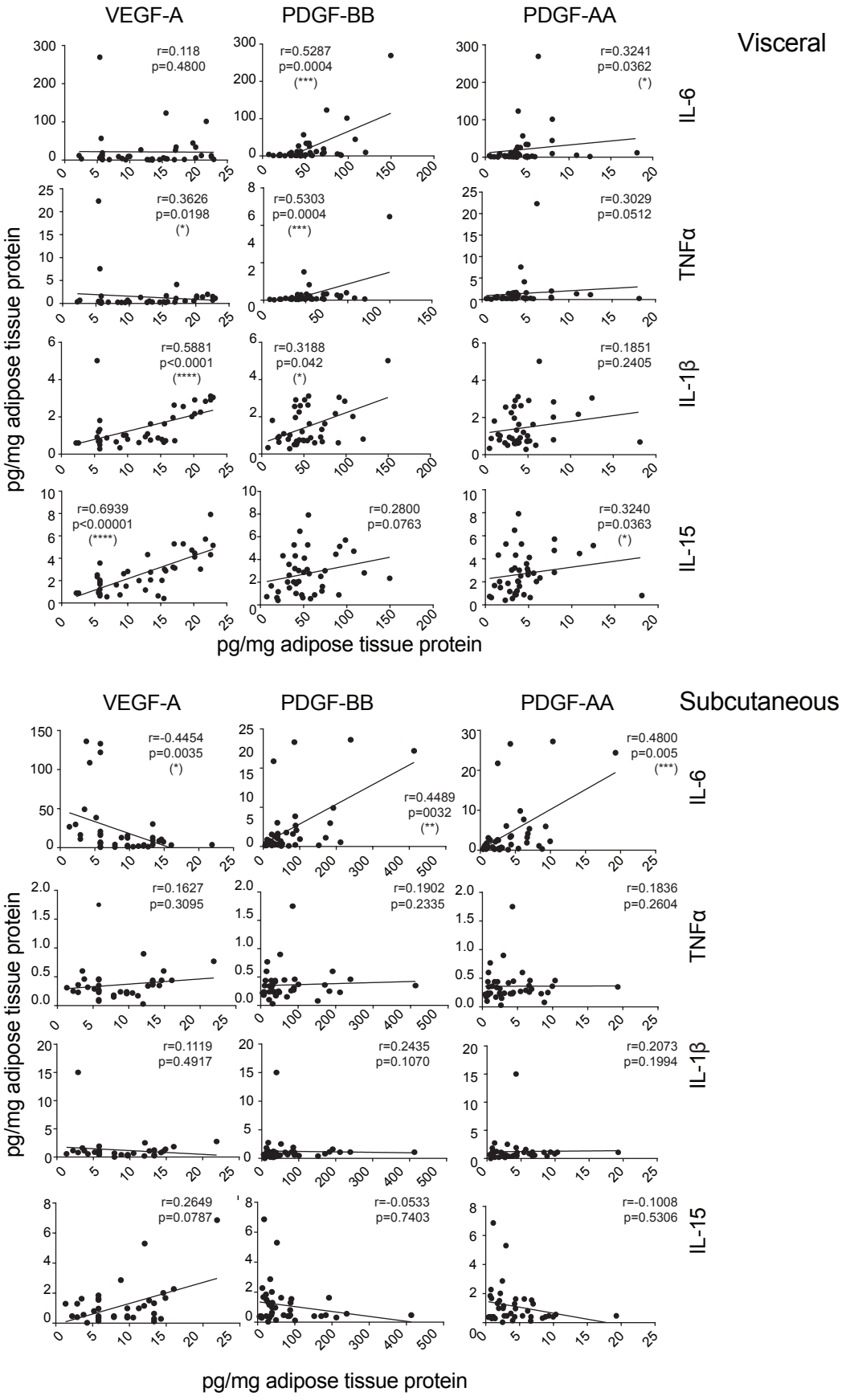

A
CCL2
CCL5
CXCL10
Visceral
Subcutaneous
Relative mRNA expression
BMI<30 (kg/m²)
BMI≥30 (kg/m²)
no diabetes
pre-diabetes
diabetes
BMI≥30 (kg/m²)
B
Visceral
Subcutaneous
Relative mRNA expression
(n=29)
r=0.4131
P=0.0233
(*)
r=0.5148
P=0.0009
(**)
r=0.16
P=0.3823
(ns)
r=0.3466
P=0.0519
(ns)
CCL2
TNFA
IL6
Relative mRNA expression
C
Visceral
Subcutaneous
pg/mg adipose tissue protein
r=0.3278
P=0.0389
(*)
r=0.3420
P=0.0302
(*)
r=0.1532
P=0.3453
(ns)
r=-0.1584
P=0.3225
(ns)
r=0.3840
P=0.0132
(*)
r=-0.4163
P=0.068
(**)
CCL5
r=0.7142
P<0.0001
(****)
r=0.7660
P<0.0001
(****)
r=-0.0527
P=0.7550
(ns)
r=-0.3223
P=0.0399
(*)
r=-0.7570
P<0.0001
(****)
r=-0.2926
P=0.0634
(ns)
CCL2
r=0.5192
P=0.0006
(***)
r=0.3027
P=0.057
(ns)
r=0.2511
P=0.1183
(**)
0.2855
P=0.0742
(ns)
r=0.4732
P=0.0018
(**)
r=0.2311
P=0.1441
(ns)
CXCL10
TNFα
IL-6
IFNγ
pg/mg adipose tissue protein

Rakotoarivelo et al., Supplementary Figure 11



Rakotoarivelo et al., Supplementary Figure 12




VEGF-A
PDGF-BB
PDGF-AA
Visceral
IL-6
TNFα
IL-1β
IL-15
r=0.118
p=0.4800
r=0.5287
p=0.0004
(***)
r=0.3241
p=0.0362
(*)
r=0.3626
p=0.0198
(*)
r=0.5303
p=0.0004
(***)
r=0.3029
p=0.0512
r=0.5881
p<0.0001
(****)
r=0.3188
p=0.042
(*)
r=0.1851
p=0.2405
r=0.6939
p<0.00001
(****)
r=0.2800
p=0.0763
r=0.3240
p=0.0363
(*)
pg/mg adipose tissue protein
pg/mg adipose tissue protein
VEGF-A
PDGF-BB
PDGF-AA
Subcutaneous
IL-6
TNFα
IL-1β
IL-15
r=-0.4454
p=0.0035
(*)
r=0.4489
p=0032
(**)
r=0.4800
p=0.005
(***)
r=0.1627
p=0.3095
r=0.1902
p=0.2335
r=0.1836
p=0.2604
r=0.1119
p=0.4917
r=0.2435
p=0.1070
r=0.2073
p=0.1994
r=0.2649
p=0.0787
r=-0.0533
p=0.7403
r=-0.1008
p=0.5306
pg/mg adipose tissue protein