## **Supplementary Material**

The compositional and nano-structural basis of fracture healing in healthy and osteoporotic bone.

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Supplementary Table 1. Comparisons between healthy and osteoporotic fracture repair of callus compositional parameters (\*\* p < 0.01).

						Callus (C	Compositi	onal Para	imeters)				
		Miner	al - Matrix	د Ratio		Crystallinit		Coll	agen Matu	rity	Aci	d Phospha	te
						1030 / 102	0	7	660 / 1690	6	1	127 / 1096	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Control	7	3.47	0.57		1.13	0.04		2.36	0.07		0.57	0.03	
OVX OVX	10	3.16	0.26		1.13	0.03		2.31	60.0		0.59	0.03	
Control	6	3.66	0.57		1.10	0.04		2.40	60.0	**	0.58	0.03	
OVX	6	3.57	0.58		1.11	0.03		2.27	0.10		0,58 (^)	0.02	
Control	8	4.18	0.68		1.10	0.05		2.34	0.10		0.59	0.04	
DIVIT + 24 OVX	9	3.98	0.36		1.12	0.04		2.32	0.06		0.57	0.02	
										-			
					Callus (C	Composi	tional Par	ameters	- Hetero	geneity)			
		Miner	al - Matrix	k Ratio	5	Crystallinit	Y	Coll	agen Matu	rity	Aci	e hospha	ite
		He	terogenei	ity	Ť	eterogene	ity	He	terogenei	ty	Не	terogenei	£
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Control	7	1,19 (#)	0.25		0.07	0.02		0.25	0.07		0.05	0.02	
nureateu					0								

( $\Omega$ ) denotes N = 5 0.02 0.01 0.01 0,04 (Ω) 0.05 0.05 0.16 0.19 0.11 0.29 0.28 0.34

0.02 0.04

0.05

0.11

0,20 (§)

0.02 0.01 0.02 0.01 0.02

0.08

0.12 0.20 0.22

1.18 0.98 1.09 1.111.15

10 б თ ∞ ە

٨V

Control

BMP

ХVО

0.06 0.06

0.16

Control

BMP + ZA

ХVО

0.18

0.07 0.07

0.17

0.27

0.05

(^) denotes N = 8(§) denotes N = 9 (#) denotes N = 6

Supplementary Table 2. Comparisons between healthy and osteoporotic fracture repair of cortical compositional parameters.

						Cortex ((	Compositi	onal Para	meters)				
		Miner	al - Matrix	c Ratio	0	rystallinit	۲	Colla	agen Matu	ırity	Aci	d Phospha	te
					Т	030 / 102	0	1	660 / 169	0	1	127 / 1096	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Control	7	5.26	0.63		1.11	0.07		2.49	0.11		0.46	0.02	
OVX OVX	10	5.30	0.58		1.11	0.05		2.38	0.12		0.48	0.02	
Control	6	5.75	0.78		1.07	0.05		2.47	0.09		0.47	0.04	
OVX	6	5.71	0.53		1.09	0.06		2.46	0.13		0,47 (#)	0.01	
Control	8	5.47	0.72		1.09	0.07		2.49	0.12		0.48	0.02	
DIVIT 7 2A OVX	9	5.97	0.74		1.12	0.07		2.45	0.12		0.48	00.0	
					Cortex (C	Composi	tional Paı	ameters	- Hetero	geneity)			
		Miner	al - Matrix	: Ratio	0	rystallinit	y	Colla	agen Matu	ırity	Aci	d Phospha	ite
		He	terogenei	ity	He	eterogene	ity	He	terogenei	ty	He	terogenei	5
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Control	7	0.94	0.17		0.06	0.02		0.14	0.04		0.02	0.00	
Unitreated	10	1 1 1	66.0		0.07	0 01		0 15 (#)	0.08		0.02	0.01	

(#) denotes N = 8

0.02

0.01

0.08 0.11 0.10

0.07

0.16 0.14

0.01 0.01 0.01

0.06

0.06 0.06

0.18

0.17

0.86

Control

BMP + ZA

٨V

0.15

0.95 0.91

6 6 8 9

Control OVX

BMP

0.01

0.17 0.17

0.02

0.06

0.15

1.00

0.00

0.02 0.02 0.02 0.02 Supplementary Table 3. Comparison of Treatments: Comparisons of inner callus regions are presented between untreated, BMP-7 and BMP-7 + ZA treatments within either the healthy or the osteoporotic groups (\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001 when compared to Untreated femurs, and **o** p < 0.05, **oo** p < 0.01, **ooo** p < 0.001 when compared to BMP only treated femurs).

							ontrol (	Composit	ional Par	ameters				
			Miner	al - Matrix	k Ratio	0	rystallinit	٨	Coll	agen Matu	rity	Aci	d Phosph	ate
						1	030 / 102	0	Ч	660 / 1690	_	1	127 / 109	9
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	Control	7	3.47	0.57		1.13	0.04		2.36	0.07		0.57	0.03	
BMP	Control	6	3.66	0.57		1.10	0.04		2.40	0.09		0.58	0.03	
BMP + ZA	Control	8	4.18	0.68	*	1.10	0.05		2.34	0.10		0.59	0.04	
							OVX (Co	ompositio	nal Para	meters)				
			Miner	al - Matri	k Ratio	0	rystallinit	٨	Coll	agen Matu	rity	Aci	d Phosph	ate
						1	030 / 102	0	Ч	660 / 1690	_	1	127 / 109	9
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	VVO	10	3.16	0.26		1.13	0.03		2.31	0.09		0.59	0.03	
BMP	VVO	6	3.57	0.58		1.11	0.03		2.27	0.10		0,58	0.02	
BMP + ZA	VХ	9	3.98	0.36	***	1.12	0.04		2.32	0.06		0.57	0.02	
						Control (	Composi	itional Da	rametare	- Hotor	ution of tur			ſ
							000				141 D I D Q			
			Miner	al - Matriy	k Ratio	0	rystallinit	~	Coll	agen Matu	rity	Aci	d Phosph	ate
			He	eterogene	ity	He	terogenei	ity	H	terogenei	Ę	He	terogenei	ity
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	Control	7	1,19 (#)	0.25		0.07	0.02		0.25	0.07		0.05	0.02	
BMP	Control	6	0.98	0.20		0.07	0.01		0.27	0.17		0.05	0.04	
BMP + ZA	Control	∞	1.11	0.16		0.06	0.01		0.28	0.11		0.05	0.02	
								-						ſ
						OVX (Co	ompositi	onal Para	meters -	Heterog	eneity)			
			Miner	al - Matri	k Ratio	0	rystallinit	~	Coll	agen Matu	rity	Aci	d Phosph	ate
			He	eterogene	ity	He	terogenei	ity	He	terogenei	۲	He	terogenei	ity
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	VVO	10	1.18	0.12		0.08	0.02		0,20 (§)	0.11		0.05	0.02	
BMP	VVO	6	1.09	0.22		0.07	0.02		0.29	0.16		0.05	0.01	
BMP + ZA	VVO	9	1.15	0.18		0.06	0.02		0.34	0.19	*	0,04 (Ω)	0.01	

## **Supplementary Table 4.** Comparisons between callus and cortex regions. (\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001).

			Minera	l-Matrix			Mine	eral-Matrix	(Heterogen	eity)	
		CAL	LUS	COF	RTEX		CAL	LUS	COR	TEX	
	Ν	Mean	SD	Mean	SD	p-value	Mean	SD	Mean	SD	p-value
Untreated (Control)	7	3.47	0.57	5.26	0.63	***	1.19	0.25	0.94	0.17	*
Untreated (OVX)	10	3.16	0.26	5.30	0.58	***	1.18	0.12	1.15	0.29	
BMP (Control)	9	3.66	0.57	5.75	0.78	***	0.98	0.20	0.95	0.15	
BMP (OVX)	9	3.57	0.58	5.71	0.53	***	1.09	0.22	0.91	0.18	
BMP + ZA (Control)	8	4.18	0.68	5.47	0.72	***	1.11	0.16	0.86	0.17	*
BMP + ZA (OVX)	6	3.98	0.36	5.97	0.74	***	1.15	0.18	1.00	0.15	*

			Crysta	allinity			Cry	stallinity (I	Heterogenei	ty)	
		CAL	LUS	COR	TEX		CAL	LUS	COR	TEX	
	Ν	Mean	SD	Mean	SD	p-value	Mean	SD	Mean	SD	p-value
Untreated (Control)	7	1.13	0.04	1.11	0.07		0.07	0.02	0.06	0.02	
Untreated (OVX)	10	1.13	0.03	1.11	0.05		0.08	0.02	0.07	0.01	
BMP (Control)	9	1.10	0.04	1.07	0.05	*	0.07	0.01	0.06	0.01	*
BMP (OVX)	9	1.11	0.03	1.09	0.06		0.07	0.02	0.06	0.01	
BMP + ZA (Control)	8	1.10	0.05	1.09	0.07		0.06	0.01	0.06	0.01	
BMP + ZA (OVX)	6	1.12	0.04	1.12	0.07		0.06	0.02	0.06	0.02	

			Collagen	Maturity			Collag	en Maturit	y (Heteroge	neity)	
		CAL	LUS	COR	TEX		CAL	LUS	COR	TEX	
	Ν	Mean	SD	Mean	SD	p-value	Mean	SD	Mean	SD	p-value
Untreated (Control)	7	2.36	0.07	2.49	0.11	**	0.25	0.07	0.14	0.04	*
Untreated (OVX)	10	2.31	0.09	2.38	0.12		0.20	0.11	0.15	0.08	
BMP (Control)	9	2.40	0.09	2.47	0.09	*	0.27	0.17	0.16	0.07	
BMP (OVX)	9	2.27	0.10	2.46	0.13	**	0.29	0.16	0.14	0.08	*
BMP + ZA (Control)	8	2.34	0.10	2.49	0.12	**	0.28	0.11	0.17	0.11	
BMP + ZA (OVX)	6	2.32	0.06	2.45	0.12	*	0.34	0.19	0.17	0.10	

			Acid Ph	osphate			Acid	Phosphate	(Heterogen	eity)	
		CAL	LUS	COF	RTEX		CAL	LUS	COF	RTEX	
	Ν	Mean	SD	Mean	SD	p-value	Mean	SD	Mean	SD	p-value
Untreated (Control)	7	0.573	0.025	0.463	0.022	***	0.050	0.020	0.018	0.004	*
Untreated (OVX)	10	0.586	0.031	0.475	0.016	***	0.051	0.022	0.021	0.005	**
BMP (Control)	9	0.584	0.029	0.467	0.040	***	0.052	0.040	0.021	0.004	*
BMP (OVX)	9	0.585	0.025	0.468	0.013	***	0.052	0.013	0.023	0.014	*
BMP + ZA (Control)	8	0.587	0.042	0.476	0.023	***	0.048	0.025	0.025	0.018	*
BMP + ZA (OVX)	6	0.573	0.024	0.478	0.002	***	0.040	0.015	0.025	0.009	*

**Supplementary Table 5.** Comparisons between healthy and osteoporotic fracture repair of nanostructural parameters in callus regions (\* p < 0.05, \*\* p < 0.01).

									Inne	er Callus	(Nanostr	uctural p	aramete	rs)						
			Crys	tal Thickn	less	Predom	inant Oriei	ntation	Degree	e of Orient	ation	D 002 -	Crystal Le	ngth	D 310 -	Crystal W	/idth	Ċ	stal Volum	e
				(Å)			(degrees)						(mn)			(mn)			(nm³)	
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	Control	7	21.5	1.23		-33.2	6.14		0.59	0.006	*	,	,			'		,	,	
	VX	5	22.8	1.14		-25.9	15.7		0.60	0.009										
BAAD	Control	6 - 7	22.3	0.92		-2.7	17.1		0.58	0.009	**	346.9	2.05		139.2	2.04		1093	62	
	VV	6 - 7	22.6	1.85		-14.1	28.6		0.59	0.005		350.0	3.87		141.3	3.69		1141	134	
V2 · 07 V0	Control	5 - 7	21.8	0.89		-13.4	26.9		0.57	0.008		346.3	2.67		140.7	2.12		1077	49	
BIMP + 2A	OVX	5 - 7	22.4	1.22		0.48	24.9		0.58	0.015		349.43	4.74		140.7	4.61		1100	111	
								l	er Callus	(Nanoct	ructural r	Jaramete	rs - Hete	rogeneity	1					
			Crvs	tal Thickn	ess	Predom	inant Oriei	ntation	Degree	e of Orient	ation	D 002 -	Crystal Le	neth	77 D 310 -	Crvstal W	/idth	Ű	stal Volum	e
			5	(Å)			(degrees)	5	0				(mm)	0		(um)			(nm³)	,
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
	Control	7	2.30	0.34		51.9	60.9		0.081	0.01		,	,	,		,				
Untreatea	VX	5	2.31	0.23		44.3	4.09		0.069	0.01										
DVVD	Control	6 - 7	2.90	0.68	*	66.0	9.13		0.045	0.006	*	11.8	1.65	* *	23.0	1.11		259	45	*
TINIC	VV	6 - 7	3.83	0.69		54.7	13.6		0.055	0.007		17.5	4.00		24.5	1.66		317	29	
RAAD + 7A	Control	5 - 7	2.16	0.39		57.4	14.8		0.038	0.004		9.5	1.15		21.8	0.50		221	11	
	VV	5 - 7	2.39	0.74		64.65	7.40		0.043	0.006		11.40	3.49		23.0	1.83		249	46	
									Out	er Callus	(Nanostr	uctural p	aramete	rs)						
			Crvs	tal Thickn	ess	Predom	inant Oriei	ntation	Degree	e of Orient	ation	D 002 -	Crystal Le	ngth	D 310 -	Crystal W	/idth	CC	stal Volum	e
				(Å)			(degrees)		)				(ỷ	)		(¢)		•	(nm³)	
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Introcted	Control	7	22.8	1.13		-18.41	12.91		0.59	0.004	*	1	,		ı	ı	,	ı	ı	ı
0.00	OVX	5	22.4	1.07		-12.64	10.18		0.60	0.015					•		•	•	•	
BMP	Control	6 - 7	23.0	0.72		3.0	12.3		0.58	0.01	*	348.9	3.5		144.3	2.62	*	1166	59	
	VV	6 - 7	24.7	2.60		-4.50	19.04		0.61	0.03		354.2	10.8		147.9	2.64		1308	193	
BMP + ZA	Control	5 - 7	22.9	1.02		-0.6	9.9		0.58	0.01		350.3	2.7		144.7	0.95		1181	44	
	VV	5 - 7	23.8	1.27		1.0	22.1		0.59	0.02		353.5	3.5		146.0	3.56		1256	109	
		L						(	:		•		:	ľ						ſ
		1						no	ter Callu	s (Nanost	tructural	paramete	ers - Hete	erogeneit	۲)					
			Crys	stal Thickn	less	Predor	ninant Orie	ntation	Degree	e of Orient	tation	D 002 -	Crystal Le	ngth	D 310 -	· Crystal M	vidth	CC	stal Volum	e
				(Å)			(degrees)						(mu)			(mn)			(nm³)	
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Intracted	Control	7	2.03	0.40		42.1	6.28		0.056	0.02		,	ı	,	,	ı	,		,	ı
Ollineated	VV	5	2.09	0.51		35.77	6.20		0.057	0.01										ı
BAAD	Control	6 - 7	2.02	0.10		56.7	10.06	*	0.042	0.004	*	18.5	0.6		18.8	0.33		213	8	*
	VX	6 - 7	2.88	1.12		41.1	15.78		0.058	0.013		24.5	15.7		20.6	1.78		302	69	
AND + 7A	Control	5 - 7	2.03	0.32		49.0	16.36		0.043	0.005		13.4	2.1		20.3	2.34		226	25	
	VV	5 - 7	2.36	0.66		53.6	7.60		0.052	0.014		15.5	2.4		20.8	1.24		261	31	

**Supplementary Table 6.** Comparisons between healthy and osteoporotic fracture repair of nanostructural parameters in cortical regions (\* p < 0.05, \*\* p < 0.01).

									J	ortex (N	lanostruc	tural para	meters)							
			Crys	stal Thick	ıess	Predomi	inant Oriei	ntation	Degree	e of Orien	tation	D 002 -	Crystal Ler	\gth	D 310 - (	Crystal Wi	dth	Crys	tal Volum	e
				(Å)			(degrees)						(Å)			(Å)			(nm³)	
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD F	p-value	Mean	SD	p-value
10420401	Control	7	24.1	06.0		-7.20	5.55		0.63	0.01	*					,				
סווובמובמ	VVO	5	25.3	1.49		-8.08	2.70		0.68	0.04							-			
07.00	Control	6 - 7	25.0	2.11		-4.8	5.1		0.65	0.02		303.4	39.9		141.5	2.12		1075	188	
	VV	6 - 7	25.4	2.92		-3.36	8.80		0.68	0.03		316.4	49.3		141.2	1.23		1130	278	
V2 + 0VV0	Control	5 - 7	25.7	1.90		-3.2	4.6		0.66	0.03		336.6	14.8		143.7	3.78		1264	150	
DIVIP + 2A	VVO	5 - 7	24.6	1.12		-5.8	8.3		0.65	0.01		328.1	26.4		142.6	0.88		1167	111	
									Cortex (N	lanostru	ictural par	ameters	- Heterog	eneity)						
			Crys	stal Thick	ıess	Predomi	inant Oriei	ntation	Degree	e of Orien	tation	D 002 -	Crystal Ler	ıgth	D 310 - (	Crystal Wi	dth	Crys	tal Volum	a
				(Å)			(degrees)						(mn)			(uu)			(nm³)	
Treatment		z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD I	p-value	Mean	SD	p-value
Lotroctor L	Control	7	3.14	0.63		11.3	3.87		0.051	0.009							-			
סווויפמופמ	OVX	5	3.04	0.52		8.88	5.18		0.064	0.009								-		
arva	Control	6 - 7	2.84	0.46		21.0	7.27		0.059	0.006		53.2	21.8		17.2	2.13		274	36	
	VV	6 - 7	2.61	0.58		14.1	4.03		0.063	0.017		43.2	23.5		16.8	1.19		261	49	
VZ T AVVA	Control	5 - 7	3.17	0.37		14.0	7.66		0.057	0.012		41.4	20.0		17.3	1.23		310	43	
	VVV	5 - 7	2.86	0.42		18.0	9.30		0.055	0.009		47.5	14.3		17.2	0.79		298	38	

**Supplementary Table 7.** Comparison of Treatments: Comparisons of inner callus regions are presented between untreated, BMP-7 and BMP-7 + ZA treatments within either the healthy or the osteoporotic groups. **o** p < 0.05, **oo** p < 0.01, **ooo** p < 0.001 when compared to BMP only treated femurs). (\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001 when compared to Untreated femurs, and

								Con	trol (Na	anostruc	tural Pa	ramete	irs)						
		Cryst	tal Thickr	ıess	Predomi	nant Orie	ntation	Degree	of Orien	tation	D 002 -	Crystal L	ength.	D 310 -	Crystal	Width	Cry	stal Volui	ne
			(Å)		-	(degrees)						(Å)			(Å)			(nm³)	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	7	21.5	1.23		-33.2	6.1		0.59	0.006		,	ŗ	,	ı		ı	-	,	ı
BMP	6 - 7	22.3	0.92		-2.7	17.1	*	0.58	0.009	*	346.9	2.05		139.2	2.04		1093	62	
BMP + ZA	5 - 7	21.8	0.89		-13.4	26.9		0.57	0.008	0 ***	346.3	2.67		140.7	2.12		1077	49	
														-					
							Cont	trol (Na	nostruc	<u>tural Pa</u>	rameter	s - Hete	erogene	ity)					
		Cryst	tal Thickr	ıess	Predomi	nant Orie	Intation	Degree	of Orien	tation	D 002 -	Crystal L	.ength	D 310 -	Crystal	Width	Cry	stal Volui	ne
			(Å)		-	(degrees)						(Å)			(Å)			(nm³)	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	7	2.30	0.34		51.9	60.9		0.08	0.013		,	ı	,	·		ı	-	,	ı
BMP	6 - 7	2.90	0.68		66.0	9.13	*	0.05	0.006	*	11.8	1.65		23.0	1.11		259	45	
BMP + ZA	5 - 7	2.16	0.39	0	57.4	14.8		0.04	0.004	0 **	9.46	1.15	(U)	21.8	0.50		221	11	
								i				,							ſ
								Ó	VX (Nan	ostructi	ural Para	meter	s)						
		Cryst	tal Thickr	ıess	Predomi	nant Orie	entation	Degree	of Orien	tation	D 002 -	Crystal L	.ength	D 310 -	Crystal	Width	Cry	stal Volui	ne
			(Å)		-	(degrees)						(Å)			(Å)			(nm³)	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	5	22.8	1.14		-25.9	15.7		0.60	0.009		I	I	I	I	ı	I	-	I	I
BMP	6 - 7	22.6	1.85		-14.1	28.6		0.59	0.005	*	350.0	3.87		141.3	3.69		1141	134	
BMP + ZA	5 - 7	22.4	1.22		0.48	24.94		0.58	0.015	0 **	349.4	4.74		140.7	4.61		1100	111	
							9	X (Nanc	structu	ural Para	meters.	- Heter	ogeneit	()					
		Cryst	tal Thickr	ıess	Predomi	nant Orie	Intation	Degree	of Orien	tation	D 002 -	Crystal L	.ength	D 310 -	Crystal	Width	Cry	stal Volui	ne
			(Å)		-	(degrees)	-					(Å)			(Å)			(nm³)	
Treatment	z	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
Untreated	5	2.31	0.23		44.3	4.09		0.07	0.015		ı	ı	ı	ı	ı	ı	-	ı	ı
BMP	6 - 7	3.83	0.69	* *	54.7	13.6		0.05	0.007	*	17.5	4.00		24.5	1.66		317	29	
BMP + ZA	5 - 7	2.39	0.74	00	64.65	7.40	* *	0.04	0.006	0 **	11.4	3.49	0	23.0	1.83		249	46	(U)

BMP

p = 0.052 when compared to

G



Supplementary Figure 2. Callus – Cortex Comparisons: Heterogeneity

