

Standard and novel imaging methods for multiple myeloma: correlates with prognostic laboratory variables including gene expression profiling data

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Online Supplementary Table S1. Odds ratios and P values for associations between imaging parameters, GEP, and standard laboratory parameters.

Bolded cells indicate significant associations (P<0.01).

Independent variable	Baseline MBS-OL > 0			Baseline MBS-OL > 2		
	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value
Albumin < 3.5 g/dL	37/270 (13.7)	1.29 (0.75, 2.22)	0.408	26/270 (9.63)	1.21 (0.69, 2.13)	0.559
B2M ≥ 3.5 mg/L	62/270 (23.0)	1.44 (0.89, 2.33)	0.144	47/270 (17.4)	1.66 (0.99, 2.76)	0.068
B2M > 5.5 mg/L	32/270 (11.9)	1.70 (0.94, 3.08)	0.098	28/270 (10.4)	2.51 (1.37, 4.58)	0.004
CRP ≥ 8 mg/L	49/269 (18.2)	1.62 (0.97, 2.70)	0.070	33/269 (12.3)	1.31 (0.77, 2.23)	0.338
Hb < 10 g/dL	41/270 (15.2)	1.13 (0.68, 1.90)	0.693	31/270 (11.5)	1.29 (0.75, 2.22)	0.402
LDH ≥ 190 U/L	39/270 (14.4)	1.70 (0.98, 2.96)	0.069	29/270 (10.7)	1.70 (0.97, 3.00)	0.075
Platelet count < 150 x 10 ⁹ /L	13/270 (4.81)	0.76 (0.36, 1.60)	0.572	9/270 (3.33)	0.77 (0.34, 1.75)	0.689
Cytogenetic abnormalities	40/270 (14.8)	0.85 (0.51, 1.41)	0.606	31/270 (11.5)	1.08 (0.63, 1.84)	0.786
GEP-70 high risk	24/245 (9.80)	2.47 (1.19, 5.12)	0.019	20/245 (8.16)	2.90 (1.42, 5.92)	0.004
GEP-80 high risk	10/245 (4.08)	2.04 (0.72, 5.80)	0.201	7/245 (2.86)	1.66 (0.60, 4.64)	0.409
GEP del TP53	13/245 (5.31)	1.01 (0.46, 2.23)	1.000	9/245 (3.67)	0.97 (0.42, 2.26)	1.000
GEP CD-1 subgroup	9/245 (3.67)	3.72 (0.98, 14.10)	0.071	6/245 (2.45)	2.15 (0.67, 6.89)	0.214
GEP CD-2 subgroup	8/245 (3.27)	0.40 (0.17, 0.95)	0.046	7/245 (2.86)	0.62 (0.25, 1.53)	0.400
GEP HY subgroup	39/245 (15.9)	1.13 (0.66, 1.93)	0.684	28/245 (11.4)	1.14 (0.65, 2.00)	0.666
GEP LB subgroup	21/245 (8.57)	1.14 (0.59, 2.21)	0.738	11/245 (4.49)	0.66 (0.31, 1.39)	0.371
GEP MF subgroup	8/245 (3.27)	0.70 (0.28, 1.75)	0.498	6/245 (2.45)	0.81 (0.30, 2.18)	0.810
GEP MS subgroup	11/245 (4.49)	0.57 (0.26, 1.24)	0.185	7/245 (2.86)	0.54 (0.22, 1.30)	0.225
GEP PR subgroup	17/245 (6.94)	2.16 (0.95, 4.93)	0.069	15/245 (6.12)	2.94 (1.31, 6.63)	0.009
GEP centrosome index ≥ 3	34/245 (13.9)	2.04 (1.12, 3.73)	0.023	28/245 (11.4)	2.53 (1.37, 4.65)	0.004
GEP proliferation index ≥ 10	18/245 (7.35)	1.89 (0.87, 4.13)	0.120	15/245 (6.12)	2.31 (1.07, 5.00)	0.038
Baseline MRI-FL > 0	105/270 (38.9)	3.67 (2.07, 6.52)	<.001	76/270 (28.1)	3.60 (1.86, 6.97)	<.001
Baseline MRI-FL > 7	63/270 (23.3)	5.00 (2.85, 8.76)	<.001	51/270 (18.9)	5.41 (3.10, 9.43)	<.001
Baseline DHIM	11/ 82 (13.4)	2.26 (0.82, 6.19)	0.125	9/ 82 (11.0)	4.81 (1.33, 17.32)	0.026
Baseline PET-FL > 0	99/270 (36.7)	3.19 (1.86, 5.46)	<.001	73/270 (27.0)	3.46 (1.87, 6.40)	<.001
Baseline PET-FL > 3	66/270 (24.4)	4.01 (2.36, 6.81)	<.001	52/270 (19.3)	4.25 (2.48, 7.29)	<.001
Baseline EMD	7/270 (2.59)	1.00 (0.35, 2.84)	1.000	6/270 (2.22)	1.38 (0.48, 4.01)	0.578
FL-SUV > 3.9 (Bartel)	66/176 (37.5)	1.28 (0.69, 2.37)	0.526	49/176 (27.8)	1.24 (0.66, 2.34)	0.527
FL-SUV > 4.2 (Cavo)	64/176 (36.4)	1.52 (0.83, 2.80)	0.214	49/176 (27.8)	1.65 (0.88, 3.08)	0.122
Baseline Diffuse SUV ≤ 2	39/269 (14.5)	0.89 (0.53, 1.48)	0.696	29/269 (10.8)	1.02 (0.59, 1.75)	1.000

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Independent variable	Baseline MRI-FL > 0			Baseline MRI-FL > 7			DHIM*		
	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value
Albumin < 3.5 g/dL	48/270 (17.8)	0.83 (0.46, 1.48)	0.551	20/270 (7.41)	0.75 (0.42, 1.36)	0.380	8/ 82 (9.76)	0.76 (0.28, 2.07)	0.627
B2M ≥ 3.5 mg/L	86/270 (31.9)	1.19 (0.70, 2.01)	0.594	44/270 (16.3)	1.44 (0.86, 2.41)	0.190	19/ 82 (23.2)	3.80 (1.48, 9.74)	0.006
B2M > 5.5 mg/L	39/270 (14.4)	1.00 (0.53, 1.90)	1.000	21/270 (7.78)	1.35 (0.73, 2.49)	0.341	13/ 82 (15.9)	8.49 (2.44, 29.48)	<.001
CRP ≥ 8 mg/L	69/269 (25.7)	1.70 (0.95, 3.03)	0.092	40/269 (14.9)	2.25 (1.32, 3.83)	0.004	8/ 82 (9.76)	1.02 (0.37, 2.82)	1.000
Hb < 10 g/dL	53/270 (19.6)	0.65 (0.37, 1.12)	0.119	25/270 (9.26)	0.85 (0.48, 1.48)	0.578	14/ 82 (17.1)	1.65 (0.66, 4.12)	0.350
LDH ≥ 190 U/L	51/270 (18.9)	1.32 (0.72, 2.45)	0.448	30/270 (11.1)	1.94 (1.10, 3.42)	0.025	12/ 82 (14.6)	4.74 (1.55, 14.48)	0.006
Platelet count < 150 x 10 ⁹ /L	17/270 (6.30)	0.44 (0.21, 0.94)	0.040	7/270 (2.59)	0.55 (0.23, 1.33)	0.228	9/ 82 (11.0)	3.07 (0.97, 9.71)	0.076
Cytogenetic abnormalities	64/270 (23.7)	1.05 (0.61, 1.82)	0.890	36/270 (13.3)	1.64 (0.97, 2.79)	0.074	12/ 82 (14.6)	1.52 (0.59, 3.88)	0.469
GEP-70 high risk	33/245 (13.5)	4.18 (1.43, 12.28)	0.006	20/245 (8.16)	3.19 (1.56, 6.53)	0.002	3/ 74 (4.05)	5.75 (0.57, 58.30)	0.135
GEP-80 high risk	14/245 (5.71)	3.21 (0.71, 14.50)	0.159	11/245 (4.49)	5.55 (1.86, 16.60)	0.002	Not Estimable		
GEP del TP53	21/245 (8.57)	1.34 (0.54, 3.30)	0.663	9/245 (3.67)	1.06 (0.46, 2.47)	1.000	4/ 74 (5.41)	2.55 (0.53, 12.38)	0.250
GEP CD-1 subgroup	10/245 (4.08)	2.24 (0.48, 10.47)	0.519	5/245 (2.04)	1.63 (0.50, 5.31)	0.523	1/ 74 (1.35)	1.77 (0.11, 29.48)	1.000
GEP CD-2 subgroup	16/245 (6.53)	0.48 (0.22, 1.07)	0.085	6/245 (2.45)	0.54 (0.21, 1.40)	0.285	6/ 74 (8.11)	1.63 (0.49, 5.48)	0.529
GEP HY subgroup	59/245 (24.1)	1.25 (0.69, 2.25)	0.554	23/245 (9.39)	0.83 (0.46, 1.49)	0.560	4/ 74 (5.41)	0.28 (0.08, 0.94)	0.038
GEP LB subgroup	24/245 (9.80)	0.47 (0.24, 0.93)	0.043	9/245 (3.67)	0.53 (0.24, 1.18)	0.146	7/ 74 (9.46)	1.02 (0.35, 3.01)	1.000
GEP MF subgroup	14/245 (5.71)	0.85 (0.33, 2.21)	0.805	5/245 (2.04)	0.67 (0.24, 1.91)	0.623	4/ 74 (5.41)	2.55 (0.53, 12.38)	0.250
GEP MS subgroup	23/245 (9.39)	1.12 (0.49, 2.56)	0.840	11/245 (4.49)	1.19 (0.54, 2.62)	0.684	4/ 74 (5.41)	1.46 (0.36, 5.98)	0.716
GEP PR subgroup	25/245 (10.2)	6.16 (1.42, 26.75)	0.006	17/245 (6.94)	4.58 (1.99, 10.57)	<.001	1/ 74 (1.35)	1.77 (0.11, 29.48)	1.000
GEP centrosome index ≥ 3	45/245 (18.4)	1.85 (0.91, 3.74)	0.100	27/245 (11.0)	2.55 (1.38, 4.72)	0.003	2/ 74 (2.70)	0.30 (0.06, 1.47)	0.191
GEP proliferation index ≥ 10	26/245 (10.6)	3.14 (1.05, 9.34)	0.034	17/245 (6.94)	3.46 (1.58, 7.56)	0.003	2/ 74 (2.70)	1.80 (0.24, 13.57)	0.620
Baseline MBS-OL > 0	105/270 (38.9)	3.67 (2.07, 6.52)	<.001	63/270 (23.3)	5.00 (2.85, 8.76)	<.001	11/ 82 (13.4)	2.26 (0.82, 6.19)	0.125
Baseline MBS-OL > 2	76/270 (28.1)	3.60 (1.86, 6.97)	<.001	51/270 (18.9)	5.41 (3.10, 9.43)	<.001	9/ 82 (11.0)	4.81 (1.33, 17.32)	0.026
Baseline PET-FL > 0	154/270 (57.0)	12.35 (6.69, 22.82)	<.001	75/270 (27.8)	5.07 (2.58, 9.97)	<.001	12/ 82 (14.6)	2.59 (0.95, 7.04)	0.074
Baseline PET-FL > 3	93/270 (34.4)	19.09 (6.72, 54.26)	<.001	58/270 (21.5)	7.38 (4.18, 13.05)	<.001	3/ 82 (3.66)	5.36 (0.53, 53.97)	0.149
Baseline EMD	10/270 (3.70)	0.87 (0.29, 2.62)	0.778	7/270 (2.59)	1.91 (0.67, 5.46)	0.258	1/ 82 (1.22)	0.39 (0.04, 3.67)	0.645
FL-SUV > 3.9 (Bartel)	100/176 (56.8)	1.28 (0.51, 3.19)	0.638	51/176 (29.0)	1.34 (0.71, 2.51)	0.427	8/ 22 (36.4)	2.00 (0.36, 11.23)	0.666
FL-SUV > 4.2 (Cavo)	93/176 (52.8)	1.06 (0.43, 2.62)	1.000	50/176 (28.4)	1.61 (0.86, 2.99)	0.161	8/ 22 (36.4)	2.00 (0.36, 11.23)	0.666
Baseline diffuse SUV ≤ 2	64/269 (23.8)	1.33 (0.76, 2.36)	0.396	29/269 (10.8)	1.07 (0.62, 1.84)	0.889	4/ 82 (4.88)	0.25 (0.08, 0.82)	0.022

*DHIM comparisons limited to those with no MRI FL.

Independent variable	Baseline PET-FL > 0			Baseline PET-FL > 3			FL-SUV** > 3.9 (Bartel)		
	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value
Albumin < 3.5 g/dL	44/270 (16.3)	0.79 (0.45, 1.37)	0.470	24/270 (8.89)	0.86 (0.48, 1.51)	0.668	25/176 (14.2)	0.66 (0.33, 1.32)	0.277
B2M ≥ 3.5 mg/L	88/270 (32.6)	1.94 (1.15, 3.26)	0.015	53/270 (19.6)	1.91 (1.15, 3.15)	0.015	62/176 (35.2)	1.73 (0.93, 3.23)	0.116
B2M > 5.5 mg/L	41/270 (15.2)	1.60 (0.83, 3.07)	0.207	28/270 (10.4)	2.10 (1.16, 3.82)	0.019	31/176 (17.6)	2.00 (0.91, 4.42)	0.096
CRP ≥ 8 mg/L	70/269 (26.0)	2.47 (1.38, 4.40)	0.002	44/269 (16.4)	2.34 (1.38, 3.95)	0.002	45/175 (25.7)	1.02 (0.54, 1.92)	1.000
Hb < 10 g/dL	54/270 (20.0)	0.94 (0.55, 1.62)	0.890	32/270 (11.9)	1.15 (0.67, 1.95)	0.681	35/176 (19.9)	1.04 (0.53, 2.03)	1.000
LDH ≥ 190 U/L	51/270 (18.9)	1.72 (0.94, 3.17)	0.081	34/270 (12.6)	2.13 (1.22, 3.72)	0.009	36/176 (20.5)	1.50 (0.74, 3.02)	0.301
Platelet count < 150 x 10 ⁹ /L	19/270 (7.04)	0.75 (0.35, 1.60)	0.554	12/270 (4.44)	1.08 (0.50, 2.32)	0.846	15/176 (8.52)	2.26 (0.72, 7.12)	0.208
Cytogenetic abnormalities	67/270 (24.8)	1.79 (1.03, 3.12)	0.043	37/270 (13.7)	1.36 (0.81, 2.29)	0.284	42/176 (23.9)	0.90 (0.48, 1.69)	0.749
GEP-70 high risk	32/245 (13.1)	4.34 (1.62, 11.58)	0.001	23/245 (9.39)	3.70 (1.79, 7.65)	<.001	28/156 (17.9)	4.73 (1.56, 14.31)	0.003
GEP-80 high risk	14/245 (5.71)	4.29 (0.95, 19.33)	0.057	10/245 (4.08)	3.29 (1.15, 9.39)	0.029	13/156 (8.33)	7.74 (0.98, 60.87)	0.035
GEP del TP53	20/245 (8.16)	1.49 (0.63, 3.54)	0.411	9/245 (3.67)	0.84 (0.36, 1.96)	0.835	11/156 (7.05)	0.60 (0.23, 1.56)	0.321
GEP CD-1 subgroup	11/245 (4.49)	6.68 (0.85, 52.60)	0.060	5/245 (2.04)	1.32 (0.40, 4.28)	0.759	6/156 (3.85)	0.61 (0.18, 2.11)	0.515
GEP CD-2 subgroup	14/245 (5.71)	0.49 (0.22, 1.06)	0.098	9/245 (3.67)	0.80 (0.35, 1.83)	0.682	9/156 (5.77)	0.95 (0.30, 2.99)	1.000
GEP HY subgroup	51/245 (20.8)	0.96 (0.55, 1.66)	0.888	28/245 (11.4)	0.94 (0.54, 1.64)	0.888	37/156 (23.7)	1.63 (0.78, 3.38)	0.213
GEP LB subgroup	19/245 (7.76)	0.38 (0.19, 0.73)	0.005	8/245 (3.27)	0.36 (0.16, 0.81)	0.013	11/156 (7.05)	0.70 (0.26, 1.85)	0.454
GEP MF subgroup	16/245 (6.53)	1.92 (0.68, 5.43)	0.244	11/245 (4.49)	2.14 (0.87, 5.27)	0.100	13/156 (8.33)	2.48 (0.68, 9.13)	0.266
GEP MS subgroup	20/245 (8.16)	0.94 (0.44, 2.03)	1.000	8/245 (3.27)	0.57 (0.24, 1.32)	0.235	10/156 (6.41)	0.48 (0.19, 1.23)	0.136
GEP PR subgroup	25/245 (10.2)	8.30 (1.92, 35.95)	<.001	18/245 (7.35)	4.32 (1.85, 10.10)	<.001	16/156 (10.3)	0.93 (0.38, 2.27)	1.000
GEP centrosome index ≥ 3	43/245 (17.6)	2.04 (1.04, 3.98)	0.041	29/245 (11.8)	2.32 (1.27, 4.25)	0.007	28/156 (17.9)	0.98 (0.47, 2.06)	1.000
GEP proliferation index ≥ 10	27/245 (11.0)	6.00 (1.77, 20.40)	<.001	19/245 (7.76)	3.73 (1.68, 8.28)	0.001	22/156 (14.1)	2.70 (0.96, 7.58)	0.074
Baseline MBS OL > 0	99/270 (36.7)	3.19 (1.86, 5.46)	<.001	66/270 (24.4)	4.01 (2.36, 6.81)	<.001	66/176 (37.5)	1.28 (0.69, 2.37)	0.526
Baseline MBS OL > 2	73/270 (27.0)	3.46 (1.87, 6.40)	<.001	52/270 (19.3)	4.25 (2.48, 7.29)	<.001	49/176 (27.8)	1.24 (0.66, 2.34)	0.527
Baseline MRI-FL > 0	154/270 (57.0)	12.35 (6.69, 22.82)	<.001	93/270 (34.4)	19.09 (6.72, 54.26)	<.001	100/176 (56.8)	1.28 (0.51, 3.19)	0.638
Baseline MRI-FL > 7	75/270 (27.8)	5.07 (2.58, 9.97)	<.001	58/270 (21.5)	7.38 (4.18, 13.05)	<.001	51/176 (29.0)	1.34 (0.71, 2.51)	0.427
Baseline DHIM	12/ 82 (14.6)	2.59 (0.95, 7.04)	0.074	3/ 82 (3.66)	5.36 (0.53, 53.97)	0.149	8/ 22 (36.4)	2.00 (0.36, 11.23)	0.666
Baseline PET-FL > 0	Not Estimable			Not Estimable			Not Estimable		
Baseline PET-FL > 3	Not Estimable			Not Estimable			77/176 (43.8)	4.60 (2.37, 8.91)	<.001
Baseline EMD	13/270 (4.81)	3.67 (0.81, 16.62)	0.095	9/270 (3.33)	2.85 (0.98, 8.26)	0.055	10/176 (5.68)	1.94 (0.51, 7.33)	0.383
FL-SUV > 3.9 (Bartel)	Not Estimable			77/176 (43.8)	4.60 (2.37, 8.91)	<.001	Not Estimable		
FL-SUV > 4.2 (Cavo)	Not Estimable			75/176 (42.6)	5.28 (2.74, 10.17)	<.001	Not Estimable		
Baseline Diffuse SUV ≤ 2	54/269 (20.1)	0.80 (0.47, 1.37)	0.493	28/269 (10.4)	0.78 (0.45, 1.33)	0.416	20/176 (11.4)	0.18 (0.09, 0.37)	<.001

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Independent variable	Baseline EMD			Diffuse SUV ≤ 2		
	n/N (%)	Odds ratio (95% CI)	p-value	n/N (%)	Odds ratio (95% CI)	p-value
Albumin < 3.5 g/dL	8/270 (2.96)	3.41 (1.19, 9.78)	0.030	23/269 (8.55)	1.00 (0.56, 1.79)	1.000
B2M ≥ 3.5 mg/L	11/270 (4.07)	3.68 (1.14, 11.88)	0.030	35/269 (13.0)	0.79 (0.47, 1.32)	0.431
B2M > 5.5 mg/L	10/270 (3.70)	9.09 (2.96, 27.85)	<.001	12/269 (4.46)	0.52 (0.26, 1.04)	0.075
CRP ≥ 8 mg/L	8/269 (2.97)	2.40 (0.84, 6.84)	0.156	33/268 (12.3)	1.33 (0.78, 2.27)	0.334
Hb < 10 g/dL	9/270 (3.33)	3.60 (1.24, 10.47)	0.020	29/269 (10.8)	1.15 (0.67, 1.99)	0.673
LDH ≥ 190 U/L	8/270 (2.96)	3.63 (1.27, 10.43)	0.027	27/269 (10.0)	1.55 (0.87, 2.74)	0.137
Platelet count < 150 x 10 ⁹ /L	4/270 (1.48)	2.95 (0.88, 9.88)	0.087	9/269 (3.35)	0.80 (0.35, 1.81)	0.689
Cytogenetic abnormalities	5/270 (1.85)	0.98 (0.33, 2.96)	1.000	39/269 (14.5)	2.03 (1.19, 3.45)	0.013
GEP-70 high risk	2/245 (0.82)	1.26 (0.26, 6.10)	0.674	9/244 (3.69)	0.63 (0.28, 1.41)	0.340
GEP-80 high risk	1/245 (0.41)	1.46 (0.18, 12.18)	0.532	5/244 (2.05)	0.95 (0.32, 2.82)	1.000
GEP del TP53	2/245 (0.82)	1.78 (0.36, 8.68)	0.365	7/244 (2.87)	0.67 (0.27, 1.64)	0.520
GEP CD-1 subgroup	Not Estimable			5/244 (2.05)	1.53 (0.47, 4.97)	0.532
GEP CD-2 subgroup	1/245 (0.41)	0.74 (0.09, 5.97)	1.000	5/244 (2.05)	0.40 (0.15, 1.08)	0.089
GEP HY subgroup	2/245 (0.82)	0.44 (0.09, 2.07)	0.347	28/244 (11.5)	1.19 (0.68, 2.10)	0.562
GEP LB subgroup	1/245 (0.41)	0.46 (0.06, 3.67)	0.695	15/244 (6.15)	1.15 (0.57, 2.30)	0.721
GEP MF subgroup	1/245 (0.41)	1.07 (0.13, 8.79)	1.000	5/244 (2.05)	0.63 (0.22, 1.78)	0.470
GEP MS subgroup	2/245 (0.82)	1.51 (0.31, 7.33)	0.641	11/244 (4.51)	1.11 (0.51, 2.43)	0.840
GEP PR subgroup	4/245 (1.63)	5.24 (1.43, 19.27)	0.023	10/244 (4.10)	1.26 (0.55, 2.90)	0.663
GEP centrosome index ≥ 3	4/245 (1.63)	1.95 (0.55, 6.92)	0.287	23/244 (9.43)	1.58 (0.86, 2.93)	0.149
GEP proliferation index ≥ 10	1/245 (0.41)	0.71 (0.09, 5.73)	1.000	9/244 (3.69)	0.88 (0.38, 2.02)	0.838
Baseline MBS-OL > 0	7/270 (2.59)	1.00 (0.35, 2.84)	1.000	39/269 (14.5)	0.89 (0.53, 1.48)	0.696
Baseline MBS-OL > 2	6/270 (2.22)	1.38 (0.48, 4.01)	0.578	29/269 (10.8)	1.02 (0.59, 1.75)	1.000
Baseline MRI-FL > 0	10/270 (3.70)	0.87 (0.29, 2.62)	0.778	64/269 (23.8)	1.33 (0.76, 2.36)	0.396
Baseline MRI-FL > 7	7/270 (2.59)	1.91 (0.67, 5.46)	0.258	29/269 (10.8)	1.07 (0.62, 1.84)	0.889
Baseline DHIM	1/ 82 (1.22)	0.39 (0.04, 3.67)	0.645	4/ 82 (4.88)	0.25 (0.08, 0.82)	0.022
Baseline PET-FL > 0	13/270 (4.81)	3.67 (0.81, 16.62)	0.095	54/269 (20.1)	0.80 (0.47, 1.37)	0.493
Baseline PET-FL > 3	9/270 (3.33)	2.85 (0.98, 8.26)	0.055	28/269 (10.4)	0.78 (0.45, 1.33)	0.416
Baseline EMD	Not Estimable			4/269 (1.49)	0.75 (0.23, 2.42)	0.780
FL-SUV > 3.9 (Bartel)	10/176 (5.68)	1.94 (0.51, 7.33)	0.383	20/176 (11.4)	0.18 (0.09, 0.37)	<.001
FL-SUV > 4.2 (Cavo)	10/176 (5.68)	2.33 (0.62, 8.77)	0.249	19/176 (10.8)	0.22 (0.11, 0.43)	<.001
Baseline Diffuse SUV ≤ 2	4/269 (1.49)	0.75 (0.23, 2.42)	0.780	Not Estimable		

Online Supplementary Table S2. List of examined gene probes.

A. Bone-related genes

Bone-related probes		Bone-related probes	
Gene name	Probe	Gene name	Probe
CCL3	205114_s_at		201412_at
CST6	206595_at	LRP10	227252_at
	231248_at		231861_at
DKK1	204602_at	LRP11	1561180_at
FRZB	203697_t		225060_at
	203698_s_at	219631_at	
	231273_x_at	LRP12	220253_s_at
244419_at	220254_at		
GF11	206589_at		1559731_x_at
IL6	205207_at	LRP16	1562624_at
LRP1	1555353_at		219188_s_at
	1569042_at	LRPAP1	201186_at
	200784_s_at	LRPPRC	1557360_at
	200785_s_at		211615_s_at
LRP1B	219643_at	211971_s_at	230594_at
	234184_at	PTH1H	1556773_at
234209_at	206300_s_at		
LRP2	205710_at	210355_at	211756_at
LRP2BP	207797_s_at	SFRP2	223121_s_at
LRP3	204381_at		223122_s_at
LRP4	212850_s_at	TNFRSF11B	204932_at
	237146_at		204933_s_at
LRP5	209468_at	TNFSF11	210643_at
	229591_at		211153_s_at
LRP5L	1561076_at	241248_at	WNT10A
	214873_at	223709_s_at	
239558_at	205606_at	229154_at	WNT10B
	239558_at	206213_at	
LRP6	205606_at		
	225745_at		
	34697_at		
	1566902_at		
	1566903_at		
LRP8	1569933_at		
	205282_at		
	208433_s_at		

B. GEP-70 probes

GEP-70 probes		GEP-70 probes	
Gene name	Probe	Gene name	Probe
--	227278_at	LGALS1	201105_at
--	227547_at	LTBP1	202729_s_at
--	237964_at	MCLC	213628_at
--	242488_at	MGC15606	243011_at
AD-020	222495_at	MGC4308	224523_s_at
AHCYL1	200850_s_at	MGC57827	225834_at
AIM2	206513_at	MPHOSPH1	205235_s_at
ALDOA	200966_x_at	NA	1557277_a_at
ASPM	219918_s_at	OPN3	1565951_s_at
BIRC5	210334_x_at	PAPD1	218947_s_at
C6orf173	226936_at	PARG1	1554736_at
CBX3	201091_s_at	PDHA1	1555864_s_at
CCT2	201947_s_at	PFN1	200634_at
CKAP1	216194_s_at	PNPLA4	209740_s_at
CKS1B	201897_s_at	PSMD4	210460_s_at
CPSF3	225082_at	RAD18	224200_s_at
CTBS	218924_s_at	RAN	200750_s_at
DKFZP586L0	221970_s_at	RFC4	204023_at
DKFZp77901	238952_x_at	RFP2	230192_at
DSG2	217901_at	ROBO1	213194_at
EIF2C2	213310_at	RUVBL1	201614_s_at
ENO1	201231_s_at	SELI	1555274_a_at
EVI5	209717_at	SLC19A1	211576_s_at
EXOSC4	58696_at	SNX5	222417_s_at
FABP5	202345_s_at	STK6	204092_s_at
FLJ13052	213607_x_at	TAGLN2	200916_at
FLJ20489	48106_at	TBRG4	220789_s_at
FUCA1	202838_at	TCOF1	244686_at
GNG10	201921_at	TMPO	203432_at
IFI16	206332_s_at	TRIM33	212435_at
ILF3	208931_s_at	TRIP13	204033_at
KIAA1754	225582_at	UBE2I	213535_s_at
KIF14	206364_at	UBE2R2	226954_at
LARS2	204016_at	WEE1	212533_at
LAS1L	208117_s_at	YWHAZ	200638_s_at

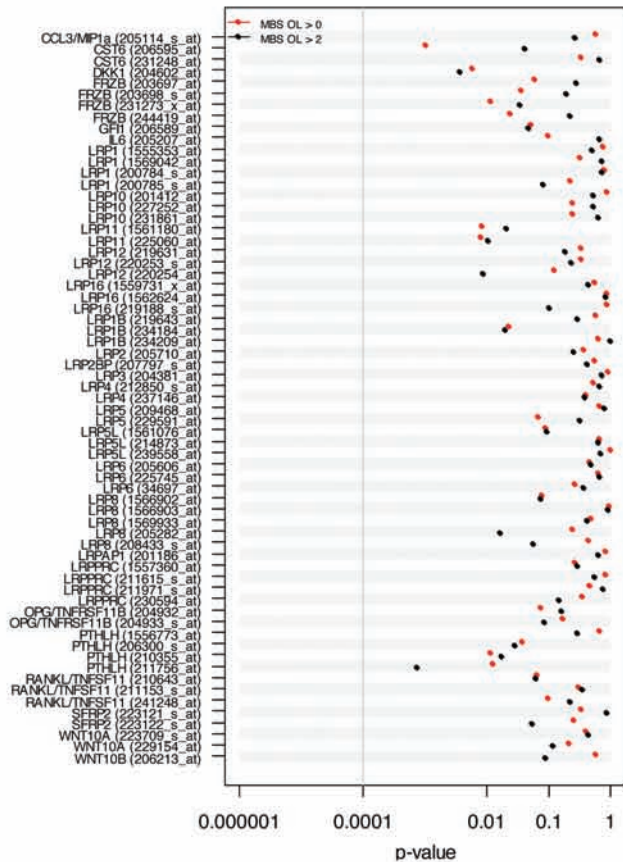
Online Supplementary Table S3. P values for comparisons in Online Supplementary Figure S1. (Significant P values are highlighted in yellow.)

Gene name (probe)	p-values							
	Diff. SUV ≤2	FL-SUV > 3.9	MBS-OL > 0	MBS-OL > 2	MRI-FL > 0	MRI-FL > 7	PET-FL > 0	PET-FL > 3
CCL3/MIP1a (205114_s_at)	0.31579	0.82894	0.58373	0.26077	0.62492	0.76409	0.55490	0.30192
CST6 (206595_at)	0.49319	0.67925	0.00103	0.04025	0.01780	0.05120	0.00536	0.16161
CST6 (231248_at)	0.05824	0.45063	0.33646	0.64660	0.33997	0.04238	0.36429	0.34817
DKK1 (204602_at)	0.05967	0.51687	0.00563	0.00369	0.00698	0.29308	0.23468	0.59265
FRZB (203697_at)	0.73517	0.86687	0.05952	0.28169	0.05866	0.83634	0.41809	0.69240
FRZB (203698_s_at)	0.59533	0.99406	0.03593	0.18919	0.02746	0.93942	0.34242	0.44102
FRZB (231273_x_at)	0.11571	0.62687	0.01153	0.03373	0.68587	0.11244	0.43058	0.65458
FRZB (244419_at)	0.84402	0.74587	0.02318	0.22147	0.04596	0.71918	0.27080	0.75880
GF11 (206589_at)	0.03189	0.09259	0.05038	0.04600	0.06052	0.03175	0.03330	0.29579
IL6 (205207_at)	0.53698	0.12122	0.09598	0.66326	0.03072	0.00866	0.13061	0.08443
LRP1 (1555353_at)	0.10827	0.23397	0.74959	0.49678	0.48089	0.37000	0.43774	0.30502
LRP1 (1569042_at)	0.68751	0.06464	0.31292	0.70990	0.62979	0.44955	0.97458	0.56558
LRP1 (200784_s_at)	0.19469	0.00316	0.77370	0.71062	0.59195	0.74779	0.69455	0.70775
LRP1 (200785_s_at)	0.75940	0.60981	0.21914	0.08207	0.16872	0.49272	0.65214	0.75379
LRP10 (201412_at)	0.31486	0.33464	0.86929	0.51958	0.23028	0.09336	0.78146	0.61366
LRP10 (227252_at)	0.90511	0.29693	0.24638	0.52458	0.07288	0.00625	0.15537	0.14508
LRP10 (231861_at)	0.09023	0.03515	0.23836	0.62535	0.29897	0.01139	0.19460	0.26963
LRP11 (1561180_at)	0.04576	0.94209	0.00840	0.02059	0.66293	0.14519	0.94695	0.52492
LRP11 (225060_at)	0.23511	0.38848	0.00783	0.01028	0.00238	0.00063	0.16371	0.08027
LRP12 (219631_at)	0.63208	0.84495	0.33104	0.18693	0.02837	0.48416	0.67048	0.30280
LRP12 (220253_s_at)	0.36328	0.63880	0.33556	0.23106	0.28904	0.51196	0.86161	0.35450
LRP12 (220254_at)	0.68823	0.99851	0.12403	0.00881	0.86205	0.04472	0.29732	0.08291
LRP16 (1559731_x_at)	0.64872	0.40613	0.55066	0.43794	0.42537	0.30716	0.17033	0.22578
LRP16 (1562624_at)	0.74615	0.97326	0.86431	0.82204	0.68443	0.47327	0.87046	0.82849
LRP16 (219188_s_at)	0.32238	0.96286	0.85153	0.10125	0.78040	0.70973	0.85940	0.73739
LRP1B (219643_at)	0.60746	0.93172	0.56706	0.29476	0.66862	0.23798	0.51238	0.34238
LRP1B (234184_at)	0.82360	0.21342	0.02291	0.02012	0.61868	0.85618	0.45283	0.28674
LRP1B (234209_at)	0.20213	0.32539	0.61578	0.98313	0.41518	0.19066	0.63200	0.09567
LRP2 (205710_at)	0.81005	0.86980	0.36925	0.25191	0.49568	0.07221	0.57453	0.92496
LRP2BP (207797_s_at)	0.03709	0.01373	0.53805	0.41888	0.97259	0.33179	0.22955	0.90628
LRP3 (204381_at)	0.66414	0.52170	0.89569	0.70633	0.72304	0.51322	0.58030	0.23605
LRP4 (212850_s_at)	0.90357	0.90659	0.51620	0.64453	0.47541	0.52777	0.34673	0.07675
LRP4 (237146_at)	0.83341	0.94802	0.39383	0.38699	0.57175	0.37838	0.71263	0.98572
LRP5 (209468_at)	0.47025	0.91988	0.65054	0.77676	0.63819	0.20805	0.22811	0.95043
LRP5 (229591_at)	0.08310	0.42859	0.06846	0.31749	0.60148	0.77675	0.92310	0.25559
LRP5L (1561076_at)	0.04066	0.12761	0.08983	0.09349	0.50316	0.28686	0.69455	0.14250
LRP5L (214873_at)	0.80404	0.02529	0.66756	0.62195	0.54406	0.52078	0.71893	0.43990
LRP5L (239558_at)	0.72279	0.58652	0.97331	0.67727	0.24589	0.88379	0.98878	0.41145
LRP6 (205606_at)	0.43071	0.07317	0.45459	0.48409	0.49630	0.62198	0.42676	0.09909
LRP6 (225745_at)	0.25276	0.68334	0.62600	0.65214	0.10633	0.32792	0.94993	0.87501
LRP6 (34697_at)	0.23473	0.76854	0.26335	0.36574	0.50129	0.56404	0.60819	0.73668
LRP8 (1566902_at)	0.76753	0.24741	0.07576	0.07522	0.36696	0.70900	0.14658	0.13350
LRP8 (1566903_at)	0.00687	0.01439	0.92723	0.91732	0.22014	0.65188	0.55238	0.56622
LRP8 (1569933_at)	0.03907	0.35557	0.48007	0.40954	0.63889	0.98134	0.97981	0.76598
LRP8 (205282_at)	0.26669	0.33092	0.24564	0.01618	0.01359	0.00869	0.00084	0.00028
LRP8 (208433_s_at)	0.00006	0.88743	0.44484	0.05727	0.07071	0.01575	0.07240	0.08426
LRPAP1 (201186_at)	0.40838	0.03532	0.82538	0.62944	0.77588	0.81812	0.41058	0.44438
LRPPRC (1557360_at)	0.32762	0.05529	0.26568	0.29478	0.41743	0.98134	0.78650	0.29405
LRPPRC (211615_s_at)	0.22018	0.97623	0.84515	0.54482	0.81755	0.23838	0.97757	0.51453
LRPPRC (211971_s_at)	0.03762	0.69983	0.46337	0.75548	0.47299	0.17873	0.95068	0.96769
LRPPRC (230594_at)	0.22980	0.56116	0.34795	0.14721	0.69673	0.91542	0.63534	0.84173
OPG/TNFRSF11B (204932_at)	0.07676	0.01424	0.07268	0.16138	0.71057	0.50136	0.90674	0.73313
OPG/TNFRSF11B (204933_s_at)	0.99459	0.93468	0.16988	0.08482	0.86591	0.53736	0.84104	0.61101
PTH1H (1556773_at)	0.82888	0.52170	0.64405	0.29125	0.32722	0.53608	0.83079	0.22651
PTH1H (206300_s_at)	0.57006	0.38034	0.03747	0.02786	0.13539	0.28073	0.24139	0.93769
PTH1H (210355_at)	0.96908	0.69157	0.01132	0.01692	0.53950	0.40532	0.77499	0.45001
PTH1H (211756_at)	0.61495	0.58397	0.01264	0.00073	0.05122	0.42881	0.18140	0.59395
RANKL/TNFSF11 (210643_at)	0.32238	0.46190	0.06444	0.06290	0.32239	0.40863	0.12544	0.09289
RANKL/TNFSF11 (211153_s_at)	0.23434	0.83039	0.31033	0.34131	0.05228	0.01430	0.41165	0.30413
RANKL/TNFSF11 (241248_at)	0.72933	0.35848	0.09580	0.21750	0.26308	0.96114	0.57645	0.44550
SFRP2 (223121_s_at)	0.16693	0.05672	0.33828	0.84605	0.95381	0.91000	0.59125	0.91075
SFRP2 (223122_s_at)	0.32191	0.49778	0.25270	0.05360	0.45918	0.45660	0.30257	0.92720
WNT10A (223709_s_at)	0.95980	0.27018	0.40344	0.44193	0.26350	0.38903	0.93427	0.66619
WNT10A (229154_at)	0.36790	0.44952	0.20848	0.11406	0.10676	0.69671	0.35788	0.43379
WNT10B (206213_at)	0.94514	0.58141	0.57322	0.08943	0.88991	0.42825	0.31867	0.05155

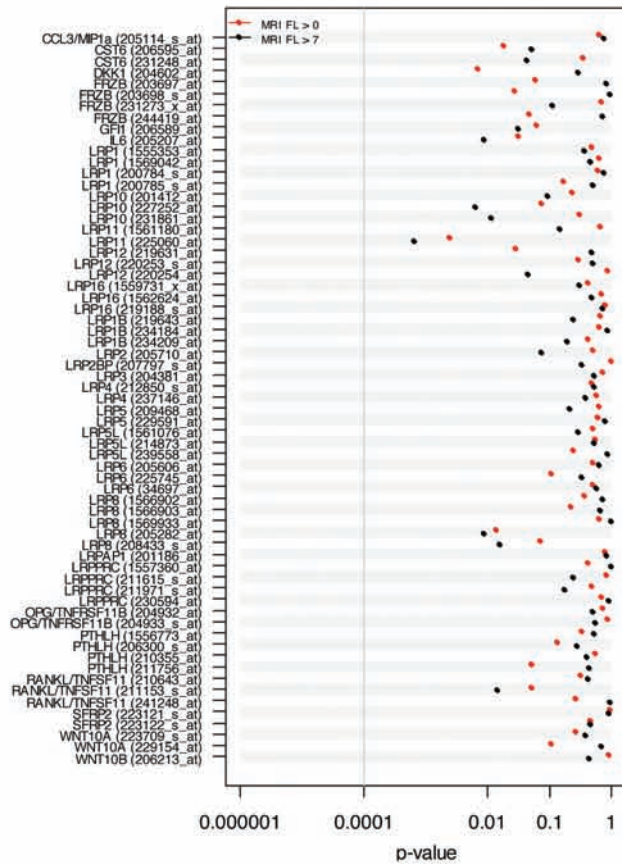
Online Supplementary Table S4. P values for comparisons in Online Supplementary Figure S2 (Significant P values are highlighted in yellow.)

Gene name (probe)	p-values							
	Diff. SUV ≤2	FL-SUV > 3.9	MBS-OL > 0	MBS-OL > 2	MRI-FL > 0	MRI-FL > 7	PET-FL > 0	PET-FL > 3
--- (1557277_a_at)	0.86303	0.91841	0.35969	0.13830	0.87441	0.05430	0.53128	0.70146
--- (227278_at)	0.06428	0.11085	0.23336	0.75840	0.37907	0.36072	0.27285	0.64983
--- (242488_at)	0.90127	0.65352	0.39034	0.97930	0.82213	0.80075	0.73088	0.75450
AD-020 (222495_at)	0.02006	0.00175	0.33420	0.25270	0.04396	0.28642	0.00052	0.00112
AHCYL1 (200850_s_at)	0.36791	0.00732	0.21443	0.16662	0.62770	0.36277	0.09602	0.01784
AIM2 (206513_at)	0.40073	0.45288	0.18141	0.12597	0.92726	0.58865	0.96935	0.88467
ALDOA (200966_x_at)	0.98222	0.34027	0.77093	0.94330	0.03514	0.21590	0.99103	0.36488
ASPM (219918_s_at)	0.97217	0.32265	0.96466	0.43737	0.00553	0.00486	0.00231	0.00654
BIRC5 (210334_x_at)	0.73298	0.39570	0.06150	0.00817	0.00276	0.00283	0.00247	0.00097
C6orf173 (226936_at)	0.67685	0.42103	0.01347	0.00948	0.00003	0.00498	0.00025	0.00134
CBX3 (201091_s_at)	0.84175	0.84641	0.76403	0.37292	0.32095	0.37471	0.80313	0.74379
CCT2 (201947_s_at)	0.94051	0.02796	0.11111	0.02022	0.62631	0.01550	0.19719	0.01352
CKAP1 (216194_s_at)	0.13377	0.52170	0.50863	0.37810	0.22574	0.64557	0.64472	0.14691
CKS1B (201897_s_at)	0.89973	0.88449	0.75370	1.00000	0.28415	0.11806	0.07951	0.13228
CPSF3 (225082_at)	0.81983	0.52899	0.10633	0.07875	0.02229	0.10082	0.06297	0.21795
CTBS (218924_s_at)	0.98222	0.10355	0.62152	0.22147	0.11176	0.30625	0.28958	0.14072
DKFZP586L0724 (221970_s_at)	0.84326	0.27836	0.74274	0.42667	0.68949	0.33374	0.09714	0.11143
DKFZp779O175 (238952_x_at)	0.41501	0.61635	0.26762	0.45400	0.48764	0.73968	0.86677	0.99324
DSG2 (217901_at)	0.74762	0.85516	0.54284	0.41889	0.46997	0.77675	0.75925	0.60443
EIF2C2 (213310_at)	0.18974	0.35363	0.70010	0.11584	0.20608	0.37523	0.22738	0.68477
ENO1 (201231_s_at)	0.85010	0.21966	0.13572	0.07585	0.05788	0.00010	0.11976	0.04124
EVI5 (209717_at)	0.38463	0.19679	0.24162	0.61315	0.18671	0.10982	0.51361	0.04554
EXOSC4 (58696_at)	0.35064	0.34027	0.13336	0.10719	0.01647	0.08834	0.03417	0.27873
FABP5 (202345_s_at)	0.05400	0.02040	0.04677	0.00226	0.00012	0.03083	0.00034	0.000002
FLJ20489 (48106_at)	0.20248	0.88155	0.64210	0.73077	0.88991	0.53672	0.42133	0.82409
FUCA1 (202838_at)	0.82435	0.30388	0.41164	0.05219	0.51071	0.23606	0.28618	0.78908
GNG10 (201921_at)	0.09435	0.95989	0.12716	0.27530	0.01177	0.00062	0.11976	0.01529
IFI16 (206332_s_at)	0.04726	0.01230	0.30947	0.48049	0.27933	0.61100	0.75568	0.41253
ILF3 (208931_s_at)	0.35164	0.06966	0.23765	0.22513	0.37167	0.50013	0.91789	0.29841
KIAA1754 (225582_at)	0.76827	0.27507	0.04091	0.00078	0.18802	0.08371	0.01018	0.03977
KIF14 (206364_at)	0.35314	0.58781	0.47671	0.35966	0.00202	0.01473	0.00150	0.00122
LARS2 (204016_at)	0.07905	0.57886	0.00351	0.00794	0.04490	0.00379	0.00096	0.00022
LAS1L (208117_s_at)	0.02310	0.76143	0.38537	0.38490	0.02788	0.25711	0.35495	0.59070
LGALS1 (201105_at)	0.30562	0.42535	0.82679	0.50719	0.01999	0.05491	0.05423	0.07113
LOC388795 (227547_at)	0.79730	0.35946	0.25496	0.23825	0.96789	0.44432	0.09886	0.21971
LOC644541 (237964_at)	0.57468	0.34978	0.13643	0.46508	0.10848	0.21159	0.02497	0.19045
LTBP1 (202729_s_at)	0.29477	0.51326	0.44268	0.79672	0.20713	0.00625	0.01787	0.00191
MCLC (213628_at)	0.00942	0.03044	0.60123	0.29656	0.75341	0.62888	0.03401	0.01360
MGC15606 (243011_at)	0.84251	0.76569	0.08449	0.02640	0.54210	0.39333	0.17268	0.13945
MGC4308 (224523_s_at)	0.40674	0.31631	0.02275	0.14428	0.11354	0.08980	0.42133	0.18918
MGC57827 (225834_at)	0.96753	0.39363	0.73864	0.18790	0.00316	0.00415	0.00280	0.00131
MPHOSPH1 (205235_s_at)	0.00226	0.17042	0.84020	0.35265	0.02451	0.51385	0.00259	0.01030
NADK (213607_x_at)	0.47743	0.05673	0.38192	0.21323	0.24911	0.16646	0.00969	0.00054
OPN3 (1565951_s_at)	0.17420	0.38135	0.27870	0.92877	0.12859	0.53096	0.89116	0.81311
PAPD1 (218947_s_at)	0.97680	0.83039	0.21813	0.63903	0.20502	0.04279	0.06622	0.07551
PARG1 (1554736_at)	0.56874	0.62687	0.09138	0.04868	0.82595	0.35309	0.50399	0.78691
PDHA1 (1555864_s_at)	0.88747	0.20332	0.70479	0.53592	0.41856	0.85083	0.02516	0.20453
PFN1 (200634_at)	0.23818	0.73462	0.24198	0.22586	0.88913	0.00949	0.14373	0.18106
PNPLA4 (209740_s_at)	0.93743	0.50134	0.38340	0.67165	0.20292	0.74115	0.94247	0.73739
PSMD4 (210460_s_at)	0.53442	0.62292	0.16737	0.09946	0.34497	0.92083	0.40316	0.16996
RAD18 (224200_s_at)	0.80704	0.93320	0.37995	0.08516	0.17208	0.12678	0.01605	0.07504
RAN (200750_s_at)	0.06208	0.70121	0.25458	0.13933	0.22125	0.00039	0.18448	0.05883
RFC4 (204023_at)	0.29835	0.83475	0.14899	0.13627	0.26984	0.03068	0.01482	0.01310
RFP2 (230192_at)	0.27173	0.59167	0.57199	0.28341	0.14087	0.19298	0.05637	0.15770
ROBO1 (213194_at)	0.64385	0.33464	0.94521	0.30058	0.97416	0.96192	0.93502	0.38156
RUVBL1 (201614_s_at)	0.09171	0.13426	0.30094	0.12644	0.80613	0.40094	0.52515	0.20724
SEL1 (1555274_a_at)	0.90741	0.22106	0.29009	0.60373	0.94209	0.93167	0.65823	0.34818
SLC19A1 (211576_s_at)	0.09512	0.90216	0.00432	0.00057	0.18056	0.35714	0.02461	0.00782
SNX5 (22417_s_at)	0.70040	0.11769	0.46062	0.29169	0.09226	0.81737	0.23877	0.02373
STK6 (204092_s_at)	0.55632	0.02329	0.03490	0.01242	0.00001	0.00045	0.00027	0.00029
TAGLN2 (200916_at)	0.07612	0.84495	0.75233	0.62671	0.78643	0.50509	0.40106	0.06406
TBRG4 (220789_s_at)	0.77717	0.59167	0.20265	0.05069	0.04903	0.00952	0.13816	0.05361
TCOF1 (244686_at)	0.11548	0.01578	0.14696	0.08157	0.54797	0.34506	0.67664	0.05338
TMPO (203432_at)	0.50799	0.64414	0.57568	0.29611	0.71497	0.05132	0.24177	0.15550
TRIM33 (212435_at)	0.70040	0.77995	0.01189	0.02462	0.00211	0.00486	0.02634	0.00464
TRIP13 (204033_at)	0.67685	0.64014	0.03028	0.00260	0.00001	0.00007	0.00003	0.00004
UBE2I (213535_s_at)	0.13580	0.57378	0.83949	0.51089	0.24351	0.02849	0.25757	0.46483
UBE2R2 (226954_at)	0.63900	0.93765	0.32880	0.90665	0.04490	0.00849	0.54988	0.59005
WEE1 (212533_at)	0.02612	0.26059	0.78897	0.21217	0.75192	0.17999	0.04255	0.03471
YWHAZ (200638_s_at)	0.78535	0.48605	0.42516	0.94636	0.17487	0.62611	0.25915	0.21936

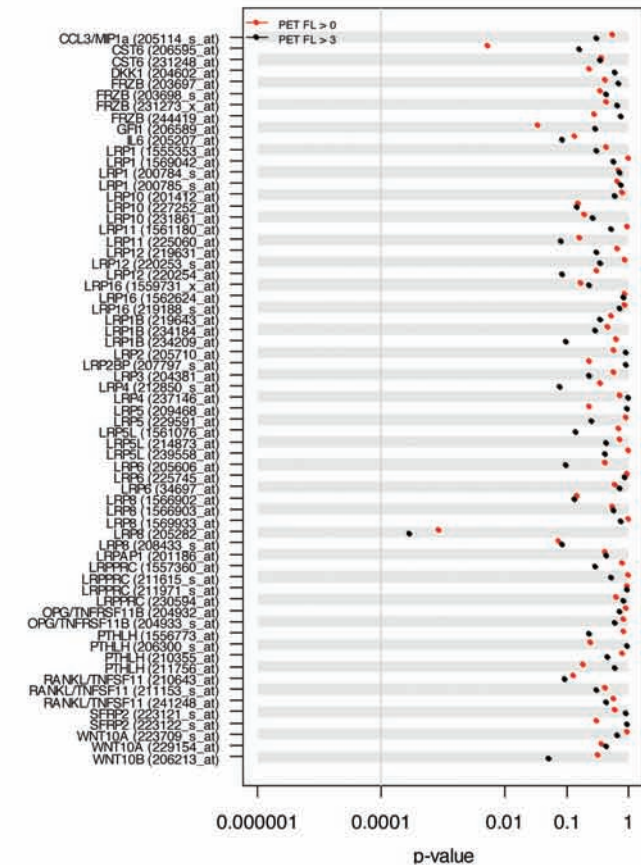
A MBS osteolytic lesions



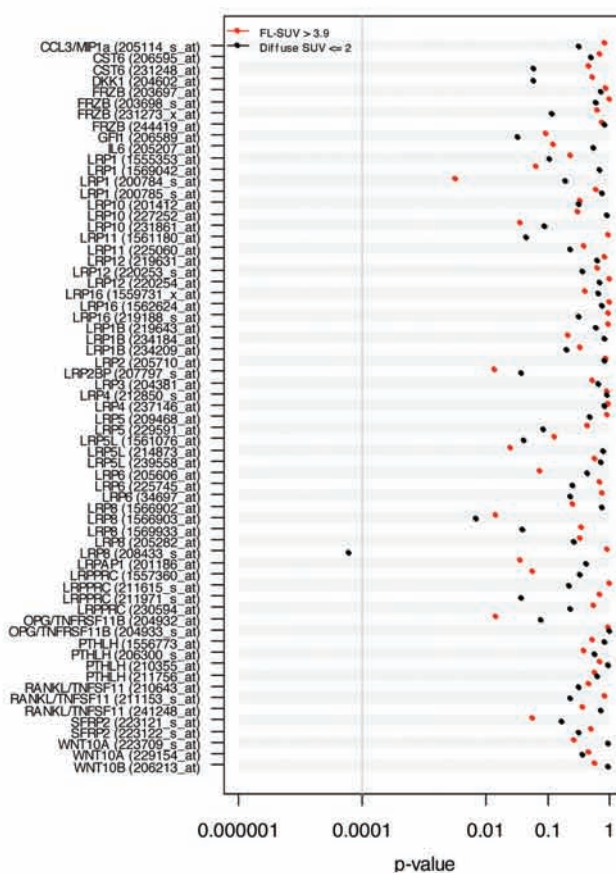
B MRI focal lesions



C PET focal lesions



D PET SUV



Online Supplementary Figure S1. Comparison of bone-related genes with imaging parameters. Labels on the y-axis are presented as the gene name followed by the probe number in parentheses. Points on the left side of the vertical gray line represent significant comparisons.

