

Supplementary Table (S1): Comparison between patient groups with BC regarding circulating MDSC levels in relation to tumor histopathology.

	Invasive duct carcinoma (n = 25) ^a	Invasive duct carcinoma and coexistent duct carcinoma in situ (n = 2) ^a	Lobular carcinoma (n = 3) ^a	p value ^b
Total MDSC	1 (0.8–1.3)	1 (0.9–1)	0.3 (0.3–1.4)	0.43
M-MDSC	12.5 (9.4–20)	22.6 (17.9–27.3)	1.8 (0–46.8)	0.33
G-MDSC	12.8 (11–19.7)	6.1 (5.4–6.8)	33.5 (4.8–93.1)	0.096
e-MDSC	45.4 (34.8–53.4)	44.4 (30.6–58.1)	26.6 (0.8–59.8)	0.51
Abnormal MDSC	22.7 (11.8–28.8)	36.8 (36.8–36.8)	6.1 (4.9–21.8)	0.095

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S2): Comparison between patient groups with BC regarding circulating MDSC levels in relation to tumor size.

	Tumor size		P value ^b
	< 2 cm (n=25) ^a	> 2 cm (n=5) ^a	
Total MDSCs	1 (0.8-1.3)	0.7 (0.6-0.9)	0.3
M-MDSCs	13.9 (9.4-20.3)	11.2 (2.8-11.8)	0.21
G-MDSCs	11.9 (8.7-17.3)	28.9 (20.2-30.7)	0.02
e- MDSCs	42.8 (31.6-53.4)	46.1 (45.4-60)	0.59
Abnormal MDSCs	23.6 (15.5-30.4)	7.2 (6.6-10.5)	0.037

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S3): Comparison between patient groups with BC regarding circulating MDSC levels in relation to lymph nodes involvement.

	Lymph nodes involvement		p value ^b
	Positive (n = 18) ^a	Negative (n = 12) ^a	
Total MDSC	1 (0.7–1.3)	1 (0.8–1.3)	0.79
M-MDSC	16.2 (5.6–20.5)	12.2 (8.4–18.3)	0.76
G-MDSC	11.7 (8.4–24.3)	13.4 (11–20.2)	0.69
e-MDSC	47.4 (36.7–58.4)	40 (31.6–50.4)	0.49
Abnormal MDSC	17.2 (9.2–27.1)	23.2 (11.8–30.1)	0.41

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S4): Comparison between patient groups with BC regarding circulating MDSC levels in relation to distant metastasis.

	Distant metastasis		p value ^b
	Positive (n = 2) ^a	Negative (n = 28) ^a	
Total MDSC	1.1 (0.6–1.5)	1 (0.8–1.3)	1
M-MDSC	20.2 (20–20.3)	12.2 (5.6–19.3)	0.26
G-MDSC	10.8 (9.4–12.1)	13.4 (9.7–21.2)	0.51
e-MDSC	42.8 (26.8–58.7)	44.5 (32.9–55.8)	0.91
Abnormal MDSC	26.4 (9.2–43.5)	22.6 (10.5–28.8)	0.65

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S5): Comparison between patient groups with BC regarding circulating MDSC levels in relation to progesterone receptors.

	Progesterone receptors		p value ^b
	Positive (n = 26) ^a	Negative (n = 4) ^a	
Total MDSC	1 (0.7–1.3)	1 (0.8–1.3)	1
M-MDSC	12.7 (9.4–20.3)	11.4 (2.2–20.2)	0.66
G-MDSC	13.4 (8.7–20.2)	12 (11.5–21.4)	0.98
e-MDSC	43.2 (30.6–50.4)	59.4 (46.4–71.3)	0.11
Abnormal MDSC	22.7 (13.8–28.8)	7.9 (5.7–21.5)	0.23

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S6): Comparison between patient groups with BC regarding circulating MDSC levels in relation to estrogen receptors.

	Estrogen receptors		p value ^b
	Positive (n = 28) ^a	Negative (n = 2) ^a	
Total MDSC	1 (0.8–1.3)	1.1 (0.6–1.5)	0.97
M-MDSC	12.7 (8.9–20.3)	11.4 (2.8–20)	0.9
G-MDSC	12.7 (9.1–20)	21.4 (12.1–30.7)	0.51
e-MDSC	43.2 (31.1–51.9)	59.4 (58.7–60)	0.14
Abnormal MDSC	22.7 (11.8–30.1)	7.9 (6.6–9.2)	0.15

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S7): Comparison between patient groups with BC regarding circulating MDSC levels in relation to HER2/neu receptors.

	HER2/neu receptors		p value ^b
	Positive (n = 5) ^a	Negative (n = 25) ^a	
Total MDSC	0.9 (0.9–1.1)	1 (0.7–1.4)	0.75
M-MDSC	9.7 (9.4–12.8)	13.9 (8.4–20.3)	0.42
G-MDSC	18.5 (14.2–19.7)	12.1 (9.4–20.2)	0.48
e-MDSC	48.7 (43.5–58.1)	42.8 (31.6–53.4)	0.67
Abnormal MDSC	25.3 (15–28.9)	21.8 (10.5–28.8)	0.74

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.

Supplementary Table (S8): Comparison between patients with BC receiving neoadjuvant therapy compared to those who did not regarding circulating MDSC levels.

	Neoadjuvant therapy		p value ^b
	Yes (n = 15) ^a	No (n = 15) ^a	
Total MDSC	1 (0.6–1.4)	0.9 (0.8–1.3)	0.81
M-MDSC	9.7 (1.8–20)	14.5 (11.8–20.6)	0.07
G-MDSC	16 (11–30.7)	12.6 (8–20.2)	0.41
e-MDSC	43.5 (26.8–59.8)	45.4 (34.1–53.4)	0.84
Abnormal MDSC	21.8 (6.6–28.8)	22.7 (13.8–30.1)	0.78

^aData are presented as median and interquartile range. ^bp-values < 0.05 were considered statistically significant. Abbreviations: BC, breast cancer; e-MDSC, early-stage myeloid derived suppressor cells; G-MDSC, granulocytic myeloid derived suppressor cells; M-MDSC, monocytic myeloid derived suppressor cells; n, number.