

Fig.S1 Details of the 41 OS patients

No.	Gender	Age	Tumor location	Surgical plan	Enneking stage	The follow-up	IRS
1	Female	15	Right distal femur	Tumor resection and prosthetic knee replacement	Ila	Lost follow-up in the 30 th month	2.2
2	Female	21	Right distal femur	Hip disarticulation	IIIb	Lung metastasis/ Died in the 16 th month	6.2
3	Male	18	Proximal right humerus	Tumor resection and prosthetic shoulder joint replacement	Ilb	Tumor free	5.6
4	Male	21	Proximal left tibia	Tumor resection and prosthetic knee replacement	Ila	Lost follow-up in the 27 th month	3.7
5	Female	30	Left distal tibia	Knee disarticulation	Ilb	Lost follow-up in the 12 th month	6.0
6	Male	28	Left distal femur	Tumor resection and autograft	IIIb	Brain metastasis/ Died in the 15 th month	6.1
7	Male	67	Right distal femur	Hip disarticulation	IIIb	Lung metastasis/ Died in the 10 th month	6.2
8	Female	13	Proximal left tibia	Tumor resection and prosthetic knee replacement	Ilb	Tumor free	5.8
9	Female	16	Right distal femur	Tumor resection and prosthetic knee replacement	Ila	Tumor free	3.3
10	Female	22	Right distal femur	Tumor resection and prosthetic knee replacement	Ila	Tumor free	5.8
11	Male	19	Right distal radius	Elbow disarticulation	Ilb	Tumor free	6.1
12	Female	17	Proximal left tibia	Tumor resection and prosthetic knee replacement	Ila	Tumor free	3.2
13	Female	21	Right distal femur	Hip disarticulation	Ilb	Tumor free	4.1
14	Female	29	Proximal left humerus	Tumor resection and prosthetic shoulder joint replacement	Ila	Tumor free	4.3
15	Male	20	Right distal femur	Tumor resection and prosthetic knee replacement	Ila	Tumor free	4.1

16	Male	16	Left distal femur	Hip disarticulation	IIIb	Lung metastasis/ Died in the 14 th month	5.2
17	Male	19	Left distal femur	Tumor resection and prosthetic knee replacement	IIb	Tumor free	4.4
18	Female	14	Right distal femur	Tumor resection and prosthetic knee replacement	IIb	Lung metastasis/ Died in the 30 th month	5.9
19	Female	31	Proximal right femur	Hip disarticulation	IIIb	Lung metastasis/ Died in the 13 th month	6.0
20	Female	29	Proximal right humerus	Tumor resection and prosthetic shoulder joint replacement	IIb	Tumor free	3.9
21	Male	36	Right distal femur	Tumor resection and prosthetic knee replacement	IIb	Lost follow-up in the 31 st month	2.1
22	Female	19	Proximal left humerus	Tumor resection and prosthetic shoulder joint replacement	IIa	Tumor free	4.3
23	Female	16	Right distal femur	Tumor resection and autograft	IIa	Tumor free	3.3
24	Male	19	Left distal femur	Tumor resection and prosthetic knee replacement	IIb	Tumor free	3.0
25	Male	27	Right distal femur	Tumor resection and prosthetic knee replacement	IIa	Lost follow-up in the 29 st month	2.8
26	Male	22	Proximal left tibia	Tumor resection and prosthetic knee replacement	IIb	Tumor free	3.0
27	Female	19	Left distal femur	Tumor resection and prosthetic knee replacement	IIIa	Brain metastasis/ Died in the 26 th month	3.1
28	Male	18	Proximal left tibia	Tumor resection and prosthetic knee replacement	IIa	Tumor free	5.7
29	Female	69	Left distal tibia	Knee disarticulation	IIIa	Lung metastasis/ Died in the 32 th month	5.1
30	Male	25	Right distal femur	Tumor resection and prosthetic knee replacement	IIa	Tumor free	4.5

31	Male	20	Left distal femur	Tumor resection and prosthetic knee replacement	I Ib	Lung metastasis/ Died in the 30 th month	4.3
32	Male	22	Proximal right tibia	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	5.7
33	Female	25	Right distal femur	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	3.5
34	Male	55	Right distal tibia	Knee disarticulation	III b	Lung metastasis/ Died in the 25 th month	5.4
35	Male	16	Left distal femur	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	3.4
36	Female	17	Proximal left tibia	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	3.1
37	Male	23	Right distal femur	Tumor resection and prosthetic knee replacement	I Ib	Lost follow-up in the 11 st month	5.6
38	Male	19	Left distal femur	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	3.2
39	Female	21	Left distal femur	Tumor resection and prosthetic knee replacement	I Ib	Lung metastasis/ Died in the 36 th month	3.6
40	Male	19	Right distal femur	Tumor resection and autograft	I Ib	Lost follow-up in the 26 st month	5.7
41	Male	18	Proximal right tibia	Tumor resection and prosthetic knee replacement	I Ia	Tumor free	3.6

Correlation with MUC15 expression and clinical characteristics

Clinical characteristics	n	MUC15	
		Expression level	p
Age \leq 24	29	4.35 \pm 0.23	0.48
Age $>$ 24	12	4.66 \pm 0.40	
Male	22	4.52 \pm 0.27	0.68
Female	19	4.35 \pm 0.29	
Ennking stage(II)	33	4.21 \pm 0.21	0.01 (*)
Ennking stage(III)	8	5.41 \pm 0.37	