

**Supplementary**

**Table S1** Coding form

Variable	Code	Label
X1		group
	0	development
	1	validation
X2		age
	0	<25
	1	25-49
	2	50-74
X3		sex
	0	male
	1	female
X4		race
	0	white
	1	Black
X5		others
	0	Lung metastasis
	1	no
X6		yes
		Histological type
	0	Osteosarcoma
	1	Chondrosarcoma
X7		Ewing sarcoma
	2	Others
	3	Laterality
X8		Laterality
	0	Right - origin of primary
	1	Left - origin of primary single
X8		Tumor Size

**Table S1** (continued)

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Variable	Code	Label
X9		First malignant primary indicator
	0	yes
	1	no
X10		Surgery
	0	yes
	1	no
X11		Radiation
	0	no
	1	yes
X12		Chemotherapy
	0	yes
	1	no
X13		Total number of in situ/malignant tumors
		T
	0	T1
	1	T2
	2	T3
X14		N
	0	N0
	1	N1
X15		M
	0	M0
	1	M1
X16		Survival months