The Oncologist
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Supplemental Table for:
Immunotherapy: A New (and Old) Approach to Treatment of Soft Tissue and Bone Sarcomas
Michael J. Nathenson et al.

Table S1. Characteristic chromosomal abnormalities and genetic alternations associated with soft tissue and bone sarcomas

Type of soft tissue or bone sarcoma	Chromosomal abnormality or genetic alteration	Gene or gene fusion
Ewing's/primitive neuroectodermal tumor (PNET)	t(11;22)(q24;q12) t(21;22)(q22;q12) t(2;22)(q33;q12) t(7;22)(p22;q12) t(17;22)(q12;q12) Inv(22)(q12;q12) t(16;21)(p11;q22) t(2;16)(q33;p11)	EWS1-FLI1 EWS1-ERG EWSR1-FEV EWSR1-ETV1 EWSR1-E1AF EWSR1-ZSG FUS-ERG FUS-FEV
Desmoplastic small round cell tumor	t(11;22)(p13;q12)	EWSR1-WT1
Alveolar rhabdomyosarcoma	t(2;13)(q35;q14) t(1;13)(q36;q14) t(X;2)(q13;p11)	PAX3-FOX01 PAX7-FOX01 PAX3-AFX
Myxoid/round cell liposarcoma	t(12;16)(q13;p11) t(12;22)(q13;q12)	FUS-DD1T3 EWSR1-DD1T3
Alveolar soft part sarcoma	der(17)t(X;17)(p11.2;q25)	ASPL-TFE3
Angiomatoid fibrous histiocytoma	t(12;22)(q13;q12) t(2;22)(q33;q12) t(12;16)(q13;p11)	EWSR1-ATF1 EWSR1-CREB1 FUS-ATF1
Clear cell sarcoma	t(12;22)(q13;q12) t(2;22)(q33;q12)	EWSR1-ATF1 EWSR1-CREB1
Congenital fibrosarcoma	t(12;15)(p13;q25)	ETV6-NTRK3
Myxoid chondrosarcoma	t(9;22)(q22;q12) t(9;17)(q22;q11) t(9;15)(q22;q21) t(3;9)(q11;q22)	EWSR1-NR4A3 TAF2N-NR4A3 TCF12-NR4A3 TGF-NR4A3
Inflammatory myofibroblastic tumor	t(1;2)(q22;p23) t(2;19)(p23;p13) t(2;17)(p23;q23) t(2;2)(p23;q13) t(2;11)(p23;p15) inv(2)(p23;q35)	TPM3-ALK TPM4-ALK CLTC-ALK RANBP2-ALK CARS-ALK ATIC-ALK
Low-grade fibromyxoid sarcoma	t(7;16)(q33;p11) t(11;16)(p11;p11)	FUS-CREB3L2 FUS-CREB3L1
Synovial sarcoma	t(X;18)(p11;q11)	SS18-SSX(1, 2, 4)
Tenosynovial giant cell tumor/pigmented villonodular synovitis (PVNS)	t(1;2)(p13;q35)	CSF-1
Dermatofibrosarcoma	t(17;22)(q21;q13)	COLIA1-PDGRB
Epithelioid hemangioendothelioma	t(1;13)(p36;q25)	WWTR1-CAMTA1
Mesenchymal chondrosarcoma	--	HEY1-NCOA2

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Endometrial stromal tumor	-- --	JAZF1-SUZ12 YWHAE-FAM22
Atypical lipomatous tumor/well differentiated liposarcoma, dedifferentiated liposarcoma	Amp 12q14-15	CDk4, MDM2, SAS, GL1, HMGA2
Epithelioid sarcoma	Inactivation of INI1	INI1
Extrarenal rhabdoid tumor	Inactivation of INI1	INI1
Desmoid fibromatosis	Trisomy 8, 29, -5q21	CTNNB1 or APC mutations
Sporadic, familial GIST	Activating mutations	CKIT and PDFGR

This table shows known recurrent chromosomal alterations, including translocations (t), inversions (inv), polyploidy, and complex rearrangements (der), and genetic alterations including gene amplification (amp), gene inactivation, and activating mutations by specific soft tissue or bone sarcoma subtype, with the corresponding involved gene. Obtained from multiple sources [57, 109, 117, 143-152].