**Table 2. Other Gene Fusion Sarcoma Breakpoint Analysis: NGS> DNA Sequence and In-frame Analysis**

Sarcoma Gene Fusion DNA Sequence (30bp <>30bp) on 5’ and 3’ Side of Breakpoint In-Frame 20-mer Peptide

Clear Cell Sarcoma EWS-ATF exon 8-4

TGGGCGGGGAGGAGGACGCGGTGGAATGGG<>AAAATTTTGAAAGACTTATCTTCTGAAGA GRGGGRGGMG<>KILKDLSSED

Synovial sarcoma SS18-SSX2 exon 10-6

CCCCAGCAGAGGCCTTATGGATATGACCAG<>ATCATGCCCAAGAAGCCAGCAGAGGAAGGA PQQRPYGYDQ<>IMPKKPAEEG

BCOR-CCNB3 sarcoma (exon 15-5 fusion)

CCCCAGTGATCTGGCCTCAGACAACTACTG<>GCATAAGCTGGAAGTCACACCAGTAGTAGC PSDLASDNYW<>HKLEVTPVVA

CIC-CUX sarcoma (exon 20-1 fusion)

CACGGAGCAGCCCCCTGGAGCTGAGGCTCC<>GAGTCCGTGGTGGGGCTGGGGCCGGGGTCC TEQPPGAEAP<>SPWWGWGRGP

CCTGACCCCACCTCACCCAGCTCGGACTCT<>CCGTGGTGGGGCTGGGGCCGGGGTCCCCAG PDPTSPSSDS<>PWWGWGRGPQ

TGACCCCACCTCACCCAGCTCGGACTCTGG<>GCGGACCGCCGTCACCGGATCCCAGACCGC DPTSPSSDSG<>RTAVTGSQTA

Rhabdomyosarcoma PAX3-FOXO1 exon 7-2 (N=2 note identical translation of 6 amino acids on PAX side of breakpoint)

TTGGCAATGGCCTCTCACCTCACAATTCAA<>TTCGTCATAATCTGTCCCTACACAGCAAGT PTIG**NGLSPQ**<>NSIRHNLSLH

CCCCACCATTGGCAATGGCCTCTCACCTCA<>GAATTCAATTCGTCATAATCTGTCCCTACA PTIG**NGLSPQ**<>NSIRHNLSLH

Rhabdomyosarcoma PAX7-FOXO1 exon 7-2 (N=2 note identical translation of 6 amino acids on PAX side of breakpoint)

AACCCGGTCAGCAACGGCCTGTCTCCTCAG<>AATTCAATTCGTCATAATCTGTCCCTACAC NPVS**NGLSPQ**<>NSIRHNLSLH

AACCCGGTCAGCAACGGCCTGTCTCCTCAG<>AATTCAATTCGTCATAATCTGTCCCTACAC NPVS**NGLSPQ**<>NSIRHNLSLH

Key: blue < 3” sarcoma gene (EWS, SS18, BCOR, CIC, PAX3, PAX7)

Red >5” sarcoma fusion gene partner (ATF, SSX2, CCNB3, DUX, FOXO1)