**Supplementary Figure S1. Western blots confirming knockdown of studied proteins using indicated pooled siRNA.** Samples were treated with 25 nM quisinostat for 16 hours.

**Supplementary Figure S2. Dose curve of quisinostat in synovial sarcoma cell lines.** SS18-SSX2 cell lines: SYO-1 and FUJI, SS18-SSX1 cell lines: Yamato-SS, MoJo, HS-SY-II, and YaFuss, and non-translocation, non-synovial sarcoma control cell line HEK-293T were treated with increasing doses of quisinostat for 24 hours. Error bars represent standard error of mean from conditions performed in triplicate.

**Supplementary Figure S3. HDAC inhibition induces down-regulation of cell cycle effectors in six synovial sarcoma cell lines**. Expression profile following HDAC inhibition demonstrates a class effect in the down-regulation of cell cycle progression effectors, ribosomal and mitochondrial biogenesis signals, suggesting cell cycle progression is blocked. Solid line represents relative pre-treatment expression, dotted line represents approximate average relative expression of gene category.