## **Description of additional supplementary files:**

**Supplementary Data 1:** Spreadsheet listing the genes that encompass the CDK4/6-RB integrated signature.

**Supplementary Data 2:** Spreadsheet denotes genes that are differentially expressed based on the deletion of RB1. The tumor cases which exhibit >5% deletion of RB1 were used for this analysis. All significantly associated genes that are either up or down regulated with RB1 deletion are indicated by a "1" in the tumor types as listed in the separate tabs.

**Supplementary Data 3:** Spreadsheet denotes genes that are differentially expressed based on the heterozygous loss RB1. The tumor cases which exhibit >10% heterozygous loss of RB1 were used for this analysis. All significantly associated genes that are either up or down regulated with RB1 deletion are indicated by a "1" in the tumor types as listed in the separate tabs.

**Supplementary Data 4:** Spreadsheet lists all genes were identified as being either positively or inversely correlated with the CDK4/6-RB integrated signature. Cutoffs were determined by bootstrapping as defined in the Methods.