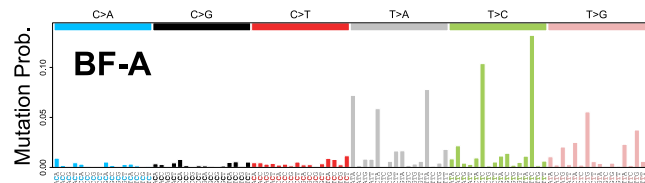
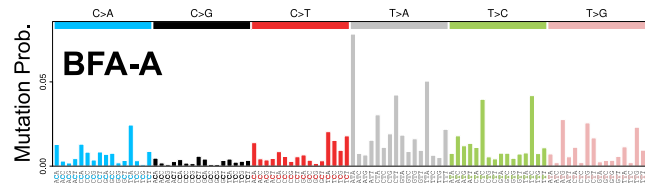
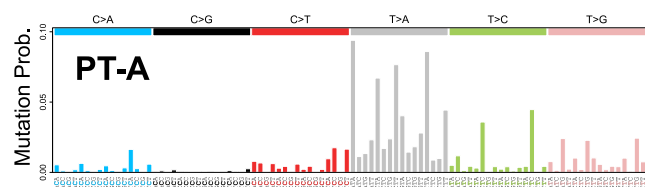
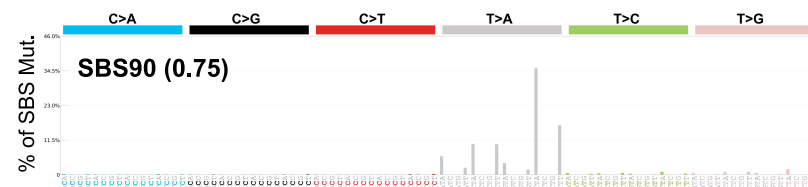
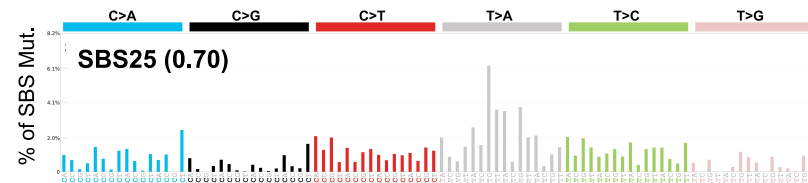
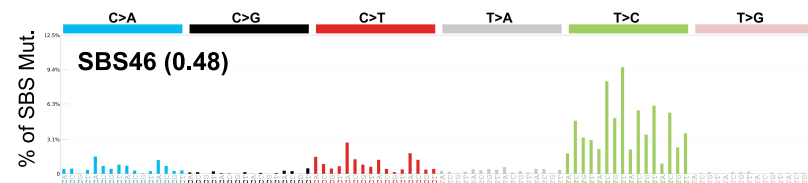
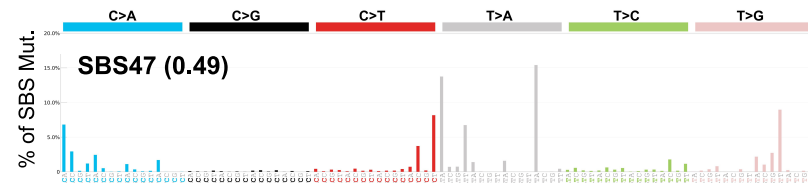
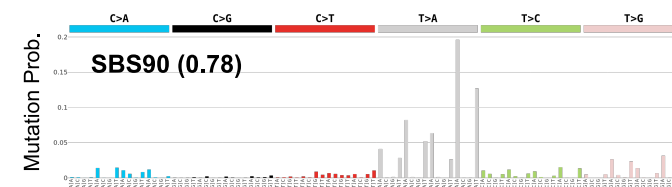
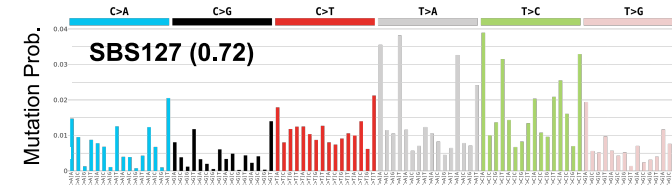
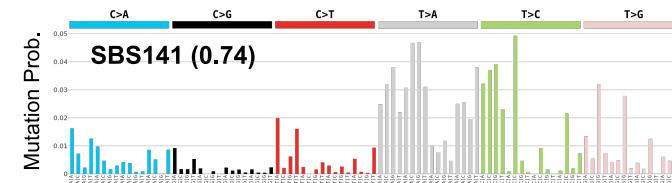
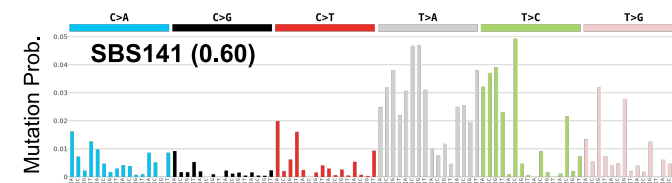
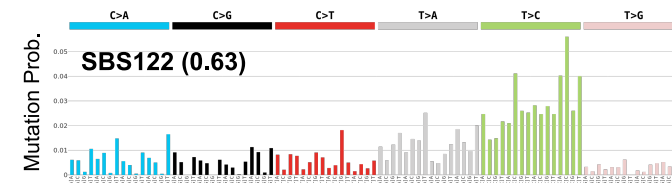
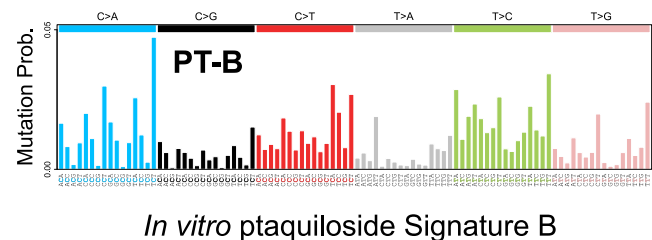
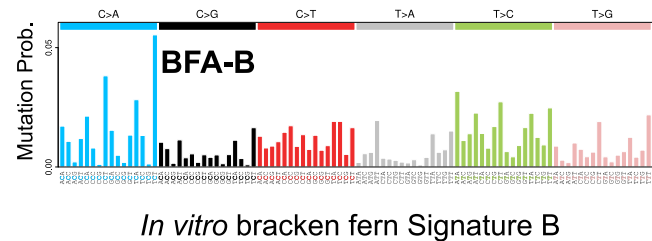
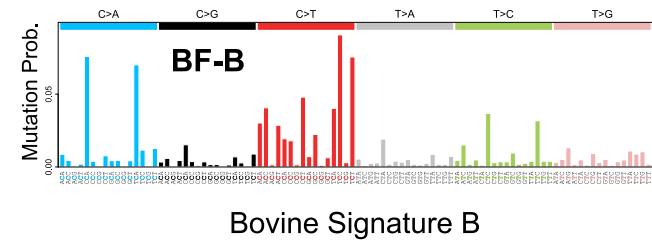
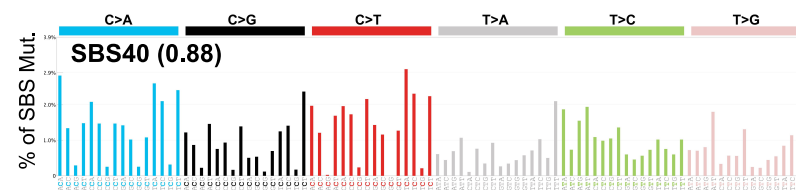
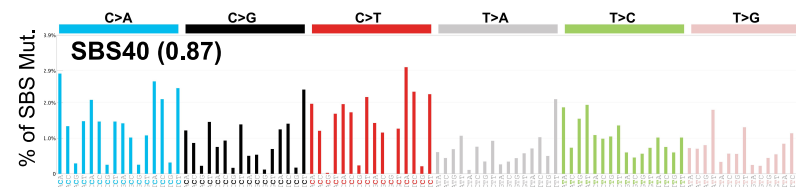
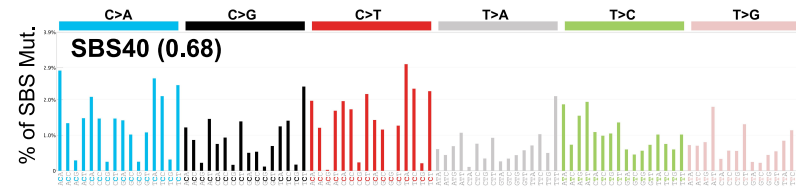
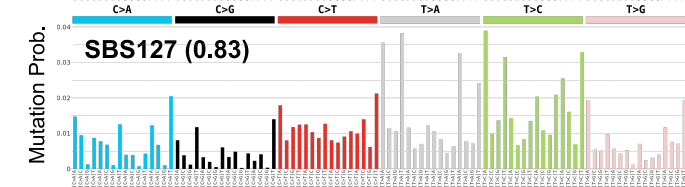
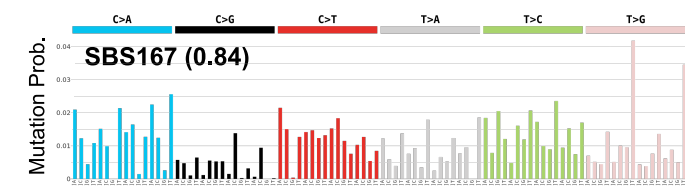
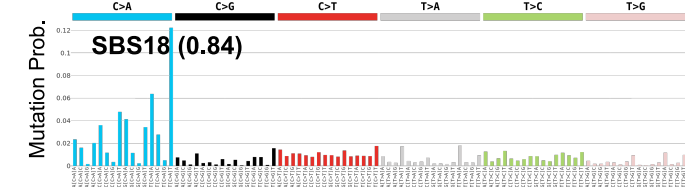
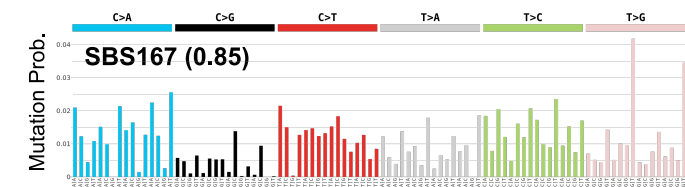
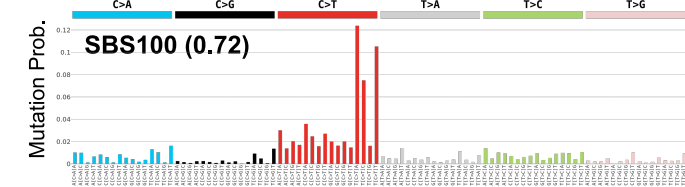
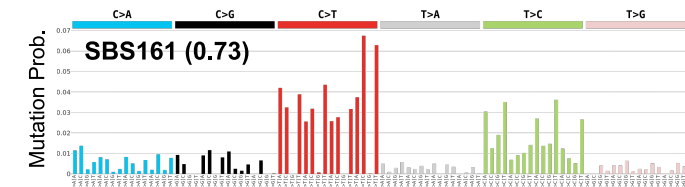


**a****Extracted signature**

Bovine Signature A

*In vitro* bracken fern Signature A*In vitro* ptaquiloside Signature A**COSMIC signature****Signal signature**

**b****Extracted signature****COSMIC signature****Signal signature**

**Fig. S5. Comparison of known mutational signatures with signatures found in bovine urinary bladder UC and *in vitro* in treated cell lines.** Shown are **a**, mutational signature A and **b**, signature B in bovine UC (top), KU-19-19 cells treated with bracken fern whole extract (middle) and KU-19-19 cells treated with purified ptaquiloside (lower) and signatures from COSMIC (middle column) and Signal (right column) with the highest cosine similarities (shown in parentheses). The signature of the second highest match is shown if the cosine similarity is within 0.03 of the highest match. The y-axis show the mutation probability or percent of total SBS mutations and the x-axis shows the mutation context.