**Supplementary:** Comparing tumor features with normal features

**A picture containing calendar

Description automatically generated**

**Figure 1. Comparing tumor features with normal features.** a) Venn diagram of top 40 tumor features and top 40 normal features derived from CAE; b) t-SNE plot of tumor samples using tumor features; c) t-SNE plot of normal samples using normal features; d) t-SNE plot of tumor samples using normal features; e) t-SNE plot of normal samples using tumor features.

Calendar

Description automatically generated

**Figure 2. Comparing tumor features with normal features.** a) Venn diagram of top 60 tumor features and top 60 normal features derived from CAE; b) t-SNE plot of tumor samples using tumor features; c) t-SNE plot of normal samples using normal features; d) t-SNE plot of tumor samples using normal features; e) t-SNE plot of normal samples using tumor features.

**Calendar

Description automatically generated with medium confidence**

**Figure 3. Comparing tumor features with normal features.** a) Venn diagram of top 80 tumor features and top 80 normal features derived from CAE; b) t-SNE plot of tumor samples using tumor features; c) t-SNE plot of normal samples using normal features; d) t-SNE plot of tumor samples using normal features; e) t-SNE plot of normal samples using tumor features.