

**Supplementary Fig. 2** Percentage of intrinsic disorder across all mucins determined using FoldIndex. The percentage of intrinsic disorder is determined relative to the total length of the protein. Among transmembrane and secreted mucins, the highest percentage of disorder was observed in MUC21 and MUC12, respectively. **a.** Bar graph displaying the percentage of intrinsic disorder across transmembrane (green) and secreted (red) mucins. **b.** Charge hydropathy chart showing verification of the in-house FoldIndex tool for MUC4. FoldIndex scores are based on sequence charge and net hydrophobicity, which predicts MUC4 to harbor little disorder