

**Fig. S1**



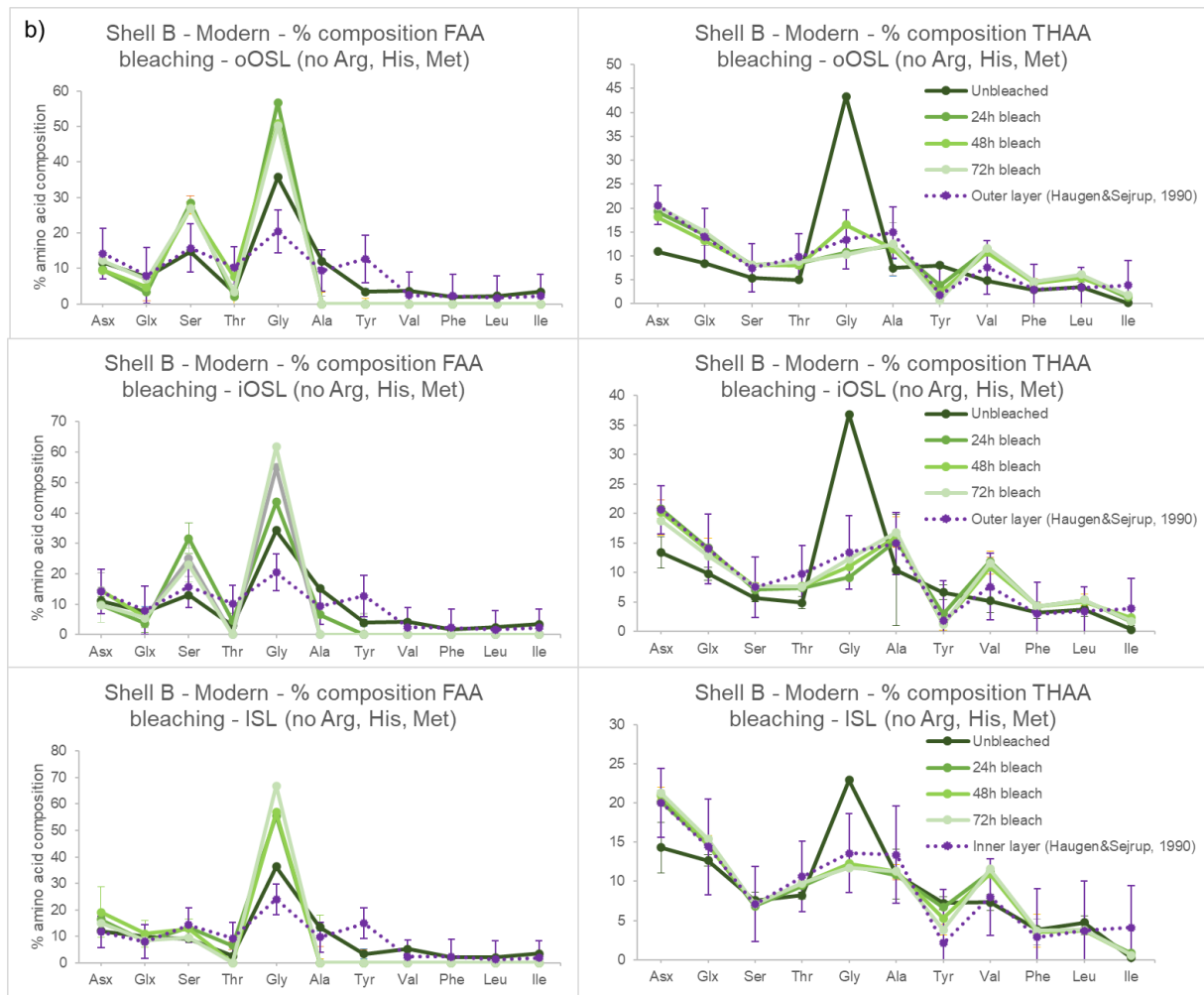


Fig. S1. (a) Amino acid composition of the three layers of modern *A. islandica* (shell B) unbleached and with 24-72 h bleaching. Error bars indicate one standard deviation based on three replicates. Percentage composition of the unbleached and 48 h bleached homogenised layers of *A. islandica* from Huang *et al.* (2023) are also plotted (orange and yellow dashed lines) over the amino acid composition of modern bleaching experiments for shell B from this study. (b) Percentage composition of the unbleached outer and inner layers of *A. islandica* from Haugen and Sejrup (1990) are also plotted (purple dashed line) over the amino acid composition of modern bleaching experiments from this study.