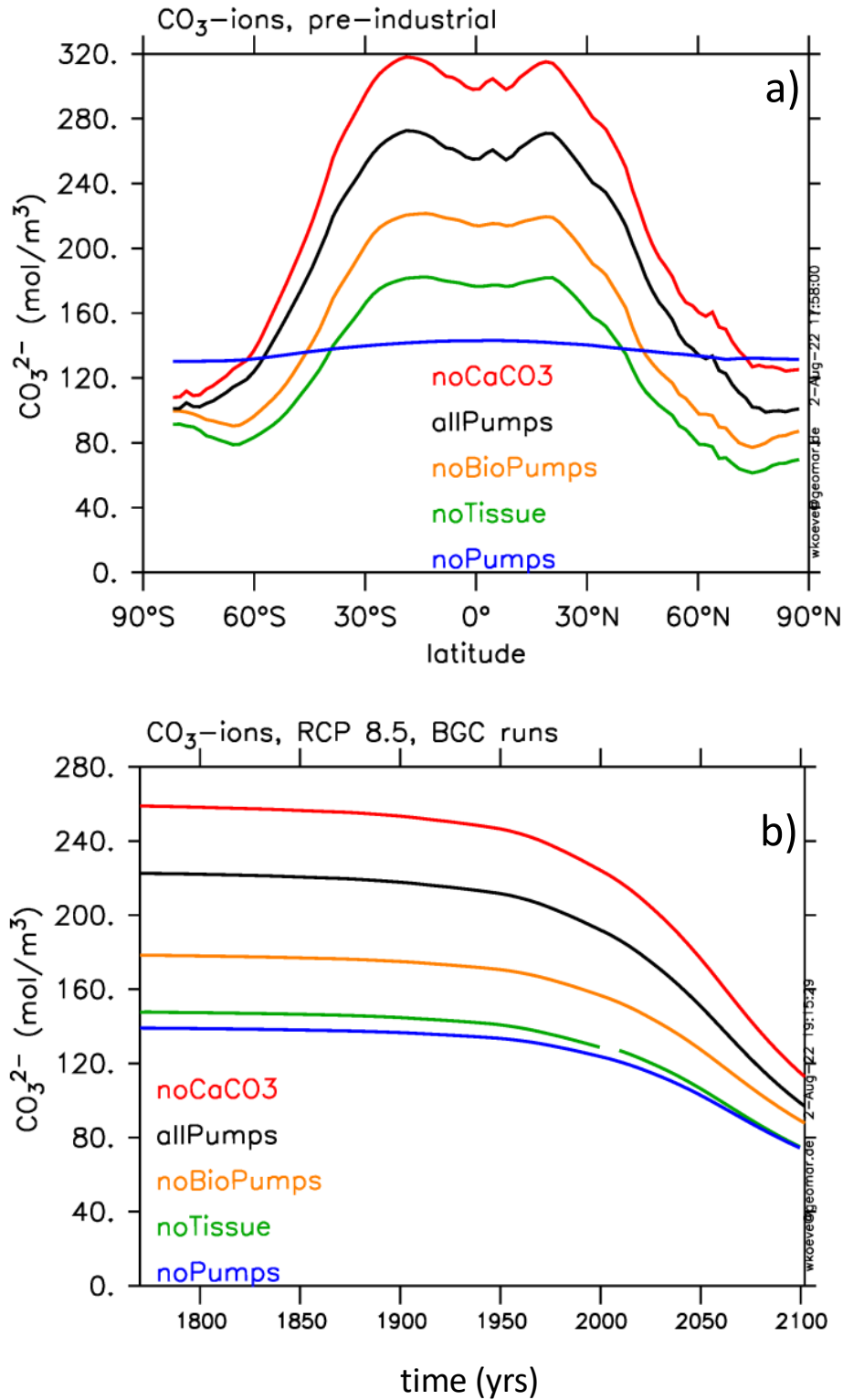


Fig. S1



**Fig. S1.** Surface ocean carbonate ion concentration in BGC experiments with different model variants. (a) Preindustrial zonally averaged surface carbonate ion concentration, (b) Global mean surface carbonate ion concentration between 1765 and 2100. Model variants (allPumps, black; noBioPumps, orange; noTissue, green; noCaCO<sub>3</sub>, red; noPumps, blue) are as indicated in the caption of Fig. S1 and described in more detail in Online Methods.