The ocean absorbs mass amounts of CO$_2$ from the atmosphere and stores it in deep sea sediments through a process known as the carbon cycle.

Human interference with this cycle has resulted in the over-absorption of carbon by the ocean.

This results in a decline of the ocean’s ability to function as a major carbon sink, resulting in a variety of negative climatic effects.

Ocean Alkalinity Enhancement is a potential method that could be utilized to mitigate acidification through the addition of alkaline to the ocean.

Three coral species were tested: *Acropora cervicornis*, *Sideraea sidera*, and *Pseudodiploria strigosa*.

Corals of each species were randomly distributed between the control (n=2) and treatment tanks (n=2).

Control tanks received untreated seawater and treatment tanks received seawater plus alkalinity in the form of magnesium hydroxide. Temperature was maintained at 30 °C.

After 30 days of exposure to control and treatment conditions measurements of photosynthesis, respiration and calcification rates were made.

At the end of 30 days temperature was ramped up 32 °C to simulate a heatwave event to see if alkalinity enhancement affected the response of the corals to heat stress and % mortality was recorded.

Treatment was not found to have any significant effect on the photosynthesis, respiration, growth or mortality rates of the three coral species tested.

This demonstrates that the magnesium hydroxide treatment may be a safe method of carbon dioxide removal and a means of mitigating the effects of ocean acidification.

The addition of magnesium hydroxide needs to be tested next within a natural setting, such as a coral reef, in order to ensure the safety of the introduction of alkalinity to the organisms and the ecosystem.

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