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Marine Biodiversity and Ecosystems

Rhythms of the Sea: Unveiling the Mysteries of Coral Spawning Mechanisms

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Time: 2024. 03. 18 Mon. 15:00

Venue: Auditorium, 1st Floor,
Interdisciplinary Research Building
跨領域科技研究大樓1樓演講廳

Host: Dr. Sen-Lin Tang 湯森林研究員

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Abstract

The reproductive dynamics of coral species are essential for maintaining and enhancing the resilience of coral reefs, among the planet's most biodiverse and economically vital ecosystems. My research over the past decade has focused on exploring the spawning mechanisms of corals, particularly the influence of lunar cycles and environmental factors such as moonlight and seawater temperature on these processes. Through comprehensive field observations and controlled experiments, we have gained significant insights into the variability of spawning periods across different coral taxa.

Our findings substantially advance the understanding of coral reproductive biology, revealing distinct reproductive strategies among corals, especially between *Acropora* and Merulinidae. We have identified the timing of moonrise as a critical trigger for the spawning of *Dipsastraea speciosa*, an insight likely applicable to a broader range of coral species. Moreover, our research indicates that increased seawater temperatures generally result in earlier spawning events, suggesting potential impacts of climate change on coral reproduction.

Future efforts will be directed toward deciphering the unique spawning synchronization mechanisms in *Acropora* corals, which may affect species differentiation and adaptability to environmental changes. Further research is planned to examine the spawning mechanism at various scales, including month and time, and to collaborate with other researchers to deepen our understanding at the chemical, molecular, and genetic levels.

In summary, my research substantially advances our knowledge of coral reproductive biology and forms a crucial basis for developing more effective conservation strategies to mitigate the impacts of global changes on these critical marine species.