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Abstract

Establishing Immortal Cell Lines in *Botryllus schlosseri*

Botryllus schlosseri are marine colonial tunicates with exceptional regenerative abilities. Deriving an immortal cell line from *B. schlosseri* cells holds significant promise as a resource for studying the cellular physiology of regeneration and growth capabilities. However, no cell lines from this organism have been established to date. Here, we attempted to grow cells from wild colonies of *B. schlosseri* in culture by exposing them to genotoxic stressors. Whole organisms were seeded in cell culture dishes, then exposed to nickel chloride, UV radiation, and TPA (12-O tetradecanoylphorbol-13-acetate). Two trails were run and these experiments aimed to induce DNA breakage, however in both trails of the experiments, data retrieval was hindered by contamination issues. Once the contamination issues are overcome, proceeding with this project would contribute to a deeper understanding of regenerative mechanisms and establish an immortal cell line, presenting significant potential for scientific advancements.