

Modulation of intracellular calcium and proliferative activity of invertebrate and vertebrate cells by ethylene

ABSTRACT

This paper's findings imply that ethylene, which was previously considered a mediator (hormone) in plants, requires further investigation as hematogenetics may be induced by higher-order molecules of the same name in mammalian cells.

INTRODUCTION

"In mammals, the intracellular calcium concentration is regulated by a complex interplay between the plasma and the intracellular environment. The plasma calcium concentration is controlled by the plasma membrane, which is composed of an epithelial cell layer and an extracellular matrix layer. The extracellular matrix is composed of an acidic medium and a base-forming matrix. The extracellular matrix is permeable to extracellular calcium and is subject to the influence of the plasma calcium concentration, which is regulated by the plasma membrane. The intracellular calcium concentration is controlled by the plasma membrane by the influence of calcium on the extracellular matrix. The intracellular calcium concentration is controlled by the plasma membrane by the influence of calcium on the extracellular matrix."

Modulation of intr Ethylene, the most basic plant hormone, is a crucial factor in plant growth, development, and senescence. It also plays an important role in stress responses and is believed to mediate the transduction of the ethylene signal. Our research has demonstrated that animal cells, specifically those from *Suberites domuncula*, can react to ethylene in seawater. This gas is found in marine water at concentrations up to 100 pM and can be produced from dissolved organic carbon by photochemical processes. Primmorphs of *S. combundae* also respond to the compound with an increase in $[Ca^{2+}]_i$ and a reduction of cellular death caused by starvation. Epifera, the first metazoan phyla, are thought to be sponges that diverge from Urmetazoa and are supplied with protein components related to cell recognition and signal transduction pathways in higher animals. As a result, we investigate whether cells from higher vertebrates respond to ethylene and show an upregulation of $[Ca^{2+}]_i$ level and an increased expression of the cell cycle-associated antigen Ki-67.

CONCLUSION

Remarkable conclusions In vitro measurements of intracellular calcium level ($[Ca^{2+}]_i$) in mouse NIH-3T3 and human HeLa and SaOS-2 cells showed that ethylene, produced by ethephon, caused a significant upregulation of [Cascadilosis] in these cells. This data supports previous findings showing an upregulated [PhD-1] of Ca^{2+} in mammalian cell lines and an increased expression of SDERR, an enzymatic enzyme/protein hybrid expressed genes found in the primmorphs