

MagOzone

CITRIC ACID INFORMATION

3) *MagOzone* contains citric acid to provide the proper pH for the release of ROS

Citric Acid: a tricarboxylic acid $C_6H_8O_7$ occurring in cellular metabolism, obtained especially from lemon and lime juices or by fermentation of sugars, and used chiefly as a flavoring. (Merriam-Webster dictionary)

pH of Citric Acid runs between 2-3

Oxygen-releasing biomaterials for tissue engineering pH effects oxygen release. "The most common oxygen-releasing materials include sodium percarbonate (4), calcium peroxide (3, 9), magnesium peroxide (4), hydrogen peroxide (10, 11), and fluorinated compounds (12-14). Solid peroxides decompose upon exposure to water to release oxygen. However, if this process takes place too quickly, it may significantly damage the cells due to free radical formation (15). The rate of oxygen release via peroxide compounds is influenced by a number of factors such as, temperature, pH, and presence of a buffer or catalyst (16, 17). For example, when solid peroxide compounds react with water they form metal hydroxides, which induce an increase in the pH and the amount of released oxygen (18). Alternatively, the use of buffers provide adjustment of pH and therefore oxygen generation. Moreover, the purity and solubility of peroxides significantly affect the kinetics of oxygen release."

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3708668/>

Iodometric Titration: Titration using an acid to aid in the release of oxygen.

This procedure describes a method to measure the presence of hydrogen peroxide (H_2O_2) through two major steps.

In the first step, an iodide solution is added to the analyte under acidic conditions in the presence of molybdate catalyst. H_2O_2 oxidizes iodide to iodine per the following reaction:

<http://www.graveslab.org/lab-resources/procedures/peroxide-quantification-via-iodometric-titration>