Analysis of the Anthocyanin of Vaccinium myrtillus as an Effective Anti-Inflammatory in Human Primary Cells of Asthmatic Bronchial Smooth Muscle

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Asthma is a chronic disease characterized by inflammation of the airways that causes prolonged difficulty in breathing (Chardón D., 2015). In 2010, approximately 25.7 million people were reported with current asthma. In addition, 10 deaths per million were in 2016 (National Center for Environmental Health, Division of Environmental Risks and Effects on Health, 2018). The results of this report established asthma as a priority condition in Puerto Rico, therefore it is necessary to improve the quality of life of those who suffer from it. For these reasons, we want to find an effective anti-inflammatory treatment in human primary bronchial asthmatic smooth muscle cells. For the treatment of this disease, it the use, of the anthocyanin of Vaccinium myrtillus, will be considered since it has pharmacological actions demonstrated by a study carried out in 2001 by Thorne Research, Inc. If the anthocyanin present in Vaccinium myrtillus reduces the release of intracellular calcium in smooth muscle bronchial cells, then it will reduce the contraction of the cell, so it will be an effective anti-inflammatory in human primary bronchial asthmatic smooth muscle cells. Then analysis of changes in intracellular calcium levels showed that there was a decrease in intracellular calcium levels of cells with the agonist stimulus, after the application of anthocyanin to 83.0μM, with a significant difference in $p = 0.05$. Therefore, Vaccinium myrtillus had an effect reducing the contraction of the cells which proved to be an effective anti-inflammatory in human primary cells of asthmatic bronchial smooth muscle; accepting and supporting the established hypothesis of this investigation.

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