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CYTOCHROME C; A POTENTIAL EARLY BIOMARKER OF DIABETIC RETINOPATHY

Ileana G. Villarreal
The University of Texas Rio Grande Valley, ileana.villarreal01@utrgv.edu

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Abstract

Diabetic retinopathy is an ocular disease which appears in patients who experience progression of diabetes mellitus over a continuous period of time. Oftentimes, patients remain undiagnosed through the first stages of diabetic retinopathy due to the fact that there is not a specific way to determine when a patient develops the disease. Ophthalmologists and other eye specialists diagnose a patient with diabetic retinopathy once the patient begins to show progressed symptoms of the disease. Previous experiments have been performed to increase our knowledge of diabetic retinopathy and early biomarkers of the disease. Several studies have determined the effects of diabetic retinopathy and apoptosis with cytochrome c presence using bovine retinal cells and rat models. The purpose of this experiment is to understand, analyze and quantify the effects of diabetic conditions on cytochrome c presence in the mitochondria of human retinal pericyte cells by using TUNEL, heme staining and Western Blot methods. In doing so, I will determine whether cytochrome c could serve as a potential biomarker in the early detection of diabetic retinopathy.