

## IN VITRO EVALUATION OF KNOWN DRUG COMBINATIONS AND EFFECTS ON BIOLOGICAL SYSTEM

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To examine the positive/negative modulations of known drugs profile was observed along with changes in certain relevant hematological parameters, Namely Erythrocyte Sedimentation Rate, Packed Cell Volume, Hemoglobin, Calcium content and Oxidative/Reduced state of Cytochrome C levels with individual/ combination of single *invitro* drug administrations such as Caffeine, Diphenhydramine and Fluoxetine.

### INTRODUCTION

The systemic effects of a drug that are related to the overall level of the medication in the bloodstream. Preclinical drug safety evaluation, at the time mainly relies on complex clinical pathological analysis, these traditional approaches have proven to be highly successful, but may fail to detect prodromal stages of toxicity. We hypothesized that a study involving doses and time points for a small number of defined compounds will allow uncommon pharmacological responses are associated as toxicity to be defined. A wide variety of bioenergetic processes involve C-type Cytochromes as electron carriers. They are characterized by the presence of a heme, covalently bound to the protein through thioether linkages. A large body of data shows that the oxidation and reduction of the heme iron atom induces remarkable changes in physicochemical properties of these proteins. In particular, the reduced cytochrome is more resistant to thermal denaturation, extremes of pH, proteolytic digestion, hydrogen-deuterium exchange and denaturation agents such as alcohol, urea or guanidinium, the oxidized form being more flexible than the reduced form.

### MATERIAL AND METHODS

#### Biochemical assays

##### 1. Blood analysis

Test drugs (Complimentary samples) were suspended in saline and dosed as 100-800 µg/ml in individual test tubes accordingly to study hematological parameters were determined by usual standardized laboratory methods as follow.

##### Erythrocyte Sedimentation Rate (Wintrobe's Method)

Fill the wintrobe tube up to the top 0 mark with well mixed blood using Pasteur pipette. Allow it to stand vertically in a wintrobe's stand for 1 hr. Read the level of red cells after 1 hrs. (as ESR/1 hr).

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