EFFECT OF *Achyrocline satureioides* (MARCELA) INFUSION ON THE MODULATION OF ROTENONE-INDUCED TOXICITY IN SH-SY5Y CELLS

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INTRODUCTION

***Achyrocline satureioides* (Lam.) DC (AS)**

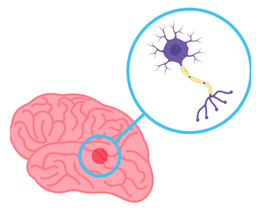
Traditional medicinal plant

- Gastrointestinal discomfort
- Natural sedative

Infusion of Marcela tea

- Improved sleep quality
- reduced anxiety

Inflorescences in pillows

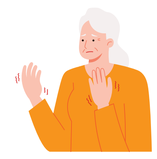


SH-SY5Y

Rotenone

- **Pesticide**
- **Mitochondrial Complex I inhibitor**
- **Oxidative damage**

Neurodegenerative diseases



Mental disorders

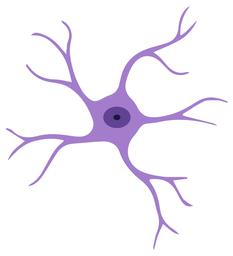
OBJECTIVE

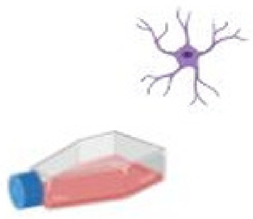
To evaluate the effects of AS infusion on oxidative stress markers and genotoxicity in SH-SY5Y cells exposed to rotenone.

METHODOLOGY

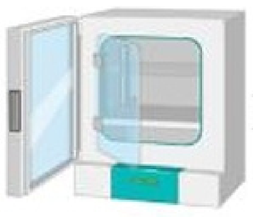
Cell cultivation

SH-SY5Y





DMEM F12 + 15% SBF + 1% ATB



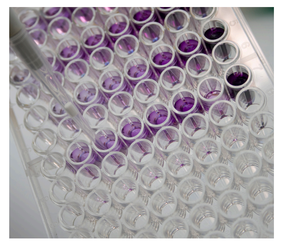
5% CO_2 37ºC

Rotenone

Standardized conditions and exposed Concentration (30 nM).

24 hours

Infusion of AS



Concentrations of AS infusion (5, 100, and 300 µL/mL) for **72 hours.**

Preparation of Marcela tea (infusion)

Steep 1 g of the flower in 150 mL of water at 80°C for 15 minutes.

Brazilian Pharmacopoeia

Lipid peroxidation was assessed using the **TBARS** assay

- **Thiobarbituric acid (TBA)**
- **Malondialdehyde (MDA)**

Protein carbonylation was quantified by spectrophotometry

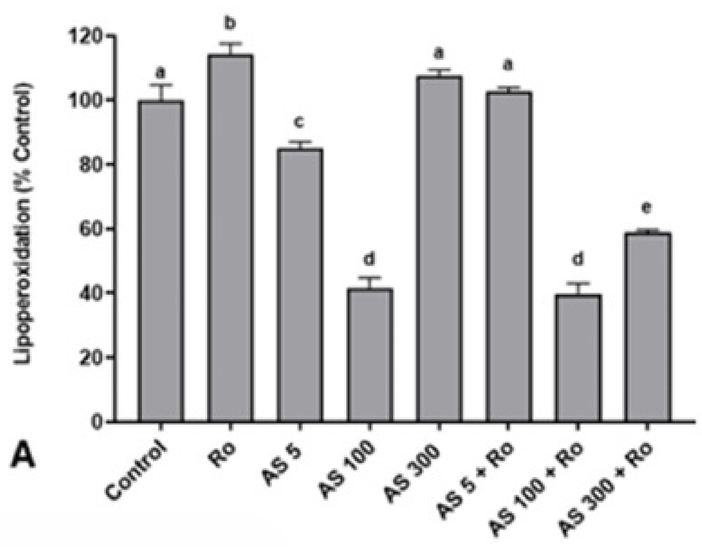
- **2,4-dinitrofenil-hidrazina (DNPH)**

Genotoxicity was evaluated by **micronucleus (MN)** detection using **DAPI** staining (100 µg/mL)

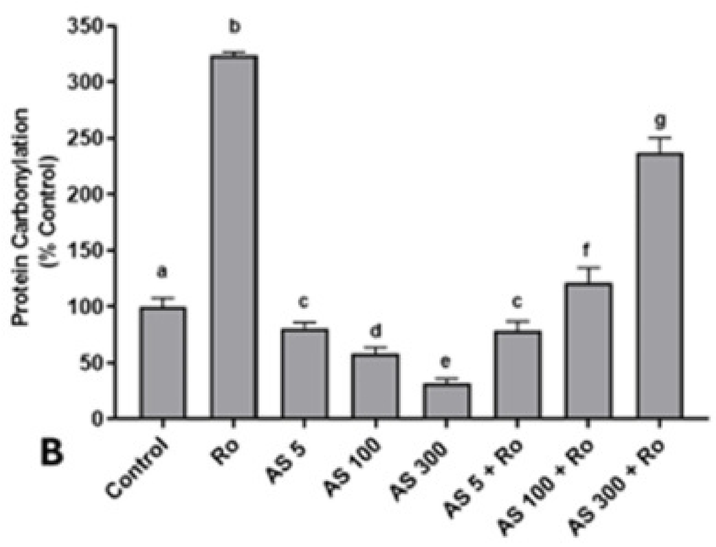
- **Adenine-thymine of DNA**

Data analysis was performed using GraphPad Prism 8.0.

RESULTS AND CONCLUSION



Rotenone: ↑ **AS(5,100 e 300 µg/mL):** ↓



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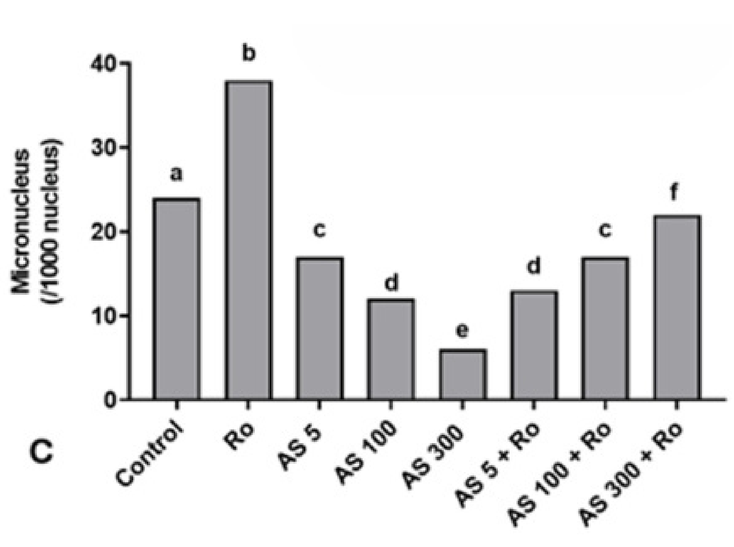

Rotenone: ↑ **AS(5,100 e 300 µg/mL):** ↓

The infusion of Achyrocline satureioides demonstrated a cytoprotective effect against oxidative and genotoxic damage induced by rotenone in human neural cells. These findings support its potential as an adjuvant phytotherapeutic agent for cellular toxicity associated with oxidative stress. Further studies are required to elucidate its molecular mechanisms and to establish safety and efficacy profiles.