III SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS
I ENCONTRO IBERO-AMERICANO DE PLANTAS MEDICINAIS DR. MAHABIR GUPTA
I CONGRESSO LUSO-BRASILEIRO DE CIÊNCIAS E TECNOLOGIAS EM SAÚDE

Área: FMG 10

IN VITRO ANTI-SARS-CoV-2 AND ANTIOXIDANT ACTIVITY OF A NEW COMPOUND ISOLATED FROM *Agrimonia eupatoria* L (Rosaceae)

Omar Estrada[1,2]*, Hector Rangel[1], Joao Victor D. Gomes[2]. Pérola O. Magalhães [2], Yris M. Fonseca-Bazzo[2,] Dâmaris Silverira[2]

[1]Venezuelan Institute of Scientific Research, Caracas, Venezuela. [2]Graduation Program of Pharmaceutical Sciences, School of Health Sciences, Campus Darcy Ribeiro, University of Brasília, Brasília, Brazil. *pittieri@gmail.com

INTRODUCTION

Medicinal plants are a potential source for the development of new drugs against COVID19. The purpose of this study was to evaluate the antiviral properties of a hydroalcoholic extract of *Agrimonia eupatoria* L. against the SARS-COV-2 virus and to identify its active components through a bioguided study, as well as to evaluate its antioxidant potential.

MATERIAL AND METHODS

Bioguided study on the *A. eupatoria* extract was carried out by obtaining fractions with solubility differences (Estrada 2012). Extract, fractions, compounds, and virus were added to the cells and incubated for 1 hour at 37°C; the substances to be evaluated were added at increasing concentrations and incubated for 48 hours. Vero E6 cell infection by SARCoV2 was evaluated by light microscopy and RT PCR. The antioxidant effect of the main active compound was evaluated through DPPH radical scavenging activity (Kelman 2012) and FRAP assay (Les 2015). The main active compound was identified using ^{1}H and ^{13}C NMR spectroscopy.

RESULTS

The less polar fraction from the ethanolic extract was fractionated by column chromatography (CC) Sephadex LH20. Five subfractions were obtained and named (I to V). Fraction IV presented the better antiviral activity, from which a compound was purified by RP18 CC. The analysis of NMR spectra indicated that this active compound, named by us as AEE2IV, is a disalicylide. To the best of our knowledge, this is the first report of this compound in the literature. The cytotoxicity of AEE2IV was evaluated on Vero E6 (0 to 300 µM), AEE2IV was not toxic at the highest concentration evaluated. Then, the inhibitory effect of AEE2IV on the proliferation of the SARS-CoV-2 virus was evaluated. AEE2IV demonstrated a dose-dependent antiviral effect, IC_{50}= 1.8 µM. AEE2IV showed antioxidant activity in both assays. In DPPH assay, showed an EC_{50} similar to ascorbic acid (26,8 and 30,6 µM, respectively). However, in the FRAP assay, the reduction iron power of AEE2IV was higher than the same standard (33.1 and 84,6 µM respectively).

CONCLUSIONS

AEE1IV showed promising *in vitro* anti SARCoV2 and antioxidant effects which suggest its potential beneficial use to avoid proinflammatory consequences.

ACKNOWLEDGMENTS

We thank Dr. Luiz Benedito (UnB) for the helpful cooperation in the NMR experiments.

REFERENCES

Estrada et al.2012, Biochem. Syst. Ecol.
Kelman et al.2012, Mar. Drugs.
Les et al. 2015, Food Funct.