Antiviral evaluation of compounds against SARS-CoV-2

Molecule tested: N-acétyl L-cystéine (NAC)

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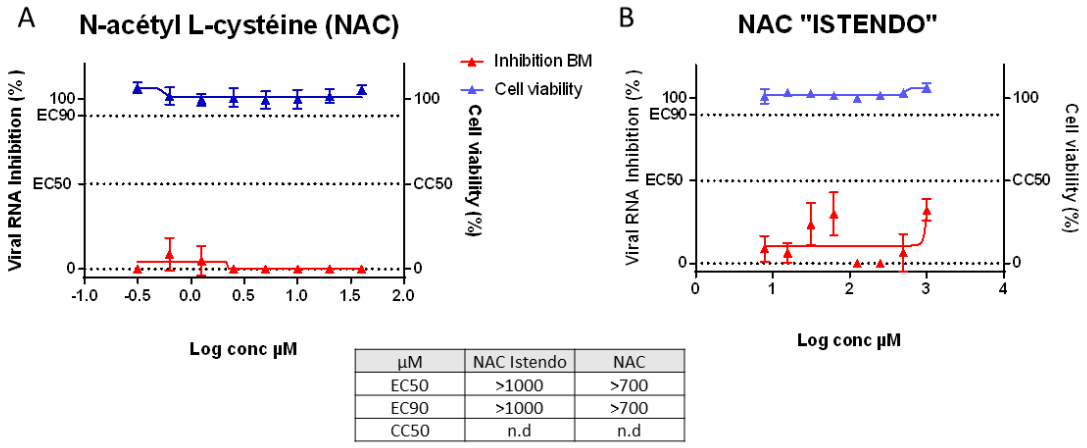
Introduction

In response to the recent emergence of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of COVID-19, the Unité des Virus Émergents performed preclinical evaluation of drug candidates against SARS-COV-2. **This interim report has not been peer-reviewed.** The data of this report are available upon request.

The molecule tested here is the N-acétyl L-cystéine (NAC) a non-essential amino acid that is primary used as a treatment against paracetamol intoxication (ISTENDO). This non-essential amino acid is also used as dietary supplement.

In vitro evaluation of efficacy of NAC

Based on a possible inhibition of the virus entry, the antiviral activity of NAC was evaluated from700 µM to 5.4 µM for the compound alone (Fig1A) and from 1000µM to 7.8µM for the Istendo formulation (Fig1B) , both in Vero-E6 cells using a viral RNA yield reduction assay as previously described (Touret et al., 2019, Touret et al., 2020). In these conditions, we did not measured any inhibition at 700µM nor 1000µM. (**Figure 1**).



µM	NAC Istendo	NAC
EC50	>1000	>700
EC90	>1000	>700
CC50	n.d	n.d

Figure 1: In vitro evaluation of N-acétyl L-cystéine(NAC) in VeroE6 cells. A: Dose response and cytotoxicity evalutation of NAC. B Dose response and cytotoxicity evalutation of the ISTENDO formulation. All assay were performed as previously described (Touret et al., 2020).

Conclusion

Results obtained in VeroE6 suggest that this compound does not inhibit SARS-CoV-2 replication *in vitro.*

References

TOURET, F., BARONTI, C., GOETHALS, O., VAN LOOCK, M., DE LAMBALLERIE, X. & QUERAT, G. 2019. Phylogenetically based establishment of a dengue virus panel, representing all available genotypes, as a tool in dengue drug discovery. *Antiviral Res,* 168**,** 109-113.

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