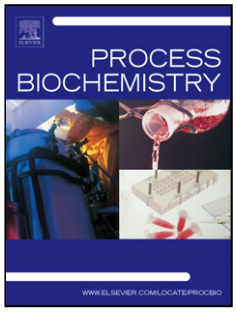

Title: Gene-silencing suppressors for high-level production of the HIV-1 entry inhibitor griffithsin in *Nicotiana benthamiana*

Authors: Peyman Habibi, Carlos Ricardo Soccol, Barry R. O'Keefe, Lauren R.H. Krumpe, Jennifer Wilson, Leonardo Lima Pepino de Macedo, Muhammad Faheem, Vanessa Olinto Dos Santos, Guilherme Souza Prado, Marco Antonio Botelho, Severine Lacombe, Maria Fatima Grossi-de-Sa

PII: S1359-5113(18)30174-0
DOI: https://doi.org/10.1016/j.procbio.2018.04.006
Reference: PRBI 11322

To appear in: *Process Biochemistry*

Received date: 1-2-2018
Revised date: 21-3-2018
Accepted date: 6-4-2018

Please cite this article as: Habibi Peyman, Soccol Carlos Ricardo, O'Keefe Barry R, Krumpe Lauren RH, Wilson Jennifer, de Macedo Leonardo Lima Pepino, Faheem Muhammad, Dos Santos Vanessa Olinto, Prado Guilherme Souza, Botelho Marco Antonio, Lacombe Severine, Grossi-de-Sa Maria Fatima.Gene-silencing suppressors for high-level production of the HIV-1 entry inhibitor griffithsin in Nicotiana benthamiana.*Process Biochemistry* https://doi.org/10.1016/j.procbio.2018.04.006

Gene-silencing suppressors for high-level production of the HIV-1 entry inhibitor griffithsin in *Nicotiana benthamiana*

Peyman Habibi[1,2, §], Carlos Ricardo Soccol[1], Barry R. O'Keefe[3,4], Lauren R.H. Krumpe[5], Jennifer Wilson[3], Leonardo Lima Pepino de Macedo[2], Muhammad Faheem[2,] Vanessa Olinto Dos Santos[2] , Guilherme Souza Prado[2], Marco Antonio Botelho[7] ,Severine Lacombe[8] , Maria Fatima Grossi-de- Sa[2,6,7, §]

[1] Department of Bioprocess Engineering and Biotechnology, Federal University of Paraná, Curitiba-PR, Brazil
[2] Embrapa Genetic Resources and Biotechnology, PqEB-Final W5 Norte - CP 02372, Brasília-DF, Brazil
[3] Molecular Targets Program, Center for Cancer Research, National Cancer Institute at Frederick, Frederick, Maryland, USA
[4] Natural Products Branch, Developmental Therapeutics Program, Division of Cancer Treatment and Diagnosis, National Cancer Institute, Frederick, Maryland, USA
[5] Basic Science Program, Leidos Biomedical Research, Inc., Molecular Targets Laboratory, Frederick National Laboratory for Cancer Research, Frederick, MD, USA
[6] Catholic University of Brasília, Brasília- DF, Brazil
[7] Post Graduation Program in Biotechnology, University Potiguar, Natal, RN, Brazil
[8] Institut de Recherche pour le Développement, Montpellier, France

Corresponding Authors[§]:

Peyman habibi (peymanhabibi89@gmail.com)

Maria Fatima Grossi-de- Sa (fatima.grossi@embrapa.br)

Highlights

HIV inhibitor expressed via three gene suppressors

The salt treatment increased the amount of Griffithsin

Anti-Hiv activity was confirmed via in vitro

Graphical abstract

RNA silencing suppression with combination of three gene slinging suppressors as well as 450 mM NaCl increased the production of Griffithsin.