

Supplementary information

Development of New Resolvin D1 Analogues: Acellular and Computational Approaches to Study Their Antioxidant Activities

Zahra Kariminezhad¹, Mahdi Rahimi¹, Julio Fernandes¹, René Maltais², Jean-Yves Sancéau², Donald Poirier^{2,3}, Hassan Fahmi⁴, Mohamed Benderdour^{1*}

¹ Orthopedic Research Laboratory, Hôpital du Sacré-Cœur de Montréal, Université de Montréal, Montréal, QC, Canada.

² Department of Molecular Medicine, Faculty of Medicine, Université Laval, Québec, QC, Canada.

³ Organic Synthesis Service, Medicinal Chemistry Platform, CHU de Québec Research Center-Université Laval, Québec, QC, Canada.

⁴ Osteoarthritis Research Unit, University of Montreal Hospital Research Center (CRCHUM), Montreal, QC, Canada

* Correspondance email: mohamed.benderdour@umontreal.ca; Tel.: (514) 338- 2222 #3279

RvD1 analogue 1:

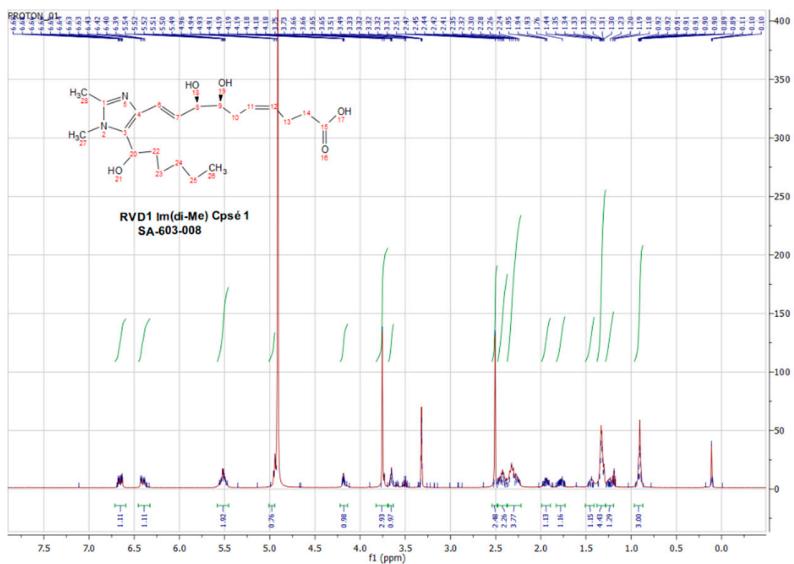


Figure S1: ^1H NMR spectrum analogue 1

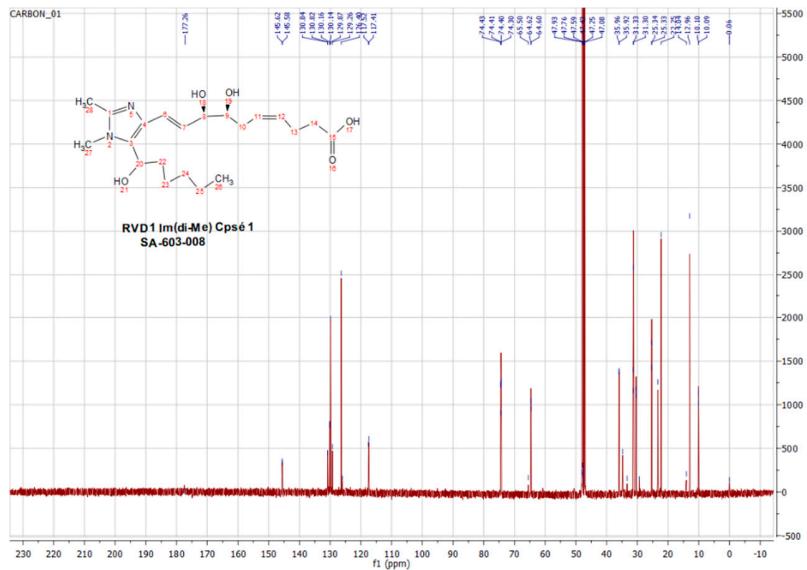


Figure S2: ^{13}C NMR spectrum analogue 1

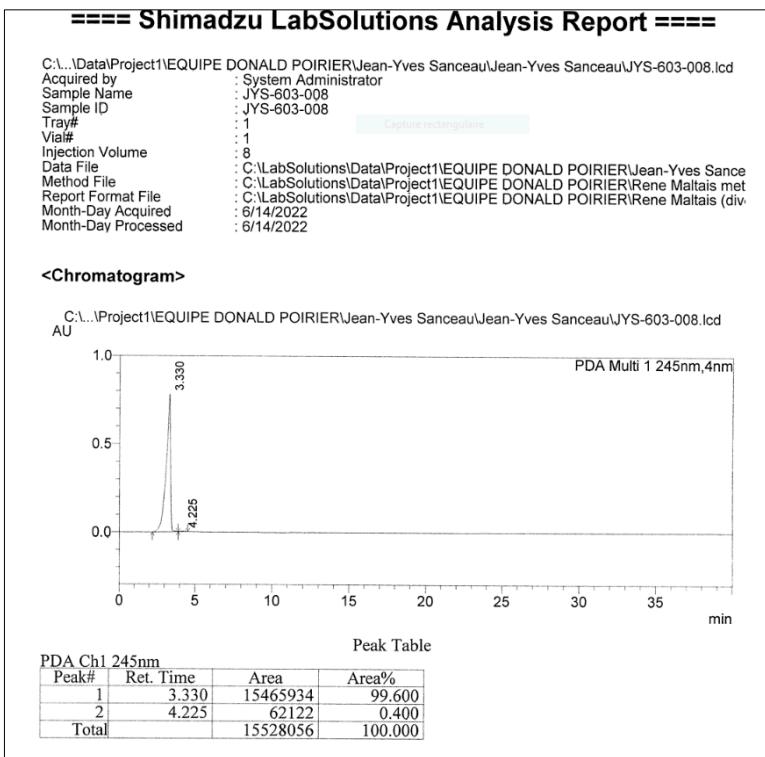


Figure S3: LCMS chromatogram analogue 1

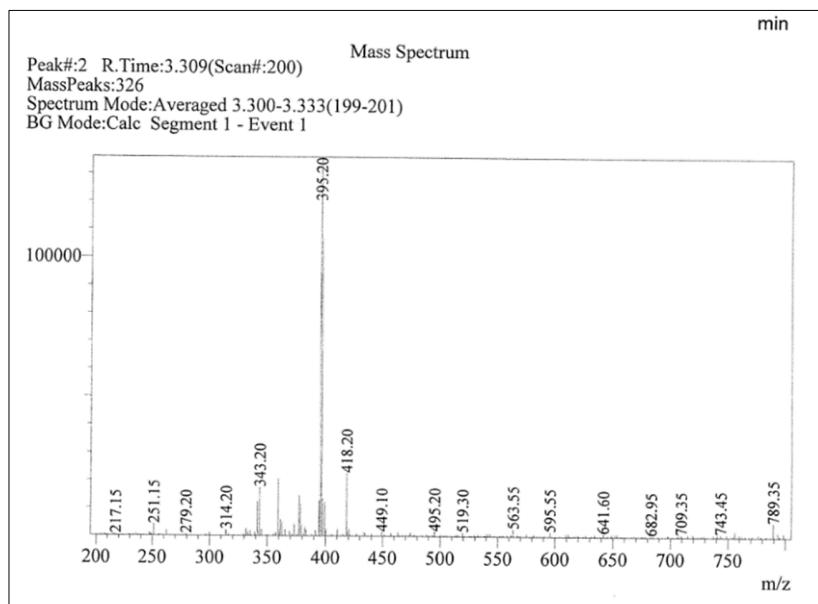


Figure S4: Mass spectrum analogue 1

RvD1 analogue 2:

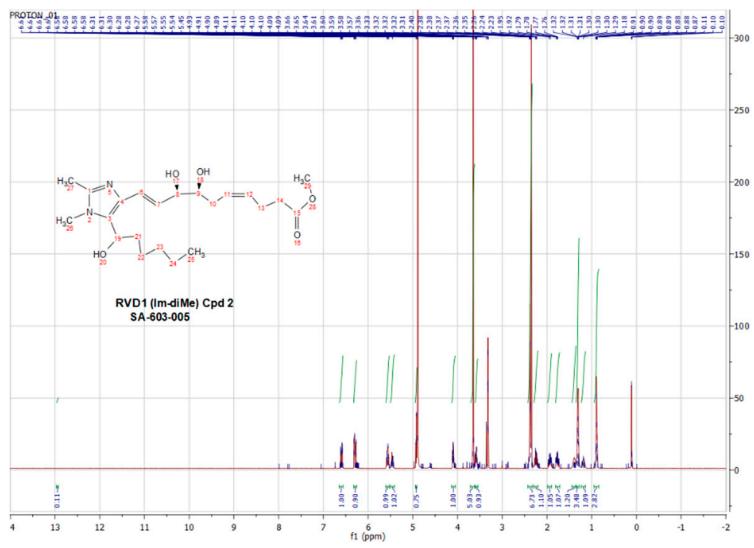


Figure S5: ^1H NMR spectrum analogue 2

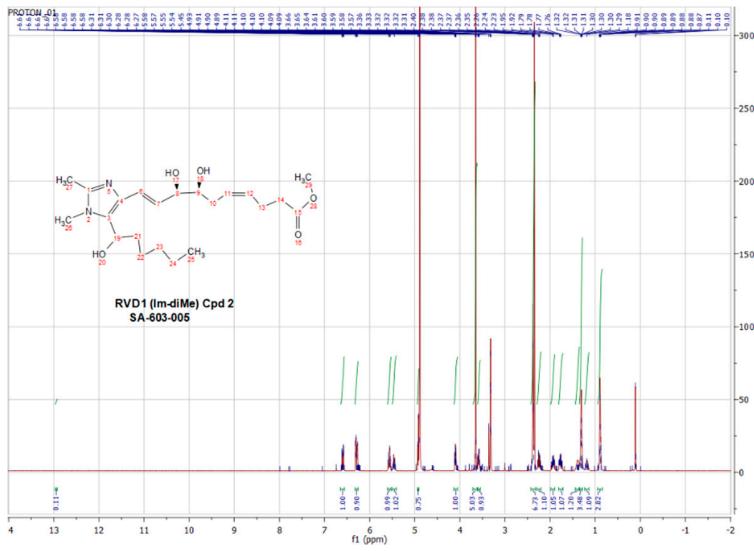


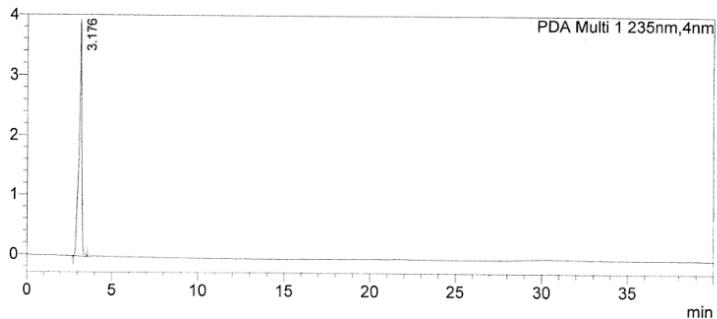
Figure S6: ^{13}C NMR spectrum analogue 2

==== Shimadzu LabSolutions Analysis Report ====

C:\..\Data\Project1\EQUIPE DONALD POIRIER\Jean-Yves Sanceau\Jean-Yves Sanceau\JYS-603-005.lcd
Acquired by : System Administrator
Sample Name : JYS-603-005
Sample ID : JYS-603-005
Tray# : 1
Vial# : 1
Injection Volume : 7
Data File : C:\LabSolutions\...\Project1\EQUIPE DONALD POIRIER\Jean-Yves Sanceau\JYS-603-005.lcd
Method File : C:\LabSolutions\...\Project1\EQUIPE DONALD POIRIER\Rene Maltais met
Report Format File : C:\LabSolutions\...\Project1\EQUIPE DONALD POIRIER\Rene Maltais (div)
Month-Day Acquired : 6/13/2022
Month-Day Processed : 6/13/2022

<Chromatogram>

C:\..\Data\Project1\EQUIPE DONALD POIRIER\Jean-Yves Sanceau\Jean-Yves Sanceau\JYS-603-005.lcd
AU



Peak Table

Peak#	Ret. Time	Area	Area%
1	3.176	41400132	100.000
Total		41400132	100.000

Figure S7: LCMS chromatogram analogue 2

Mass Spectrum
Peak#:1 R.Time:3.294(Scan#:199)
MassPeaks:460

Spectrum Mode:Averaged 3.283-3.317(198-200)
BG Mode:Calc Segment 1 - Event 1

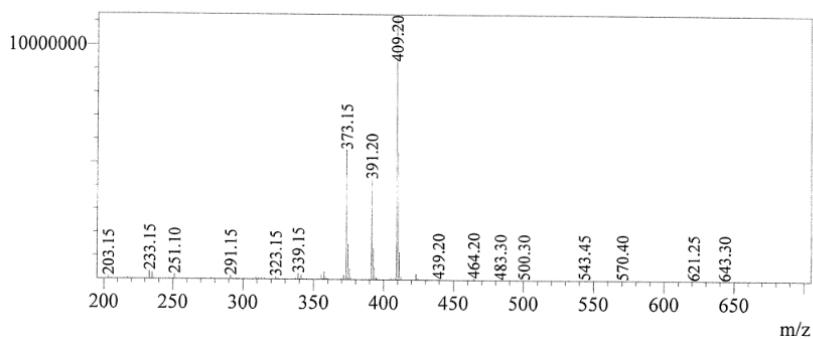


Figure S8: Mass spectrum analogue 2

Mulliken Charge Distribution:

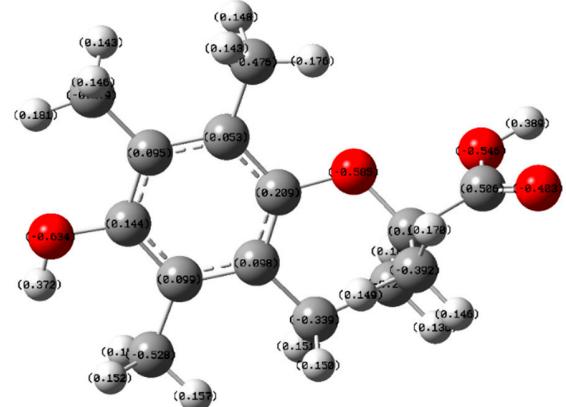


Figure S9: Mulliken charge distribution for Trolox

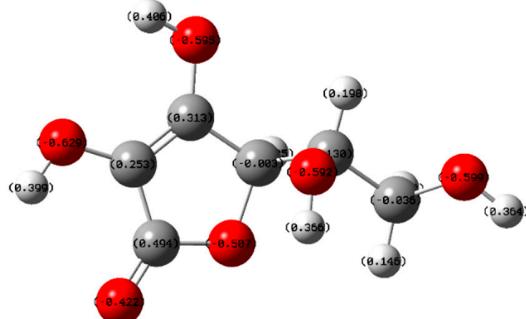


Figure S10: Mulliken charge distribution for Ascorbic Acid

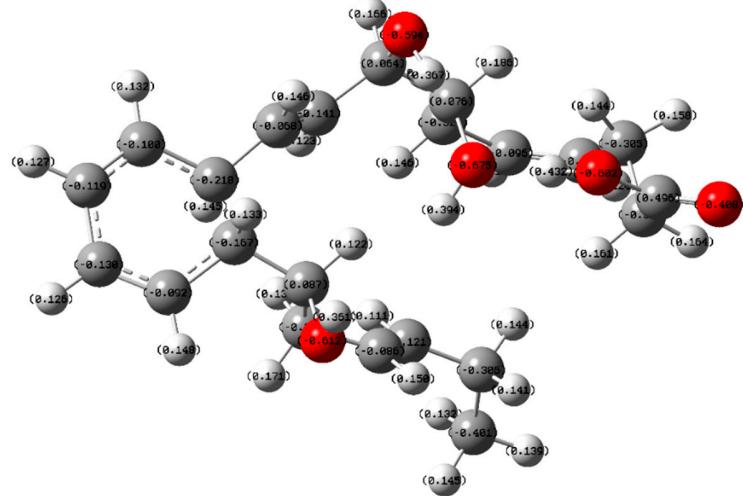


Figure S11: Mulliken charge distribution for ResolvinD1

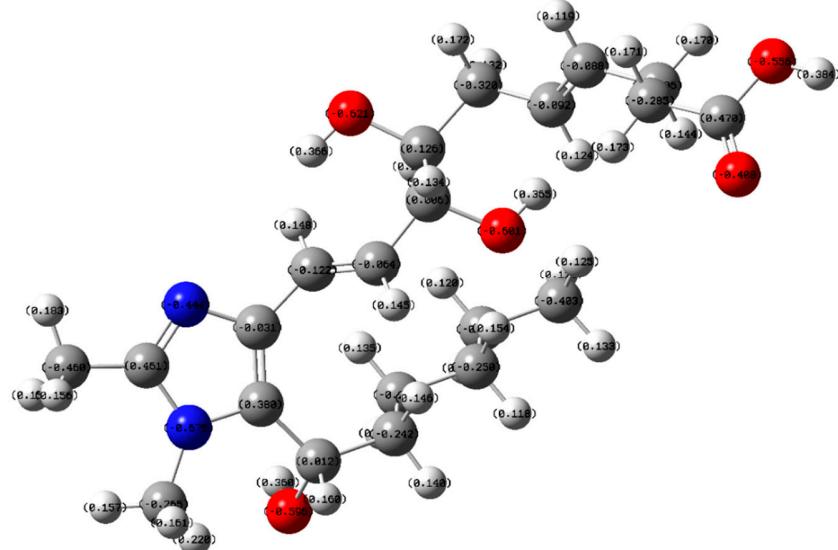


Figure S12: Mulliken charge distribution for analogue 1

