



- 1 Supplementary Informations
- 2 Novel structural insight into inhibitors of Heme
- <sup>3</sup> Oxygenase-1 (HO-1) by new imidazole-based
- 4 compounds: biochemical and in vitro anticancer
- 5 activity evaluation

6	Khaled F. Greish <sup>1</sup> , Loredana Salerno <sup>2</sup> ,*, Reem Al Zahrani <sup>1</sup> , Emanuele Amata <sup>2</sup> , Maria N. Modica
7	<sup>2</sup> , Giuseppe Romeo <sup>2</sup> , Agostino Marrazzo <sup>2</sup> , Orazio Prezzavento <sup>2</sup> , Valeria Sorrenti <sup>2</sup> , Antonio

- 8 Rescifina<sup>2</sup>, Giuseppe Floresta<sup>2,3,\*</sup>, Sebastiano Intagliata<sup>4</sup>, Valeria Pittalà<sup>2</sup>
- 9 <sup>1</sup> Department of Molecular Medicine, College of Medicine and Medical Sciences, Princess Al-Jawhara Centre
  10 for Molecular Medicine, Arabian Gulf University, Manama, Kingdom of Bahrain
- 11 <sup>2</sup> Department of Drug Sciences, University of Catania, V.le A. Doria 6, 95125 Catania, Italy
- <sup>12</sup> <sup>3</sup> Department of Chemical Sciences, University of Catania, V.le A. Doria, 95125 Catania, Italy
- <sup>4</sup> Department of Medicinal Chemistry, College of Pharmacy, University of Florida, Gainesville, FL, USA
- 14 \* Correspondence: <u>giuseppe.floresta@unict.it</u> (G.F.) and <u>l.salerno@unict.it</u> (L.S.); Tel.: +39-095-738-4266
- 15 Received: date; Accepted: date; Published: date
- 16

## 17 Table of contents

18	Calibration curve of the free compound <b>1</b> at 272 nm (Figure S1)	S2
19	Size distribution of SMA-1 (Figure S2)	S2
20	2D interaction and docked pose of compound 2 (Figure S3)	S3
21	2D interaction and docked pose of compound 3 (Figure S4)	S3
22	2D interaction and docked pose of compound 4 (Figure S5)	S4
23	NMR spectra of compounds <b>2–4</b>	<b>S</b> 5



Figure S1. Calibration curve of the free compound 1 at 272 nm.

## 27



Figure S2. Size distribution of SMA-1 (the micelles are identified in the picture as VP12-129).







Figure S3. 2D interaction and docked pose of compound 2.









33

Figure S4. 2D interaction and docked pose of compound 3.



37 **Figure S5.** 2D interaction and docked pose of compound 4.



<sup>1</sup>H NMR of compound 2



<sup>13</sup>C NMR of compound 2



- 5000

4500

- 4000

- 3500

- 3000

- 2500

- 2000

- 1500

- 1000

- 500

0

- 1700

-0.00

00.00



46



47 48



190

180 170 160 150 140

00

130 120 110 100 90 f1 (ppm)

70 60 50 40 30 20 10 0 -10



## <sup>1</sup>H NMR of compound 4





 $\ensuremath{\mathbb{C}}$  2018 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).