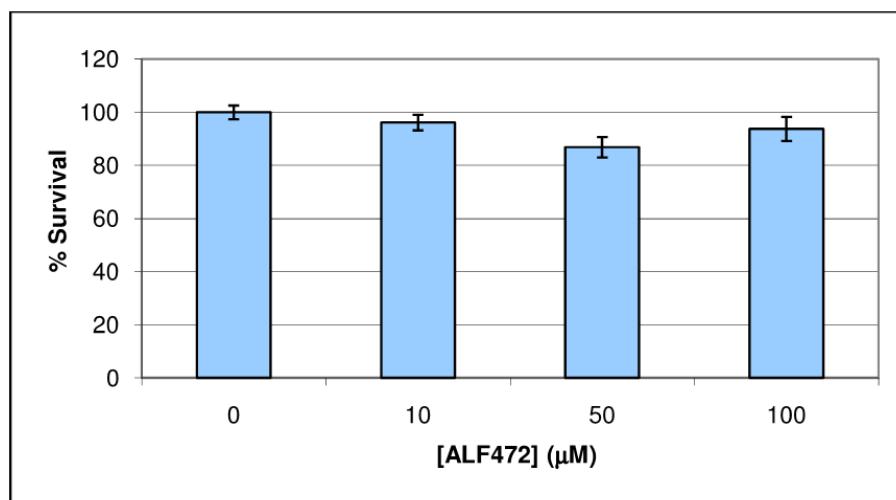


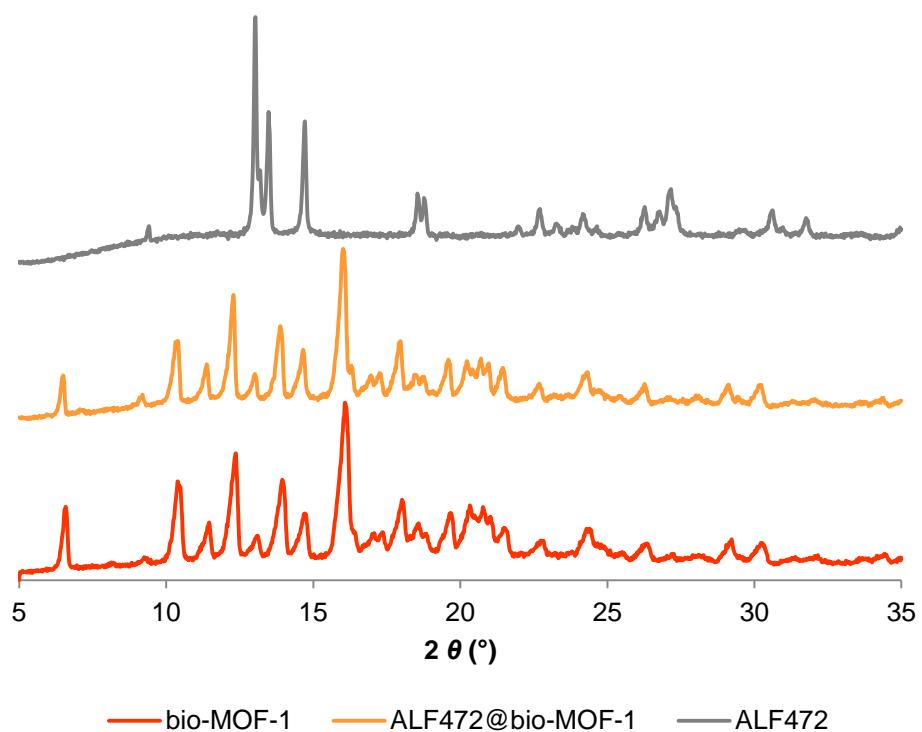
## Supporting Information

### **Cation Exchange Strategy for the Encapsulation of a Photoactive CO-Releasing Organometallic Molecule into Anionic Porous Frameworks**

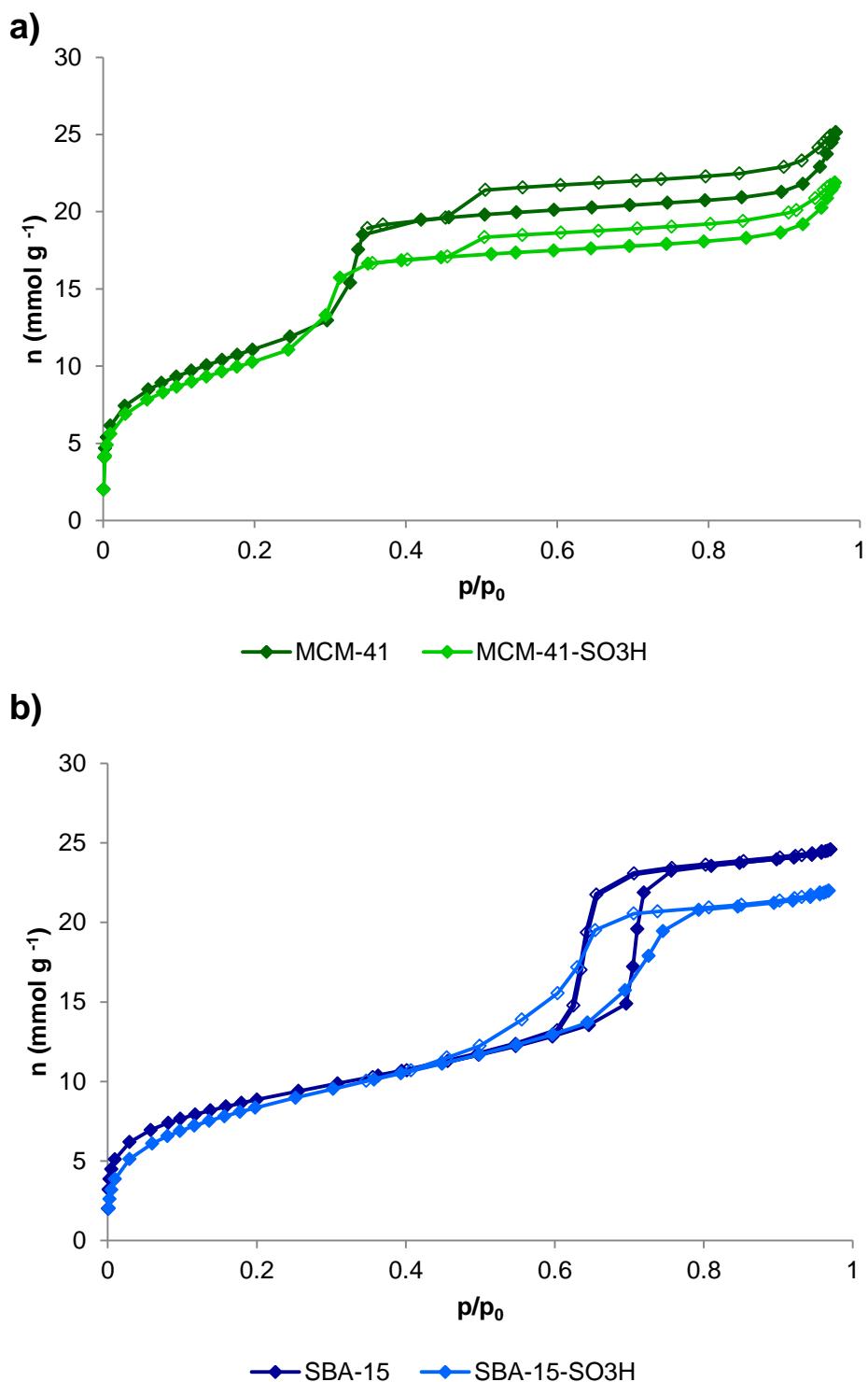
*Francisco J. Carmona, Sara Rojas, Purificación Sánchez, Hélia Jeremias, Ana R. Marques, Carlos C. Romão, Duane Choquesillo-Lazarte, Jorge A. R. Navarro, Carmen R. Maldonado\* and Elisa Barea\**



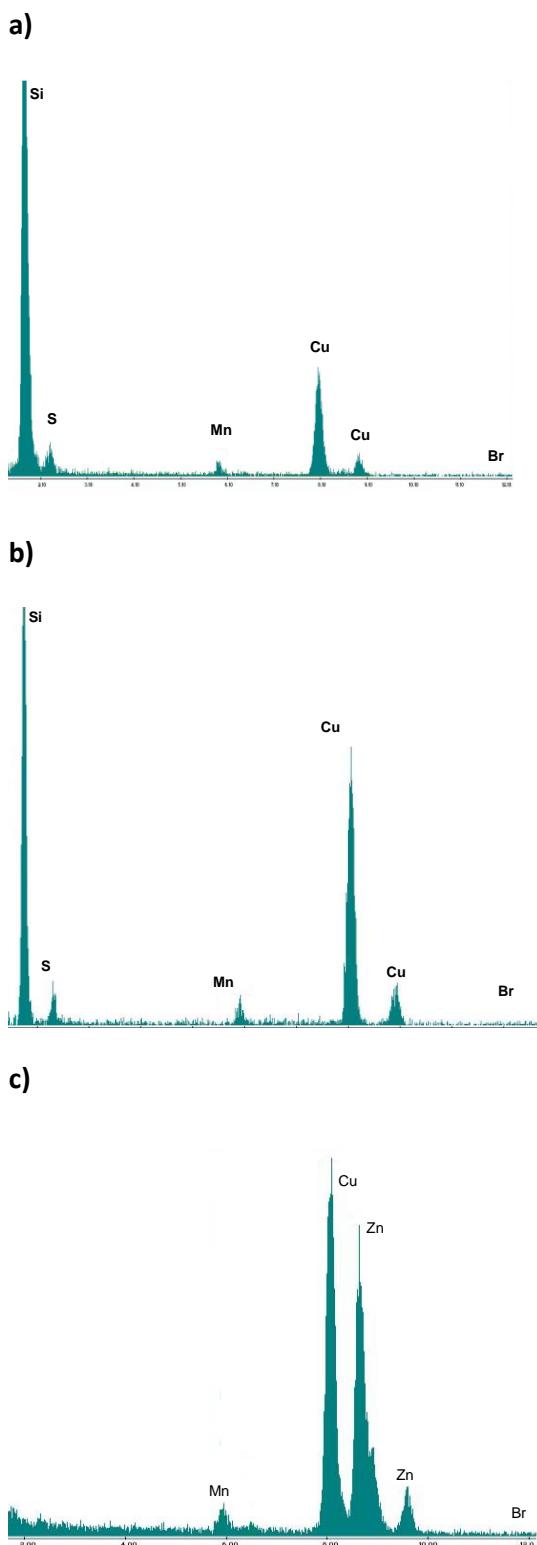
**Figure S1.** Cytotoxicity of the cationic CORM ALF472 against RAW264.7 macrophages.



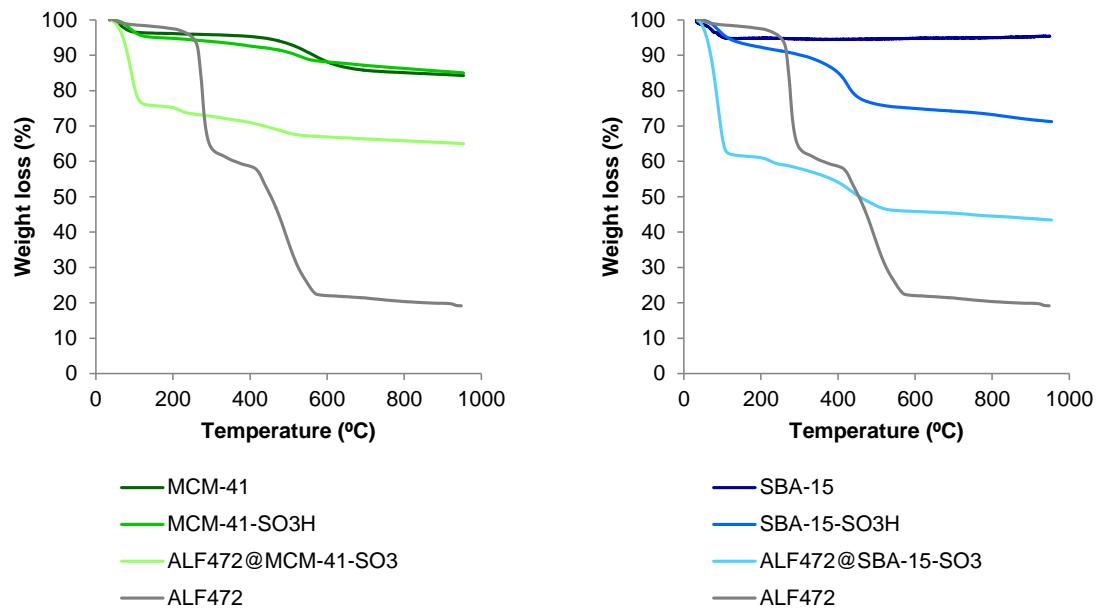
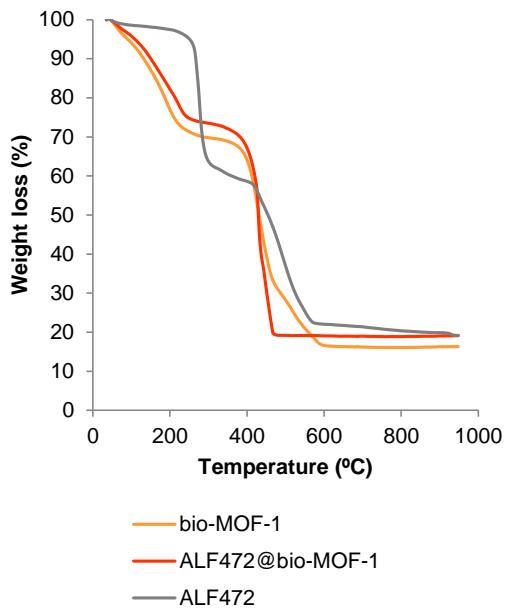
**Figure S2.** X-ray powder diffraction patterns of the compounds bio-MOF-1, ALF472 and ALF472@bio-MOF-1.



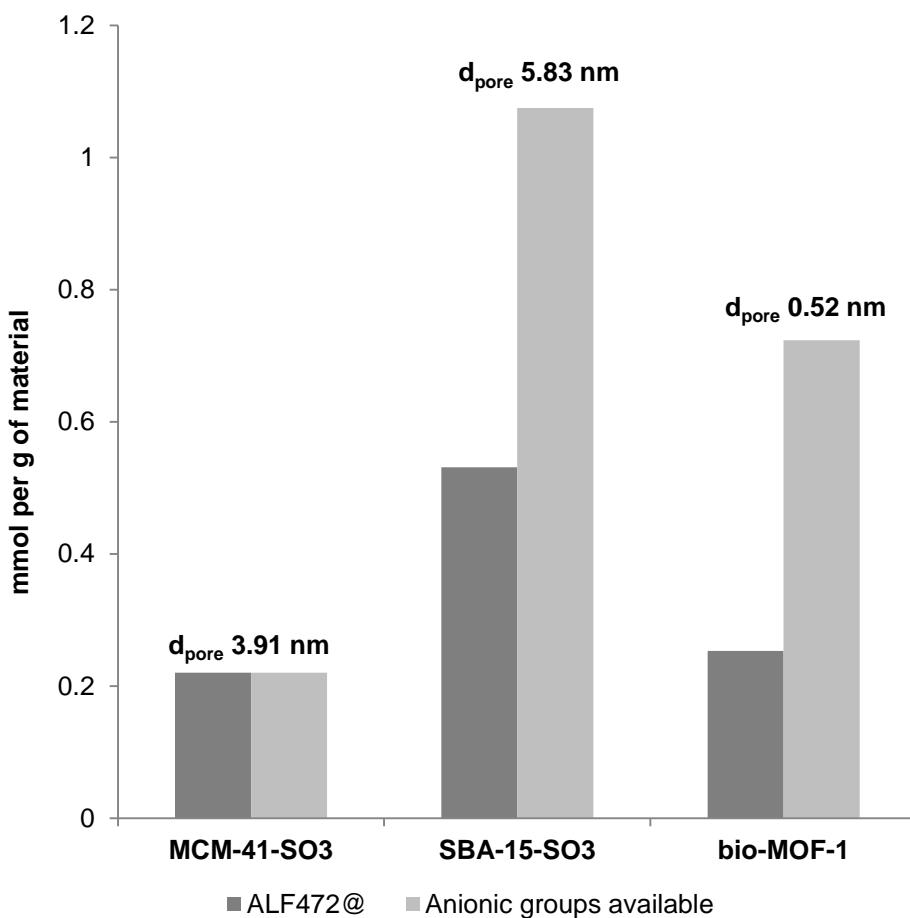
**Figure S3.** Nitrogen adsorption isotherms at 77 K of (a) MCM-41 and MCM-41-SO<sub>3</sub>H and (b) SBA-15 and SBA-15-SO<sub>3</sub>H. Empty symbols indicate desorption.



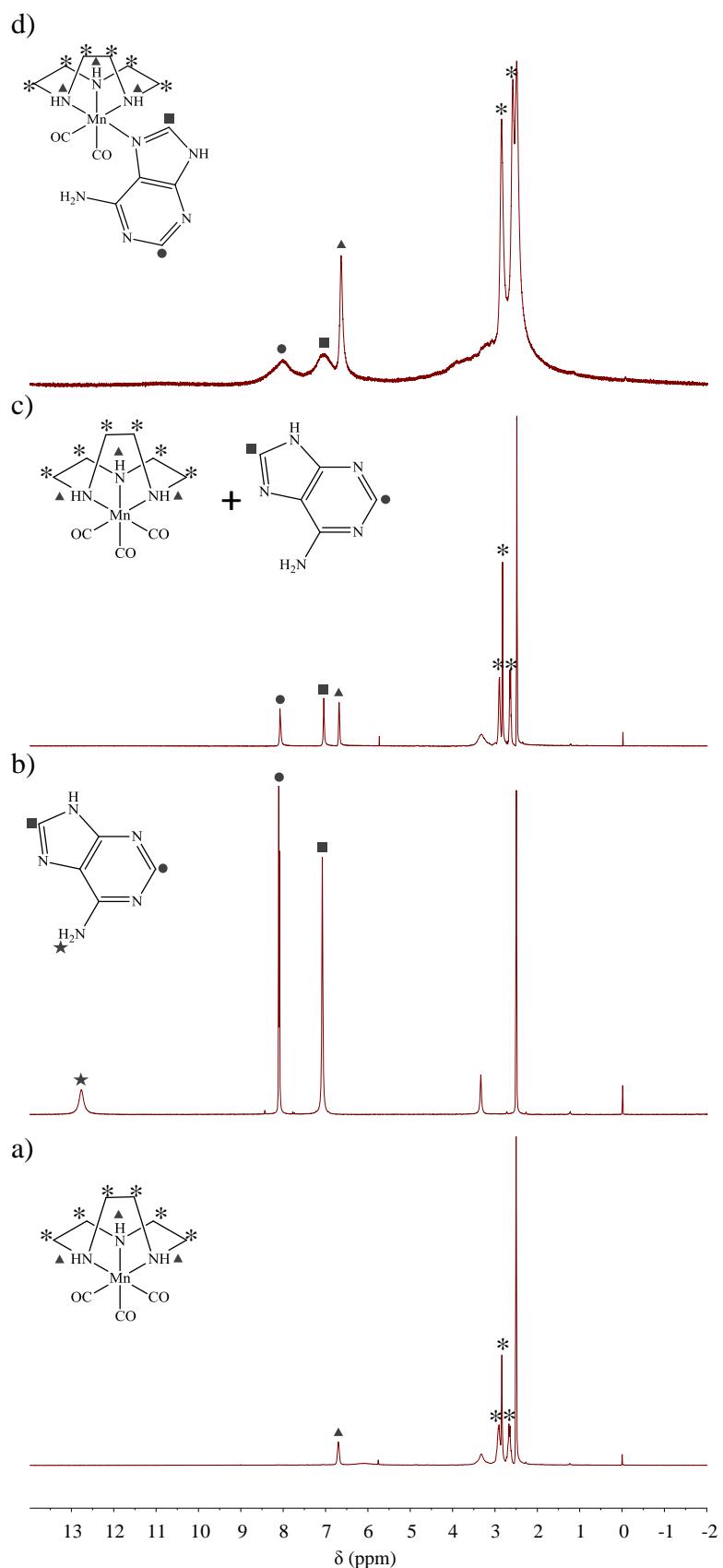
**Figure S4.** EDX spectra of the hybrid materials: (a) ALF472@MCM-41-SO<sub>3</sub>, (b) ALF472@SBA-15-SO<sub>3</sub> and (c) ALF472@bio-MOF-1.



**Figure S5.** Thermogravimetric analysis of ALF472, empty matrixes and loaded materials.



**Figure S6.** Available sites of ion exchange (light gray) and encapsulated ALF472 (dark gray) into the porous materials ALF472@MCM-41-SO<sub>3</sub>, ALF472@SBA-15-SO<sub>3</sub> and ALF472@bio-MOF-1. (Pore diameter of MCM-41-SO<sub>3</sub>H and SBA-15-SO<sub>3</sub>H calculated by the BJH method, pore diameter of bio-MOF-1 as reported).<sup>[1]</sup>



**Figure S7.** (a)  $^1\text{H}$ -NMR ( $\text{dmso-d}^6$ ) of ALF472, (b) adenine, (c) 1:1 mixture of ALF472 and adenine in the dark and (d) after 24 h irradiation.

Time	Metal leaching in water (%)					
	ALF472@bio-MOF-1		ALF472@SBA-15-SO <sub>3</sub>		ALF472@MCM-41-SO <sub>3</sub>	
	Zn	Mn	Si	Mn	Si	Mn
6 h	83.1	74.7	1.4	43.2	2.2	20.2
24 h	102.3	95.4	2.2	49.0	2.9	18.9
72 h	-	-	3.4	54	5.9	20.6

**Table S1.** Manganese, silicon and zinc leaching studies in water from ALF472@bio-MOF-1, ALF472@SBA-15-SO<sub>3</sub> and ALF472@MCM-41-SO<sub>3</sub> (studies were carried out under visible light at 37 °C).

Time	Manganese leaching in PBS (%)	
	ALF472@SBA-15-SO <sub>3</sub>	ALF472@MCM-41-SO <sub>3</sub>
1 h	52.7	85.7
6 h	61.4	86.3
24 h	75.9	88.1

**Table S2.** ALF472 release from ALF472@SBA-15-SO<sub>3</sub> and ALF472@MCM-41-SO<sub>3</sub> by ion-exchange in PBS (studies were carried out in darkness).

## References

- [1] J. An, S. J. Geib, N. L. Rosi, *J. Am. Chem. Soc.* **2009**, *131*, 8376.