

## Supplementary Materials

# Amelioration of Experimentally Induced Arthritis by Reducing Reactive Oxygen Species Production Through the Intra-Articular Injection of Water-Soluble Fullerenol

Wen-Shuo Kuo <sup>1,2,3,†</sup>, Chia-Tse Weng <sup>4,†</sup>, Jian-Hua Chen <sup>5,6,†</sup>, Chao-Liang Wu <sup>7</sup>, Ai-Li Shiau <sup>8</sup>, Jeng-Long Hsieh <sup>9</sup>, Edmund Cheung So, <sup>5,6,10,\*</sup> Po-Ting Wu <sup>11,12,13,14,15,\*</sup> and Shih-Yao Chen <sup>4,9,\*</sup>

<sup>1</sup> School of Chemistry and Materials Science, Nanjing University of Information Science and Technology, Nanjing 210044, China; wskuo88@gmail.com

<sup>2</sup> School of Environmental Science and Engineering, Nanjing University of Information Science and Technology, Nanjing 210044, China

<sup>3</sup> Center for Micro/Nano Science and Technology, National Cheng Kung University, Tainan 701, Taiwan

<sup>4</sup> Department of Internal Medicine, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan; ctweng@mail.ncku.edu.tw (C.-T.W.); z9903038@email.ncku.edu.tw (S.-Y.C.)

<sup>5</sup> Department of Anesthesia, An Nan Hospital, China Medical University, Tainan 709, Taiwan; aptx4869jfk@gmail.com (J.-H.C.); edmundsotw@gmail.com (E.C.S.)

<sup>6</sup> Department of Anesthesia, China Medical University, Taichung 404, Taiwan; aptx4869jfk@gmail.com

<sup>7</sup> Department of Biochemistry and Molecular Biology, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan; wumolbio@mail.ncku.edu.tw

<sup>8</sup> Department of Microbiology and Immunology, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan; alshiau@mail.ncku.edu.tw

<sup>9</sup> Department of Nursing, College of Nursing, Chung Hwa University of Medical Technology, Tainan 717, Taiwan; pipi58871053@yahoo.com.tw

<sup>10</sup> Graduate Institute of Medical Sciences, Chang Jung Christian Tainan 711, Taiwan

<sup>11</sup> Department of Orthopedics, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan; anotherme500@gmail.com

<sup>12</sup> Department of Orthopedics, National Cheng Kung University Hospital Dou-Liou Branch, College of Medicine, National Cheng Kung University, Yunlin 640, Taiwan

<sup>13</sup> Department of Orthopedics, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan

<sup>14</sup> Department of Biomedical Engineering, National Cheng Kung University, Tainan 701, Taiwan

<sup>15</sup> Medical Device R & D Core Laboratory, National Cheng Kung University Hospital, Tainan 701, Taiwan

\* Correspondence: edmundsotw@gmail.com (E.C.S.); anotherme500@gmail.com (P.-T.W.); z9903038@email.ncku.edu.tw (S.-Y.C.); Tel: +886-6-3553111 (ext. 1517) (E.C.S.); +886-6-2353535 (ext. 5535) (P.-T.W. & S.-Y.C.)

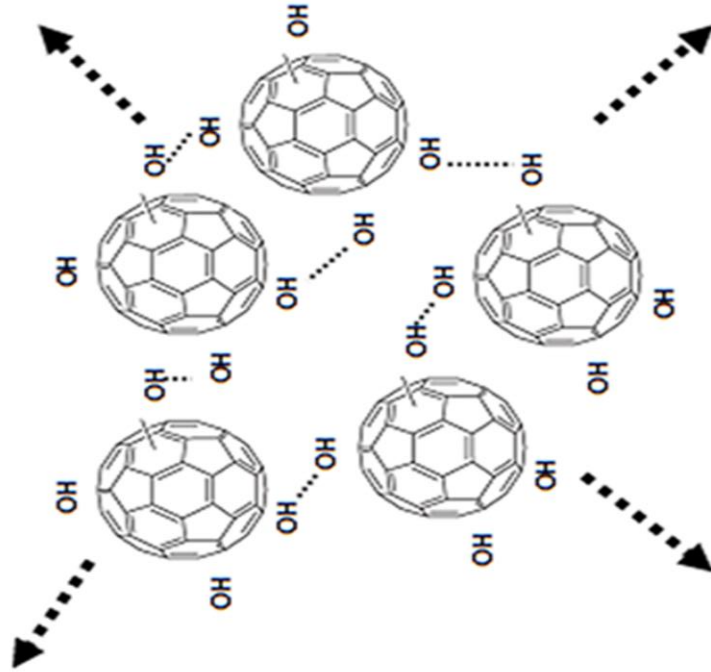
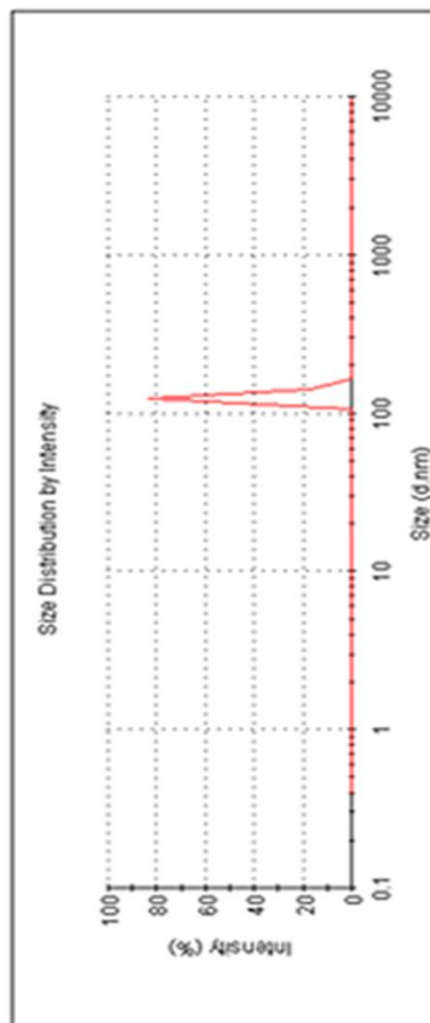
† The authors contributed equally to this work.

Sample Name: H2O 1  
 SOP Name: mansettings.dat  
 File Name: C60.dts  
 Record Number: 2  
 Material Rt: 2.42  
 Material Absorbance: 0.10  
 Dispersant Name: Water  
 Dispersant Rt: 1.330  
 Viscosity (cP): 0.8872

Temperature (°C): 25.0  
 Count Rate (kcps): 130.1  
 Cell Description: Disposable sizing cuvette  
 Duration Used (s): 50  
 Measurement Position (mm): 4.65  
 Attenuator: 10

	Diam. (nm)	% Intensity	Width (nm)
<b>Z-Average (damm):</b> 1070	<b>Peak 1:</b> 125.7	100.0	7.255
<b>PDI:</b> 0.897	<b>Peak 2:</b> 0.000	0.0	0.000
<b>Intercept:</b> 1.21	<b>Peak 3:</b> 0.000	0.0	0.000

**Result quality: Refer to quality report**



**Figure S1.** The size of water-soluble C<sub>60</sub>(OH)<sub>36</sub> (fullerenol) was determined by the DLS and the average size was approximately 125.7 nm, which attributed to the hydrogen bond to form the aggregation of fullerenol.