

# Detecting the PEX like domain of Matrix Metalloproteinase-14 (MMP-14) with therapeutic conjugated CNTs

*D. Vieira<sup>1</sup>, J. Barralet<sup>1,2</sup>, E. Harvey<sup>1,2</sup>, G. Merle<sup>\*1,3</sup>*

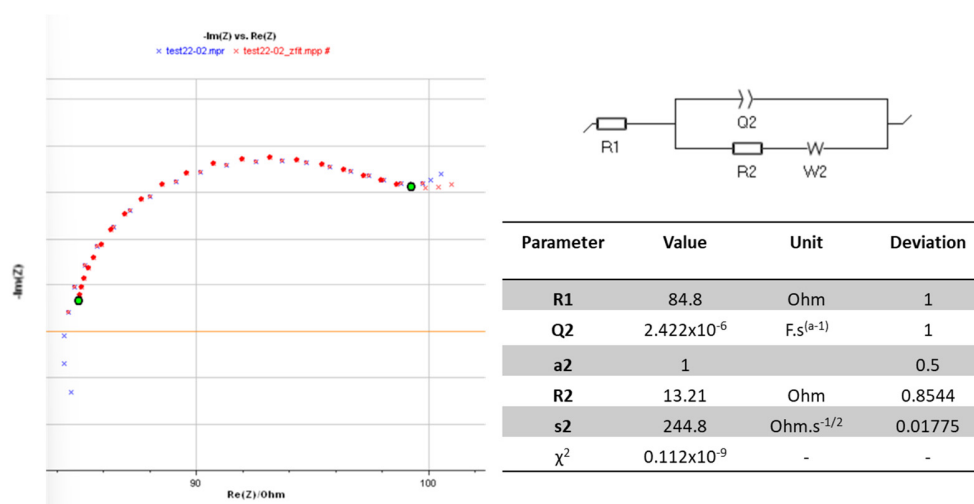
<sup>1</sup> McGill University, Faculty of Medicine, Department of Experimental Surgery

<sup>2</sup> Department of Surgery, McGill University, Montreal, Canada

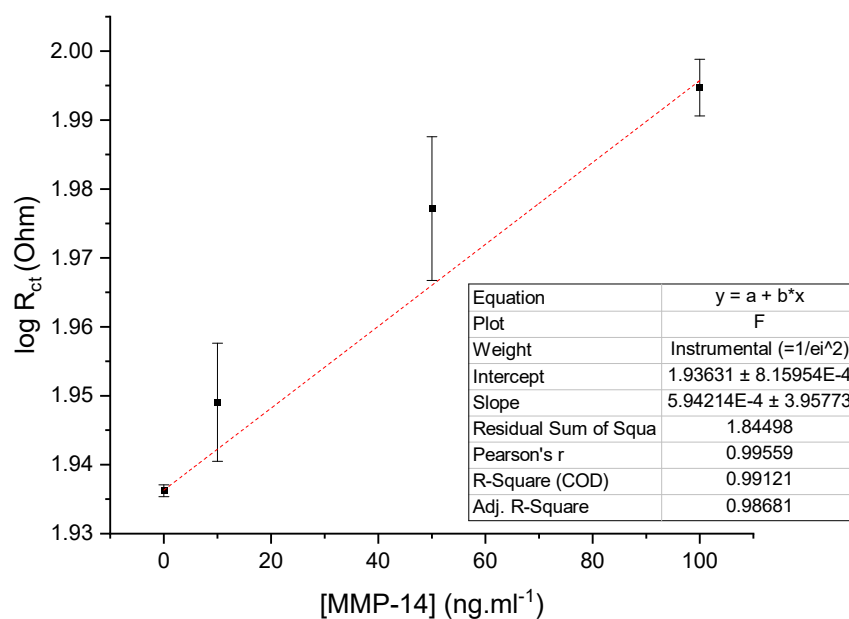
<sup>3</sup> Polytechnique Montreal, Department of Chemical Engineering

*\*Corresponding author*

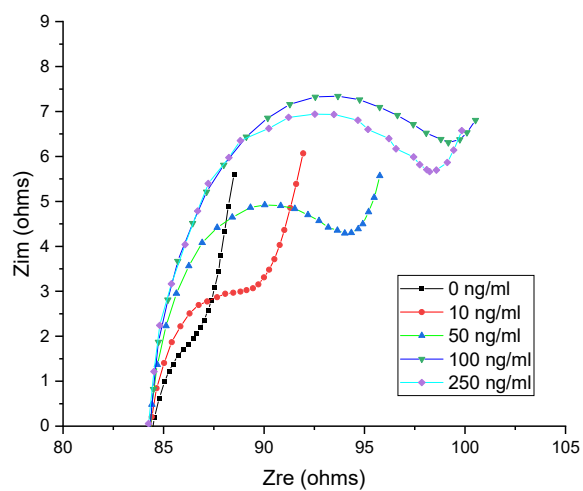
## Supplementary information



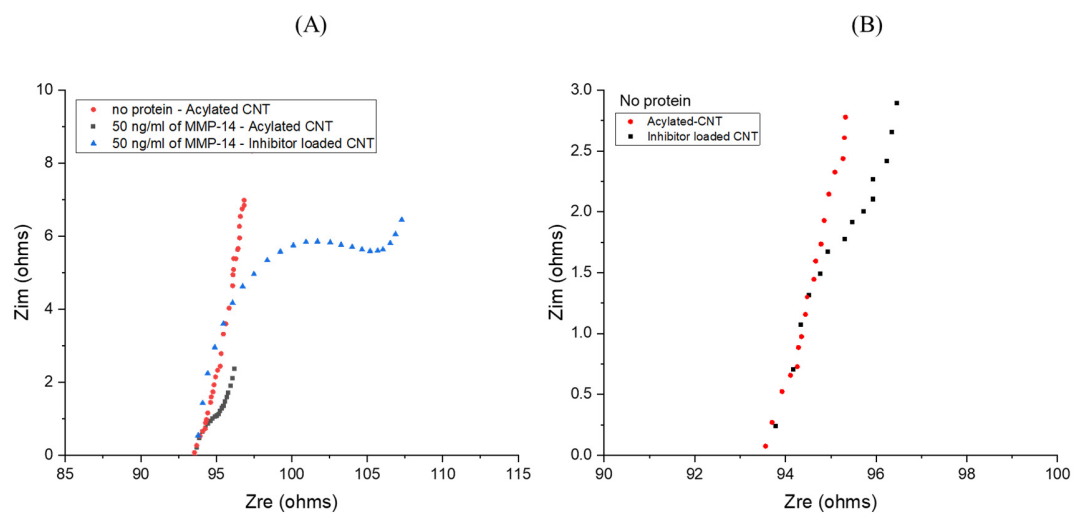
**Figure S1** – Circuit fit for inhibitor loaded CNT electrode after interaction with 50 ng.ml<sup>-1</sup> of MMP-14 in PBS (pH 7.40) containing 10 mmol.ml<sup>-1</sup> of K<sub>4</sub>[Fe (CN)<sub>6</sub>]<sup>-</sup>, 10 mmol ml<sup>-1</sup> of K<sub>3</sub>[Fe (CN)<sub>6</sub>]<sup>-</sup> and 10 mmol.ml<sup>-1</sup> of NaCl, applied potential of +0.20V, from 50kHz to 500Hz, amplitude 50 mV.



**Figure S2** – Linear fit of log Rct response for different concentrations of MMP-14. Protein concentration varying from 10 ng.mL<sup>-1</sup> to 100 ng.mL<sup>-1</sup>, applied potential of +0.20V, from 50kHz to 500Hz, amplitude 50 mV



**Figure S3** – EIS response of inhibitor loaded CNT after interaction with MMP-14, varying concentration from 0 to 250 ng.mL<sup>-1</sup>, in PBS (pH 7.40) containing 10 mmol.mL<sup>-1</sup> of K<sub>4</sub>[Fe (CN)<sub>6</sub>]<sup>-</sup>, 10 mmol mL<sup>-1</sup> of K<sub>3</sub>[Fe (CN)<sub>6</sub>]<sup>-</sup> and 10 mmol.mL<sup>-1</sup> of NaCl (applied potential of +0.20V, from 50kHz to 500Hz, amplitude 50 mV).



**Figure S4** – (A) EIS response of acylated CNT after interaction with 50 ng.mL<sup>-1</sup> of MMP-14 and (B) EIS response in absence of protein for acylated and inhibitor loaded CNT in PBS (pH 7.40) containing 10 mmol.mL<sup>-1</sup> of K<sub>4</sub>[Fe (CN)<sub>6</sub>], 10 mmol mL<sup>-1</sup> of K<sub>3</sub>[Fe (CN)<sub>6</sub>]<sup>-</sup> and 10 mmol.mL<sup>-1</sup> of NaCl, applied potential of +0.20V, from 50kHz to 500Hz, amplitude 50 mV.