

Supporting information

Immobilisation of KR12 on a titanium alloy surface using linking arms improves antimicrobial activity and supports osteoblast cytocompatibility

Mohadeseh Zare ^{a*}, Laura Colomina Alfaro ^b, Antonella Bandiera ^b, Esra Mutlu ^a,
David Grossin ^c, Fernando Albericio ^d, Sarah A. Kuehne ^e, Zubair Ahmed ^f, Artemis
Stamboulis ^{a*}.

^a Biomaterials Research Group, School of Metallurgy and Materials, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

^b Department of Life Sciences, University of Trieste, via L. Giorgieri, 1, Trieste, 34127 Italy

^c CIRIMAT, Toulouse INP, Université Toulouse 3 Paul Sabatier, CNRS, Université de Toulouse, 4 Allée Emile Monso - BP44362, 31030 Toulouse Cedex 4, France

^d School of Chemistry and Physics, University of KwaZulu-Natal, Durban, 4000 South Africa

^e School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, UK

^f Neuroscience and Ophthalmology, Institute of Inflammation and Ageing, College of Medical and Dental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

*Corresponding authors: a.stamboullis@bham.ac.uk; zare.mohadeseh@gmail.com

Details of the HELP polypeptide

HELP (clon. 22/3/2004) nel plasmide pEX8EL aa: 536 MW 44885.79 pl: 11.68

Sequence: MRGSHHHHHHGSAAAAAAAAAKAAAKAAQFGL VPGVG VAPGVG
 VAPGVG VAPGVG LAPGVG VAPGVG VAPGVG VAPGVG VAPGIAPA AAAAAKAAAKAAQFGL
 VPGVG VAPGVG VAPGVG VAPGVG LAPGVG VAPGVG VAPGVG VAPGIAPA
 AAAAAKAAAKAAQFGL VPGVG VAPGVG VAPGVG VAPGVG LAPGVG VAPGVG
 VAPGVG VAPGIAPA AAAAAKAAAKAAQFGL VPGVG VAPGVG VAPGVG VAPGVG
 LAPGVG VAPGVG VAPGVG VAPGIAPA AAAAAKAAAKAAQFGL VPGVG VAPGVG
 VAPGVG VAPGVG LAPGVG VAPGVG VAPGVG VAPGIAPA AAAAAKAAAKAAQFGL
 VPGVG VAPGVG VAPGVG VAPGVG LAPGVG VAPGVG VAPGVG VAPGIAPA
 AAAAAKAAAKAAQFGL VPGVG VAPGVG VAPGVG VAPGVG LAPGVG VAPGVG
 VAPGVG VAPGIAPA AAAAAKAAAKAAQFGL VPGVG VAPGVG VAPGVG VAPGVG
 LAPGVG VAPGVG VAPGVG VAPGIAPGV

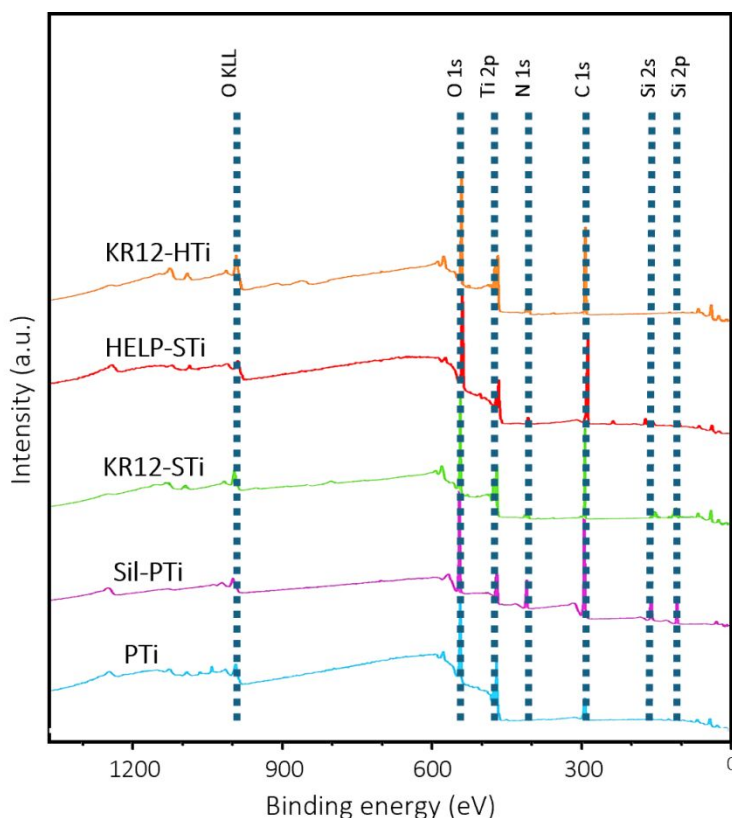


Figure S1. XPS survey spectra of modified surfaces PTi, SiI-PTi, KR12-STi, HELP-STi, and KR12-HTi with characteristic peaks of carbon (C), oxygen (O), nitrogen (N), silicon (Si), and titanium (Ti).

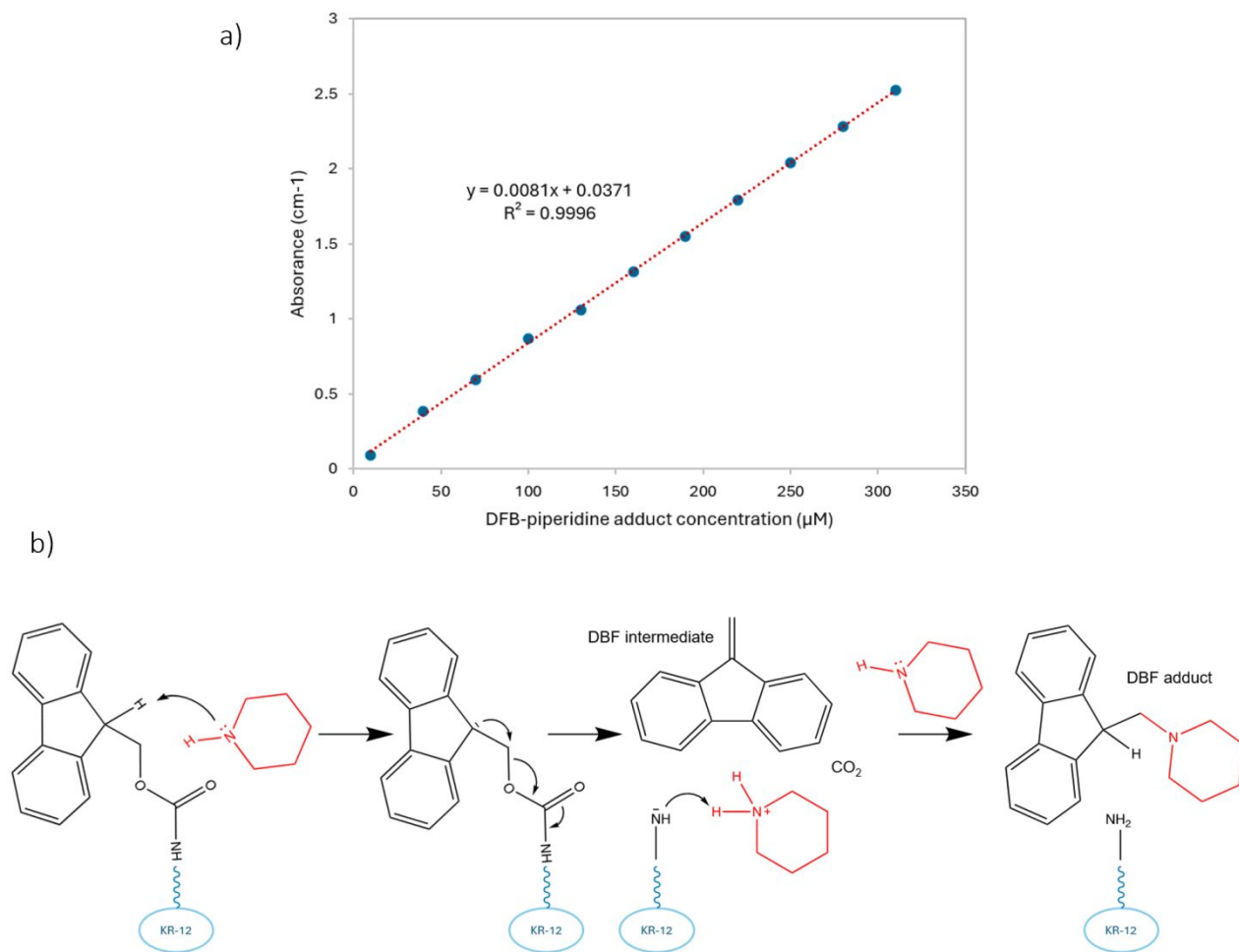


Figure S2. a) Calibration curve of dibenzofulvene-base adduct (μM) vs. absorbance, using 20% piperidine (Panel B) in DMF, b) Mechanism for Fmoc group removal from immobilized KR-12.