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# Supplementary Figures and Tables

## **Modification of the antibiotic, colistin, with dextrin causes enhanced cytotoxicity and triggers apoptosis in myeloid leukemia**

Siân Rizzo<sup>1,†</sup>, Mathieu Varache<sup>1,‡</sup>, Edward J. Sayers<sup>2</sup>, Arwyn T. Jones<sup>2</sup>, Alex Tonks<sup>3</sup>, David W. Thomas<sup>1</sup> and Elaine L. Ferguson<sup>1,\*</sup>

<sup>1</sup>Advanced Therapies Group, School of Dentistry, Cardiff University, Cardiff, UK

<sup>2</sup>School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Cardiff, UK

<sup>3</sup>Department of Haematology, School of Medicine, Cardiff University, Cardiff, UK

\*Correspondence: Elaine L. Ferguson

Advanced Therapies Group, School of Dentistry, Cardiff University, Cardiff, UK

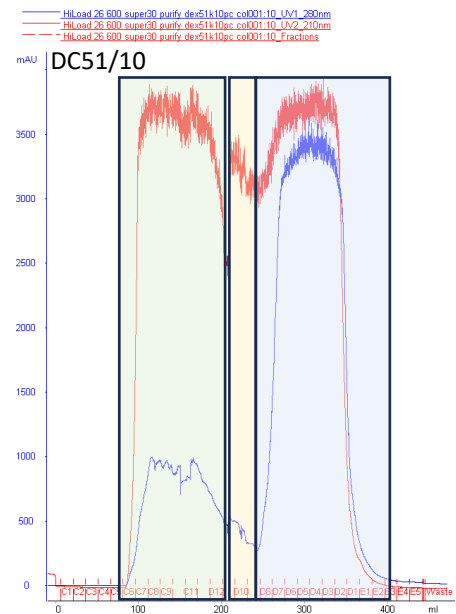
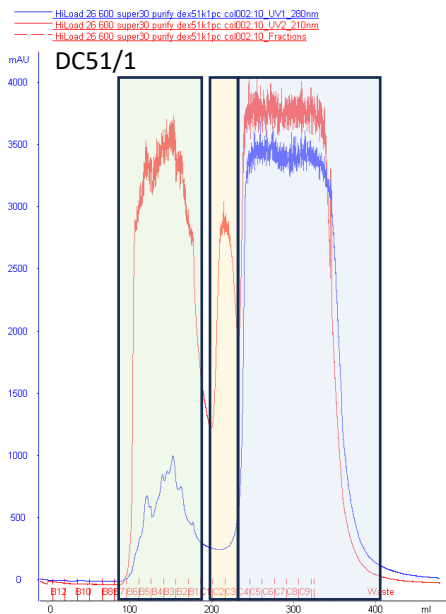
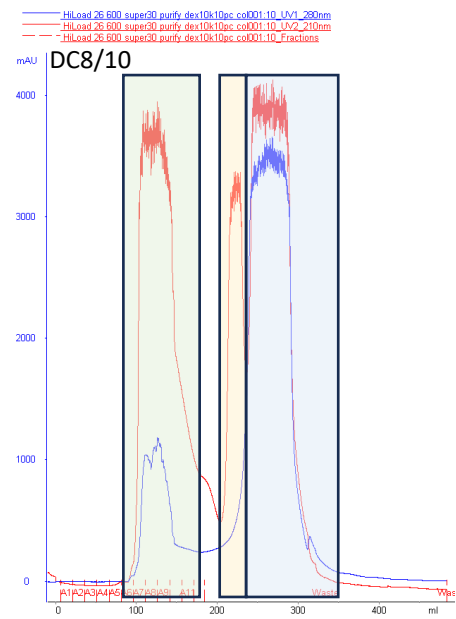
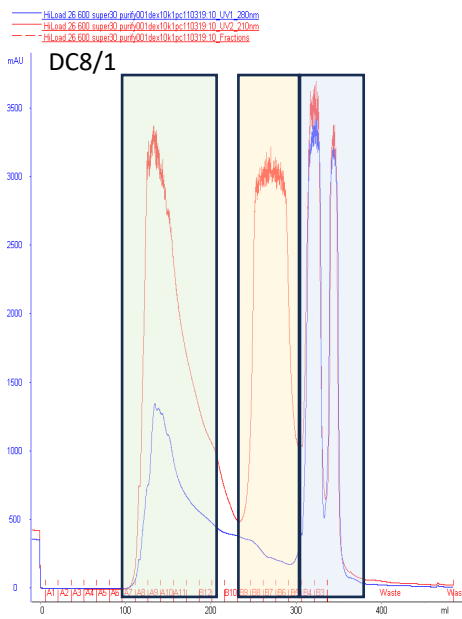
Tel : +44 (0)2922 510663

Email : FergusonEL@cardiff.ac.uk

**Table S1.** Characteristics of cell lines used in this study.

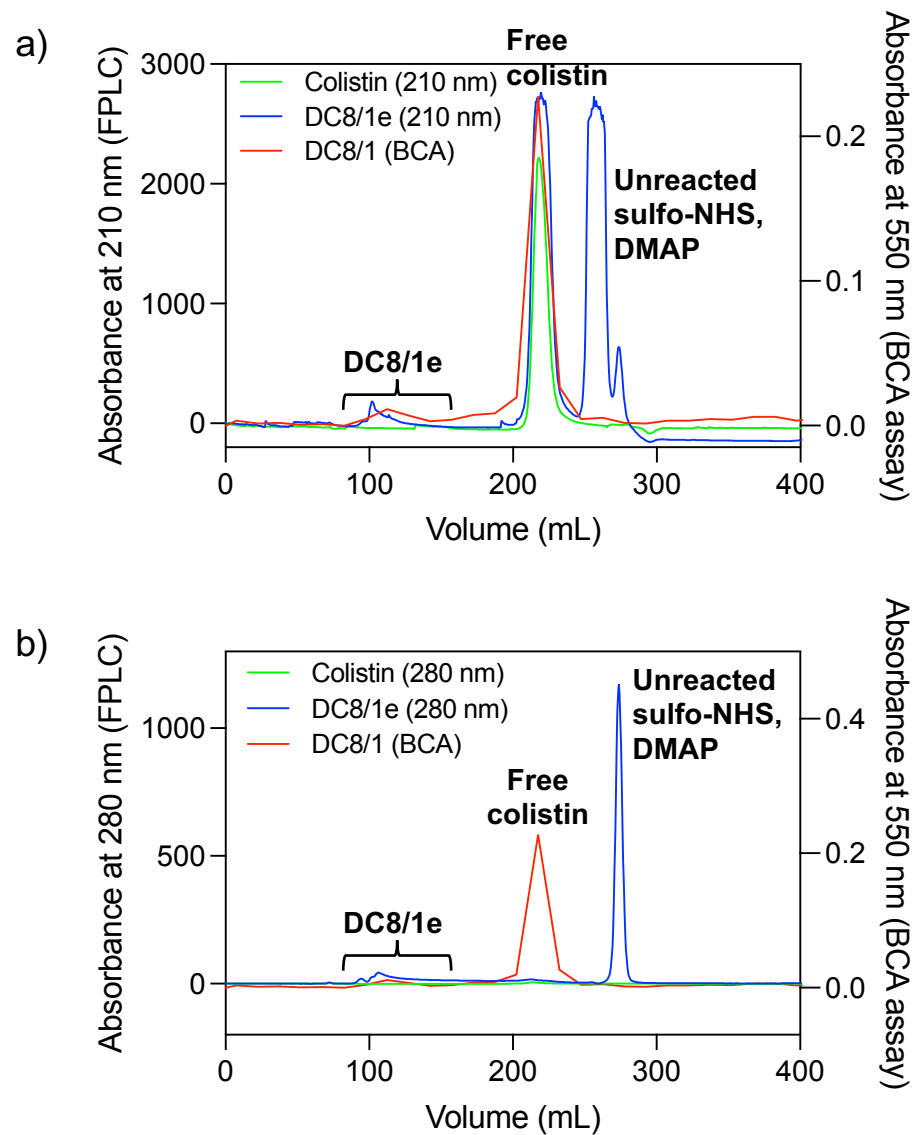
Cell line	Source	Patient	Pathology	Culture medium	KDM1A mRNA expression (RNAseq)*
MV-4-11	Peripheral blood	Caucasian male, 10yrs	biphenotypic B myelomonocytic leukemia	IMDM with GlutaMAX™, 10% v/v heat-inactivated (HI)-FBS	5.08
THP-1	Peripheral blood	Japanese male, 1yr	acute monocytic leukemia	RPMI 1640 with GlutaMAX™, 10% HI-FBS	5.40
TF-1	Bone marrow	Japanese male, 35yrs	erythroleukemia	RPMI-1640, 10% v/v HI-FBS, 2ng/mL rhGM-CSF	6.11
HK-2	Kidney proximal tubule	Caucasian male, adult	Normal	K-SFM with L-glutamine, epidermal growth factor, bovine pituitary extract	N.D.

\* from Barretina *et al.*<sup>38</sup> RNAseq TPM gene expression data for just protein coding genes using RSEM. Log2 transformed, using a pseudo-count of 1.  
N.D., not determined



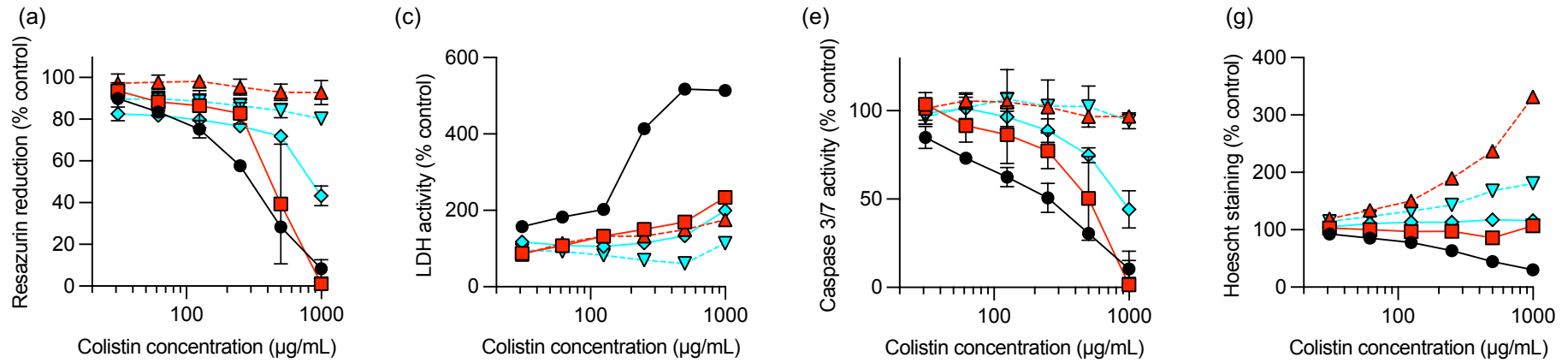
Conjugate
Free colistin
Unreacted sulfo-NHS, DMAP

**Figure S1.** FPLC chromatograms of dextrin-colistin conjugate purification, where the blue line shows absorbance at 280nm and the red line shows absorbance at 210 nm. Fractions (15 mL) are marked along the x-axis. Shaded areas correspond to conjugated colistin, free colistin and unreacted sulfo-NHS and DMAP.

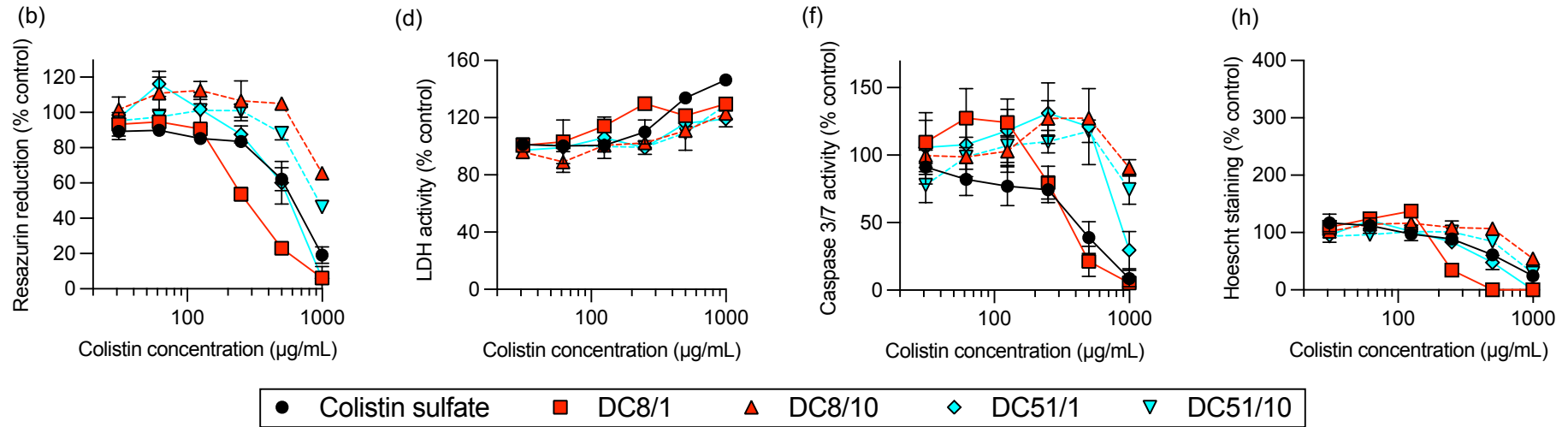


**Figure S2.** Overlay of FPLC chromatograms of colistin sulfate and DC8/1 purification at a) 210 nm and b) 280 nm, with protein content (by BCA assay) of each 15 mL fraction, confirming conjugation of dextrin and colistin.

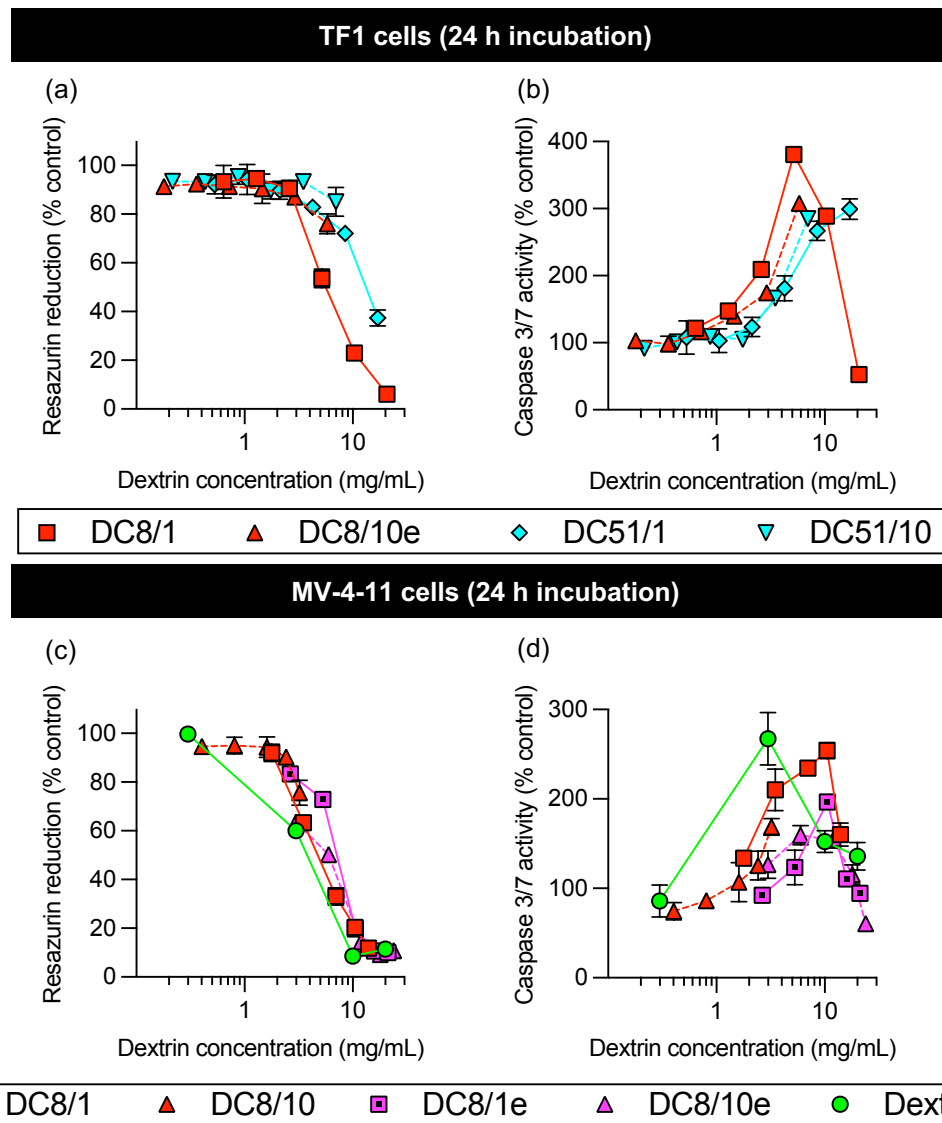
### HK-2 (kidney) cells (72 h incubation)



### TF-1 (leukemia) cells (72 h incubation)



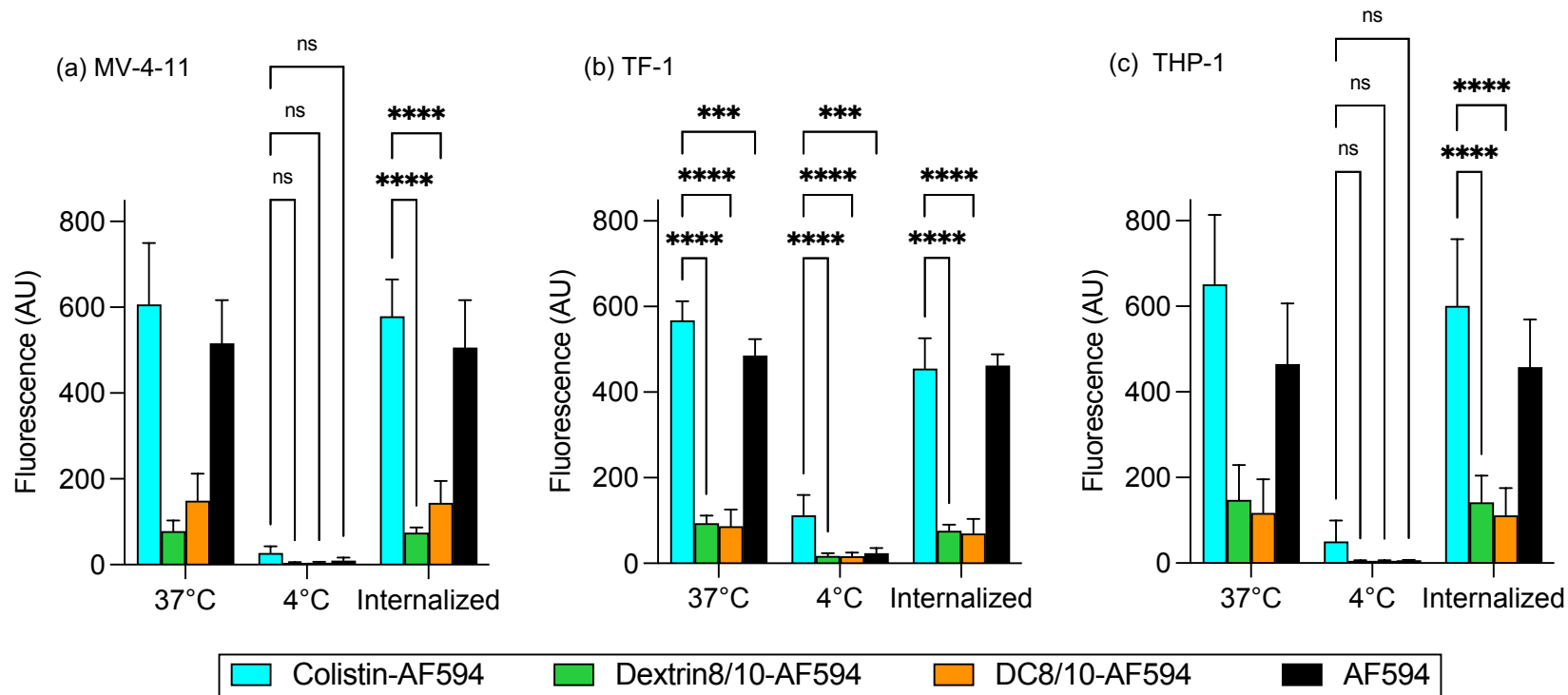
**Figure S3.** Detection of resazurin reduction (metabolic activity), LDH leakage (cell-membrane integrity, necrosis), caspase 3/7 activity (apoptosis) and Hoechst 33342 staining (DNA content) under multiplex conditions of (a,c,e,g) HK-2 and (b,d,f,h) TF-1 cells incubated for 72 h with colistin sulfate and dextrin-colistin conjugates. Data represent mean ( $\pm 1$ SD,  $n = 3$ ). Where error bars are invisible, they are within size of data points.



**Figure S4.** Detection of resazurin reduction (metabolic activity) (panels (a) and (c)) and caspase 3/7 activity (apoptosis) (panels (b) and (d)) under multiplex conditions of MV-4-11 cells incubated for 24 h with colistin sulfate and dextrin-colistin conjugates containing amide or ester linkers. Data represent mean ( $\pm 1SD$ ,  $n = 3$ ). Where error bars are invisible, they are within size of data points.







**Figure S6.** Cell-associated fluorescence at 37°C (total association) and 4°C (external binding) of AF594-labelled colistin, dextrin and dextrin-colistin conjugate (DC8/10) by (a) MV-4-11, (b) TF-1 and (c) THP-1 cells after 1 h incubation at 4 and 37°C ( $\pm 1SD$ ,  $n = 5$  to 8), where \*\*\* indicates significance  $p < 0.001$  and \*\*\*\* indicates significance  $p < 0.0001$  compared to colistin-AF594. Where significance is not shown,  $p > 0.05$  (*ns*, not significant).