

The authors would like to draw the reader's attention to a correction in the following article:

Yong Song, Katherine Southam, B Basil Beamish, Graeme R Zosky. Effects of chemical composition on the lung cell response to coal particles: Implications for coal workers' pneumoconiosis. *Respirology*. 2022 Jun;27(6):447-454. <https://onlinelibrary.wiley.com/doi/10.1111/resp.14246>

In this article, we reported 1) K_2O was positively associated with cytotoxicity; 2) Fe_2O_3 was negatively associated with cytokine production.

In subsequent experiments in our laboratory, we identified an issue with one of the key ELISAs whereby coal dust was non-specifically binding IL-8 that was secreted by the cells, leading to erroneous underestimation of IL-8 release in response to some of our coal dust samples (1). Therefore, we performed an absorption study of IL-8 in a cell-free system (Figure 1) and used this to adjust our published IL-8 data using correction factors (2) (Figure 2). We then used these corrected values to re-run our statistical models (Table 1).

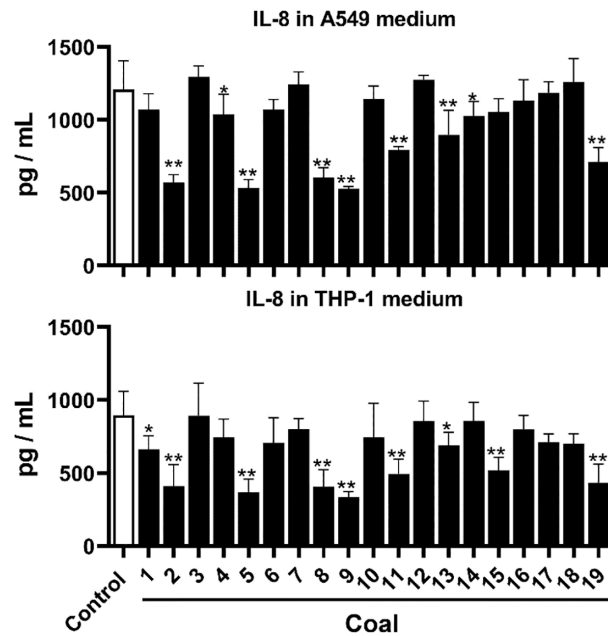


FIGURE 1 Variable absorption of IL-8 by coal dust. The recombinant IL-8 protein was co-incubated with 19 different coal samples and the vehicle control (particle free) in cell medium.

The experiments were performed in triplicate. Values are mean (SD). * $p < 0.05$, ** $p < 0.001$ compared to the control group.

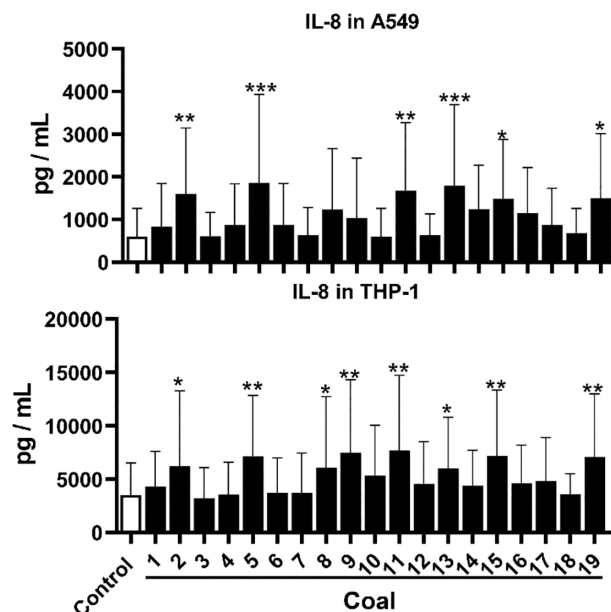


FIGURE 2 Corrected IL-8 response. IL-8 production was corrected by implementing a correction factor for the data in Figure 2 A and B of the original publication. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ compared to the control group. Values are mean (SD) with $n = 6$ per group for A549 and $n = 7$ per group for THP-1.

These revised data partially changed the outcome of the analysis of the relationship between coal chemistry and the cellular response from our original publication. We found that the IL-8 response in epithelial cells was now positively associated with SiO_2 , while the IL-8 response in macrophages was negatively associated with the fixed carbon content of the coal dust. It is important to note that this correction does not impact on our original major conclusion that K_2O could be a marker of coal mine dust potency in terms of the risk for coal workers' pneumoconiosis (CWP).

TABLE 1 Significant associations between coal chemistry and the cell response identified using stepwise multiple regression. Multivariate linear regression was applied to determine whether these associations were maintained after adjustment for particle size.

Cell Response	Stepwise regression analysis				Linear regression analysis		
	R^2 Change	β	ANOVA (F)	p	β	95% CI	p
A549 IL-8							
SiO_2	0.498	0.653	15.258	<0.001	15.87	7.92–23.82	<0.001
Mn_3O_4	0.129	−0.443			−9927.98	−25,062 – 5206.97	0.183
P_2O_5	0.125	−0.367			−1440.13	−4271.55 – 391.28	0.297
THP-1 IL-8							
Fixed Carbon	0.526	−0.725	18.887	<0.001	−51.19	−75.83 – −26.55	<0.001

The authors apologize for these errors and any confusion it may have caused.

REFERENCES

1. Yen S, Zosky RG, Song Y. Assessing assay absorption artefacts in in vitro cell responses to particles. *bioRxiv* [Preprint] posted 19 January 2023. <https://www.biorxiv.org/content/10.1101/2023.01.16.524328v1.full>
2. Herseth JL, Totlandsdal AI, Bytingsvik S, Kaur J, Noer M, Bolling AK. The challenge of obtaining correct data for cellular release of inflammatory mediators after in vitro exposure to particulate matter. *Toxicol Lett.* 2013;221(2):110–7.