

17<sup>th</sup> International Conference on

# Industrial Chemistry and Water Treatment

May 21-22, 2018 | New York, USA

## Speciation of selenium(IV) (selenite) and selenium(VI) (selenate) levels in human whole blood samples

**Victus Bobonkey Samlafo**  
University of Education, Ghana

This paper examined the speciation of selenium(IV) (selenite) and selenium(VI) (selenate) levels in human whole blood samples from Tarkwa and its environs, a mining-impacted area in Ghana, using hydride generation atomic absorption spectrophotometric technique. Selenium (IV) in the experimental subjects ranged from  $0.08 \pm 0.01$   $\mu\text{g/mL}$  to  $0.50 \pm 0.02$   $\mu\text{g/mL}$  with a mean of  $0.29$   $\mu\text{g/mL}$ , while the control ranged from  $0.02 \pm 0.1$   $\mu\text{g/mL}$  to  $0.21 \pm 0.05$   $\mu\text{g/mL}$ , with a mean of  $0.07$   $\mu\text{g/mL}$ . Significant differences existed between the levels of selenium (IV) concentrations in experimental and control subjects ( $p=0.0001 < 0.05$ ). The selenium (VI) in experimental subjects ranged from  $2.97 \pm 0.52$   $\mu\text{g/mL}$  to  $4.39 \pm 0.42$   $\mu\text{g/mL}$ , with a mean of  $3.63$   $\mu\text{g/mL}$ , while the control ranged from  $0.60$   $\mu\text{g/mL}$  to  $1.0$   $\mu\text{g/mL}$ , with a mean of  $0.89$   $\mu\text{g/mL}$ . Significant differences existed between the levels of selenium (VI) in experimental and the control subjects ( $p=5.98 \times 10^{-14} < 0.05$ ). The measurement precision determined by relative standard deviation was within  $\pm 5\%$ . The accuracy of the determination was evaluated by analysing certified standard human hair reference material GBW 09101. The observed values were within  $\pm 6\%$  of the certified values.

### Biography

Victus Bobonkey Samlafo earned his BSc (Chemistry) and Diploma in Education from the University of Cape Coast- Ghana in 1996. He received MSc (Analytical Chemistry) from the Kwame Nkrumah University of Science & Technology, Kumasi, Ghana in 2002. He later had a PhD in Nuclear and Radiochemistry in 2011 from the University of Ghana, Legon (Accra). He has been teaching at the University of Education, Winneba (UEW) since 2004 to date. He is a Senior Lecturer and Acting Head of Integrated Science Education Department. He is currently a member of the Academic Board of UEW, a member of the Science Faculty Board and Past Departmental Examinations Officer for 20015/2016 academic year. He is currently serving as a Reviewer for the following Journals *West Africa Journal of Ecology*, *Journal of Global Ecology and Environment* and *International Journal of Biological Macromolecules*. He attended several conferences and workshops and had 18 referred articles in both international and local journals. He also contributed to a lot of study materials and books.

vsamlafo@yahoo.com

Notes: