CURRICULUM VITAE

Shorok Abdelhameed
PhD of Pharmaceutical science
M.Sc. in Pharmaceutical science

Research Experience

PhD Researcher

KULeuven, Leuven, Belgium. Oct. 2018- Dec. 2022

- Explored the catalytic activity of POMs (homogenous catalyst) to cleave peptide bonds in proteins via using sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE).
- Studied the redox activity of metal-oxo clusters (Polyoxometalates, POMs) as homogenous catalyst towards different biomolecules.
- Identified the specific cleavage sites in the proteins and the mechanism of the cleavage through using nLC-MS/MS.
- Investigated the photocatalytic activity of POMs to cleave C-C bond as homogenous and heterogenous catalyst.

Research assistant

KULeuven, Leuven, Belgium. Sep. 2016- Jul. 2018

- Design and synthesis of different types of metal-oxo clusters.
- Characterization of metal-oxo clusters via different spectroscopic techniques such as:
  - ^{1}H, ^{13}C and ^{31}P NMR,
  - EPR
  - IR
  - UV-Vis
  - Raman spectroscopy
  - Mass spectrometry.

Junior researcher

Assiut University, Assiut, Egypt**.** Dec. 2012- Oct. 2015

- Design, synthesis, and evaluation of amide prodrugs of Flufenamic acid and other NSAIDs with potential colorectal cancer chemopreventive activity.
- Preparation of mesoporous nanoparticles formulation for targeting the cancer cells.
- Used computational software (MOE, Discovery studio) for Pharmacophore, Docking and QSAR studies.

Education

PhD in Chemistry Oct. 2018 – Dec. 2022

KU Leuven, Chemistry Department, Leuven, Belgium

PhD topic: Exploring Oxidation-Reduction Reactions Between Metal-Substituted Polyoxometalates and Proteins

M.Sc. in Chemistry Sep. 2016 – Jul. 2018
KULeuven, Chemistry Department, Leuven, Belgium.
Thesis Title: Redox activity of Ce(IV)-substituted polyoxometalates towards amino acids and peptides.
GPA: Magna cum laude (83.39%)

Postgraduate studies. Dec. 2012- Oct. 2015
Assiut university, Department of Medicinal chemistry, Assiut, Egypt.
Project title: evaluation of amide prodrugs of Flufenamic acid and other NSAIDs with potential colorectal cancer chemopreventive activity.

Bachelor of Pharmaceutical science Sep. 2006 – Jun. 2011
Assiut University, Faculty of Pharmacy, Assiut, Egypt.
GPA: 89.71% (Distinction with Honors), Ranked 7/ 760.

Languages

- Arabic - Native fluency
- English - Very Good
- Dutch - Beginner (level 2.1)

Publications

- **Shorok A. M. Abdelhameed**, Francisco de Azambuja, Tamara Vasović, Nada D. Savić, Tanja Ćirković Veličković and Tatjana N. Parac-Vogt. Regioselective protein oxidative cleavage enabled by enzyme-like recognition of an inorganic metal oxo cluster ligand. ***Nat Commun*** (2023), **14**, 486.

- David E. Salazar Marcano, Nada D. Savić, Kilian Declerck, **Shorok A. M. Abdelhameed** and Tatjana N. Parac-Vogt. Reactivity of metal–oxo clusters towards biomolecules: from discrete polyoxometalates to metal–organic. ***Chem Soc Rev.***, 2023.

- David E. Salazar Marcano, Nada D. Savić, **Shorok A. M. Abdelhameed**, Francisco de Azambuja and Tatjana N. Parac-Vogt. Exploring the Reactivity of Polyoxometalates toward Proteins: From Interactions to Mechanistic Insights. ***JACS Au***, 2023, 3, 4, 978–990.

- **Shorok A.M. Abdelhameed**, Hong Giang T. Ly, Jens Moons, Francisco de Azambuja, Paul Proost, and Tatjana N. Parac-Vogt. Expanding the Reactivity of Inorganic Clusters towards Proteins: Interplay between Redox and Hydrolytic Activity of Ce(IV)-substituted Polyoxometalates as Artificial Protease. ***Chemical science***, 2021,12,10655.

- **Shorok A. M. Abdelhameed**, Laurens Vandebroek, Francisco De Azambuja and Tatjana N. Parac-Vogt. Redox Activity of Ce(IV)- Substituted Polyoxometalates Towards Amino Acids and Peptides. ***Inorganic Chemistry***, 2020, 59, 10569-10577

- Jens Moons, Laura S. Van Rompuy, Alvaro Rodriguez, **Shorok A.M. Abdelhameed**, Wouter Simons, Tatjana N. Parac-Vogt. Hydrolysis of transferrin promoted by a cerium(IV)- Keggin polyoxometalate. ***Polyhedron***, 2019, 170, 570–575.

List of Conferences

- Oral presentation “Redox Behaviour of Ce(IV)-substituted Polyoxometalates Towards Amino Acids and Peptides”. ChemCYS 2020, Blankenberge, Belgium.

- Poster presentation “Polyoxometalates Ligand Enables Regioselective CopperMediated Protein Oxidative Cleavage”. CRF-ChemCYS 2022, Blankenberge, Belgium.