



OPEN Retraction Note: Verbena officinalis (VO) leaf extract as an anti-corrosion inhibitor for carbon steel in acidic environment

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Retraction of: *Scientific Reports* <https://doi.org/10.1038/s41598-024-65266-z>, published online 12 July 2024

The Editors have retracted this Article.

After publication, concerns were raised that the data shown in Figure 12 was previously published in a number of papers with some shared authorship, where the data was described differently e.g.^{1–6}. Given the nature and the extent of this issue the Editors no longer have confidence in the integrity of the data reported in this Article.

None of the Authors responded to the Editors correspondence about this retraction.

References

1. Fouda, A. S. et al. RETRACTED ARTICLE: Anticorrosion Properties of Some Nonionic Surfactants on Carbon Steel in 1 M HCl Environment. *J. Bio. Tribo. Corros.* **5**, 56. <https://doi.org/10.1007/s40735-019-0248-2> (2019).
2. Fouda, A. S., Ismail, M. A., Al-Khamri, A. A. & Abousalem, A. S. Experimental, quantum chemical and molecular simulation studies on the action of arylthiophene derivatives as acid corrosion inhibitors. *J. Mol. Liq.* **290**, 111178. <https://doi.org/10.1016/j.molliq.2019.111178> (2019).
3. Fouda, A. E. S., Ismail, M. A., Al-Khamri, A. A. & Abousalem, A. S. Corrosion inhibition of carbon steel in hydrochloric acid by cationic arylthiophenes as new eco-friendly inhibitors: Experimental and quantum chemical study. *Chin. J. Chem. Eng.* **40**, 197–217. <https://doi.org/10.1016/j.cjche.2020.09.073> (2021).
4. Badr, G. E., Ali, A. & Fouda, A. S. The efficiency of *Ecballium elaterium* extract as green inhibitor for carbon steel corrosion in sulfuric acid. *Int. J. Electrochem. Sci.* **16**(8), 210832. <https://doi.org/10.20964/2021.08.30> (2021).
5. Al-Nami, S. Y. & Fouda, A. E. S. *Kalanchoe blossfeldina* extract as a green corrosion inhibitor for carbon steel in Na2S-polluted NaCl solutions. *Int. J. Electrochem. Sci.* **15**(1), 535–547. <https://doi.org/10.20964/2020.01.78> (2020).
6. Fouda, A. E. S., Abd El-Maksoud, S. A., El-Sayed, E. H., Elbaz, H. A. & Abousalem, A. S. Retracted article: Experimental and surface morphological studies of corrosion inhibition on carbon steel in HCl solution using some new hydrazide derivatives. *RCS Adv.* **11**, 13497–13512. <https://doi.org/10.1039/D1RA01405F> (2011).

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