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**DPPH and superoxide anion assay and isolation of the antioxidant compound from the methanolic extract from the leaves of *Costus Afer* Ker-Gwal**Ibrahim H Doko<sup>1</sup>, Yemi H Gbadegesin<sup>2</sup>, Akinlolu B Fawehinmi<sup>3</sup> and Victor O Fadipe<sup>4,5</sup><sup>1</sup>Raw Materials Research and Development Council, Nigeria<sup>2</sup>Nigerian Institute of Science Laboratory Technology, Nigeria<sup>3</sup>Nigerian Natural Medicine Development Agency, Nigeria<sup>4</sup>Federal Ministry of Science and Technology, Nigeria<sup>5</sup>University of Zululand, South Africa

*Costus Afer* Ker Gwal is traditionally used in African traditional medicine to treat and manage broad spectrum of infectious tropical disease. Apart from the medicinal uses of the plant, it has significant cultural uses such as wrapping of indigenous food items, mat making, and feed to small ruminants. The leaves of *C. Afer* were collected from the Nigerian Natural Medicine Development Agency, Lagos Nigeria. The leaves were dried and extracted separately with methanol and hexane. The extracts were evaluated for antioxidant activity using DPPH and Superoxide Anion radical scavenging assays method. The methanol extract was subjected to column chromatography eluted with dichloromethane-methanol system. The DPPH % RSA value for the methanol and hexane are 84.71 and 18.88 respectively. The methanol extracts has Superoxide Anion value of 28.15. Then harmine was isolated for the first time from the methanol extract with the following spectroscopic data, the molecular formula  $C_{13}H_{12}ON_2$ , MZ 212.1 (M+H)<sup>+</sup> on the basis of its LRMS. 1H-NMR:  $\delta$  8.10 (1H, d, J=5.5 Hz),  $\delta$  7.99 (1H, d, J=8.5Hz),  $\delta$  7.80 (1H, d, J=5.5Hz),  $\delta$  7.04(1H, d, J=2.0 Hz),  $\delta$  6.87 (1H, dd, J=8.5,2.0 Hz),  $\delta$  3.91( 3H, s),  $\delta$  2.76 ( 3H,s) and <sup>13</sup>C-NMR :  $\delta$  162, 144, 142, 138, 122, 114, 112, 96, 56, 29, 29, 24, 20. Literature report indicated harmine to have broad spectrum of biological activities, this tend to validate the extensive use of *Costus Afer* in many traditional medicine.

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