**Nutritional, Antioxidant, Antidiabetic, and Toxicity Assessments of An Herbal Formulation using *in vitro*, *ex vivo*, and *in vivo* Approaches**

**Akingbolabo Daniel Ogunlakin1**\***, Oluwasaanumi Fiyinfoluwa Adekunle1, Mathew O. Ayoola2, Kanadi Ayuba2, Oluwafemi Adeleke Ojo1, Amel Elbasyouni3, Akinbobola Peace Otitoju4, Adeyemi Abdullahi Adegoke5, Oyindamola Esther Awosola6, Victor Ayoola Oye7, Edema Adegboyega Adeleye4, Enitan O. Adesanya8, Mubo Adeola Sonibare5**

1 Phytomedicine, Molecular Toxicology, and Computational Biochemistry Research Laboratory (PMTCB-RL), Department of Biochemistry, Bowen University, Iwo, 232101, Nigeria.

2 Agricultural Science programme, Bowen University, Iwo, 232101, Nigeria.

3 Department of Molecular Biology and Biotechnology, Pan African University for Basic Sciences, Technology, and Innovation, PAUSTI, Kenya.

4 Department of Biochemistry, University of Ibadan, Ibadan. Nigeria.

5 Department of Pharmacognosy, Faculty of Pharmacy, University of Ibadan, Nigeria.

6 Next Era Health, Julius Kadir Street, Ifako-Gbagada, Lagos, Nigeria.

7Anaxon Global (Anaxonwellness), Akinsanya Street, Ojodu Berger, Lagos, Nigeria.

8 Department of Biochemistry, Olabisi Onabanjo University, Sagamu. Nigeria.

\*Corresponding authors: gbolaogunlakin@gmail.com; +2347037883049

**Supplementary Data**

**Table S1**: AAS analysis of BF 2 powder

|  |  |
| --- | --- |
| **Elements** | **BF 2 (ppm)** |
| Zn | ND |
| Mg | 11.625±0.0096 |
| Na | 4.879±0.0012 |
| Pb | 0.788±0.0011 |
| Cd | 0.324±0.0011 |
| Co | 1.011±0.0006 |
| Cu | ND |
| Fe | 2.412±0.0015 |

ND= not detected

**Table S2**: Proximate analysis of BF 2 powder

|  |  |  |
| --- | --- | --- |
| **S/N** | **Proximate content** | **BF 2 (%)** |
| 1 | Ash content | 3.40±0.01 |
| 2 | Moisture contents | 5.5±0.01 |
| 3 | Crude fat | 1.85±0.10 |
| 4 | Crude fibre | 4.45±0.12 |
| 5 | Protein | 26.25±0.12 |
| 6 | Nitrogen Free Extract | 58.55±0.13 |

**Table S3**: Qualitative phytochemical screening of BF 2 powder

|  |  |  |
| --- | --- | --- |
| **S/N** | **Test** | **BF 2** |
| 1 | Phenols | + |
| 2 | Glycosides | - |
| 3 | Terpenoids | ++ |
| 4 | Alkaloids | + |
| 5 | Flavonoids | ++ |
| 6 | Saponins | - |
| 7 | Tannins | - |
| 8 | Anthraquinone | + |

+ = indicates presence of phytochemicals; - = indicates absence of phytochemicals; ++ = shows moderate concentration.