

Pharmacological based study of poly herbal formulation.Rahmat Ali Khan^{1*}, Adnan Khan¹, Mushtaq Ahmed¹, Huda Alkreathy²¹Department of Biotechnology, University of Science and Technology Bannu-28100, KPK, Pakistan²Department of Pharmacy, King Abdul Aziz University, Jeddah, Saudi Arabia

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Letter to Editor

Dear Sir,

Free radical and reactive oxygen species (oxidants) produced from various sources are very dangerous for human health. When number of oxidant inside the cell is increased and antioxidants are decreased then this stage is called oxidative stress, causes different type of endocrinal and neuronal degenerative diseases [1]. Agbor et al. [2] has reported that antioxidant bioactive constituents present in the herbal extract react with free radical and detoxify their behavior. In the present study a poly herbal mixture was prepared from Anthemis pyrethrum, Asparagus racemosus, Asparagus gonocladus and Withania somnifera to evaluate

the antioxidant activities via scavenging of various free radicals. In the present study methanol fraction of the poly herbal extract was prepared and stored at -4°C for further screening. Antioxidant activities was checked using various free radicles scavenging assays including DPPH, ABTS, hydrogen peroxide and phosphomolybdate (total antioxidant assay) and anti-diabetic activities. Results obtained clearly depicts that the herbal mixture of aforementioned extracts significantly reduced the oxidized free radicles without itself oxidation as well as good anti-diabetic activities shown in Table 1. Poly herbal extract also revealed marked inhibition against various microbes (Table 2).

Table 1. Antioxidant and anti-diabetic profile of PHBE. Each value in the table is represented as mean \pm SD (n=3).

Fractions	Concentration	DPPH free radical scavenging activity	Hydrogen peroxide radical scavenging activity	Total antioxidant capacity	ABTS scavenging	A-amylase inhibition	B-Glycosidase
ASA	0.37	65.1 \pm 4.3	69.1 \pm 7.2	60.2 \pm 6.4	59.1 \pm 8.9	62.2 \pm 6.3	59.6 \pm 5.3
	0.7	78.3 \pm 6.2	83.9 \pm 2.1	76.1 \pm 6.9	64.2 \pm 6.4	74.3 \pm 6.7	66.4 \pm 5.2
	1.5	84.4 \pm 3.7	90.7 \pm 5.8	83.4 \pm 8.1	77.5 \pm 6.2	81.1 \pm 5.2	76.2 \pm 4.8
	3	93.2 \pm 5.4	95.2 \pm 6.3	90.3 \pm 7.3	86.3 \pm 7.1	90.5 \pm 4.8	89.9 \pm 4.9
PHBE	0.37	50.0 \pm 2.8	50.4 \pm 5.2	39.7 \pm 4.8	45.6 \pm 5.8	40.3 \pm 3.5	45.7 \pm 5.1
	0.75	65.1 \pm 5.1	69.1 \pm 5.1	49.5 \pm 3.8	52.8 \pm 6.4	55.2 \pm 7.0	59.5 \pm 3.7
	1.5	78.5 \pm 3.5	82.4 \pm 4.7	67.8 \pm 5.2	67.4 \pm 7.2	68.4 \pm 6.5	62.3 \pm 4.8
	3	88.3 \pm 3.2	85.2 \pm 4.2	78.3 \pm 5.4	75.3 \pm 6.7	77.7 \pm 7.2	75.1 \pm 7.1

Table 2. Zone of inhibition (mm) of anti-microbial activities of PHBE.

Fractions	Concentration	Bacillus subtilis	Streptococcus aureus	Klebsiella pneumonia	Pseudomonas aeruginosa
Streptomycin	0.37	15.2 \pm 1.2	16.1 \pm 2.1	8.4 \pm 1.5	13.2 \pm 1.3
	0.75	18.4 \pm 1.4	23.1 \pm 1.8	13.3 \pm 2.1	18.4 \pm 2.0
	1.5	22.1 \pm 3.4	25.2 \pm 1.5	16.8 \pm 3.1	20.2 \pm 2.1
	3	25.4 \pm 3.0	29.7 \pm 2.0	29.6 \pm 2.6	25.6 \pm 3.4
PHBE	0.37	9.6 \pm 0.9	10.4 \pm 1.7	7.4 \pm 0.9	5.8 \pm 0.7
	0.75	11.8 \pm 1.1	12.2 \pm 1.4	9.8 \pm 1.2	9.4 \pm 2.3
	1.5	14.4 \pm 2.0	14.4 \pm 2.0	11.1 \pm 2.1	12.5 \pm 1.5
	3	15.1 \pm 1.6	16.3 \pm 1.7	13.4 \pm 2.4	15.2 \pm 1.7

Our results shows some resemblances with the analysis of Khan et al. [3] reported that, the medicinal plants have highly scavenge the free radicals. The antioxidants potential of methanol extract of this herbal mixture could be due to the presence of phenolic and polyphenolic compounds in these medicinal plants which decrease the free radicals that cause the oxidative stress. The results obtained by Kilani et al. [4] and Nile and Keum [5] also support the results obtained from our experiments. Further research is needful to investigate and isolate the potentially important bioactive compounds from these plants that can be used and employed as antioxidants [6].

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