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APPLICATION
SESAME BAR ENRICHED
WITH OLIVE FRUIT ANTIOXIDANTS.



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INTRODUCTION

In cooperation with



a sesame bar enriched with natural encapsulated olive fruit antioxidants was produced.

MEDOLIVA POWDER was used in this application, a natural olive fruit antioxidant in powder form containing 12% natural olive fruit antioxidants encapsulated in maltodextrin. Medoliva is produced by POLYHEALTH S.A. (www.polyhealth.gr) using cryogenic freeze drying technology with no organic solvent involvement whatsoever.

A concentration of 1000 ppm of this antioxidant powder was added on the basis of finish product after dilution and homogenization of the required quantity of the natural antioxidant powder in 100ml distilled water. The produced solution was then added in the honey at the last point of boiling, before the addition and incorporation of sesame.

After the formation of the sesame bars two kind of samples were taken, one with polyphenol addition and one control sample without any addition of olive fruit antioxidant (control sample), both samples prepared from the same raw materials at the same production day.

Both samples were measured for Total Antioxidant Activity by DPPH method as this is described in the paper by Thaipong K., Boonprakob U., Crosby K., Cisneros-Zevallos L., Byrne H.D., 2006. Comparison of ABTS, DPPH, FRAP and ORAC assays for estimating antioxidant activity from guava fruit extracts. J. Food Comp. Anal. 19, 669-675 and elsewhere and the important IC50 value was graphically determined.

Before the measurement, the two sample were initially processed with liquid nitrogen and then pulverized into a very thin powder in order to optimize the results of the measurements

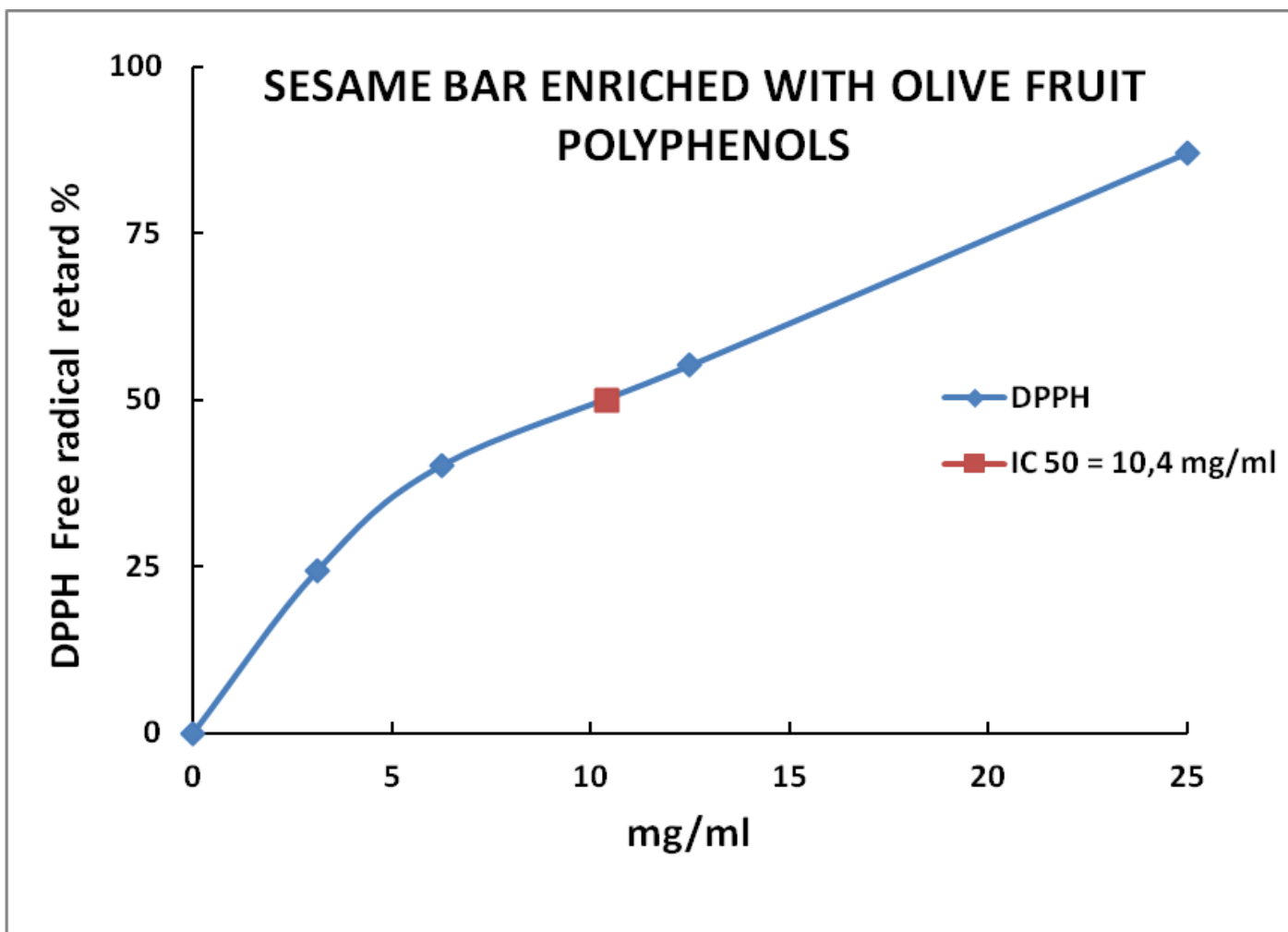
The Figures 1,2 and the relevant attached Tables present the results of TAC (Total Antioxidant Activity), figure 1 for sesame bar enriched with the olive fruit polyphenols, and figure 2 for the control sample prepared with no natural antioxidant.

The logo for PolyHealth, featuring the word 'PolyHealth' in a green, cursive font, followed by a green circular icon containing a stylized leaf or drop shape.

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SESAME BAR ENRICHED WITH OLIVE FRUIT POLYPHENOLS-PROCESSING OF RAW DATA OF THE MEASUREMENT														
A/A	µg/ml	A	B	C	D	E	AVG D & E	A – (AVG OF D & E)	B-(AVG OF D &E)	C--(AVG OF D &E)	AVG OF A,B,C	SD	SD/AVG	FREE RADICAL RETARD %
1	25	0,23	0,248	0,24	0,062	0,064	0,063	0,167	0,185	0,177	0,176	0,01	5,11	87,04
2	12,5	0,64	0,625	0,632	0,022	0,023	0,0225	0,6175	0,6025	0,6095	0,610	0,01	1,23	55,19
3	6,25	0,82	0,818	0,805	0	0	0	0,82	0,818	0,805	0,814	0,01	1,00	40,17
4	3,12	1,025	1,033	1,029	0	0	0	1,025	1,033	1,029	1,029	0,00	0,39	24,39
C	0	1,346	1,352	1,385							1,361			0,00

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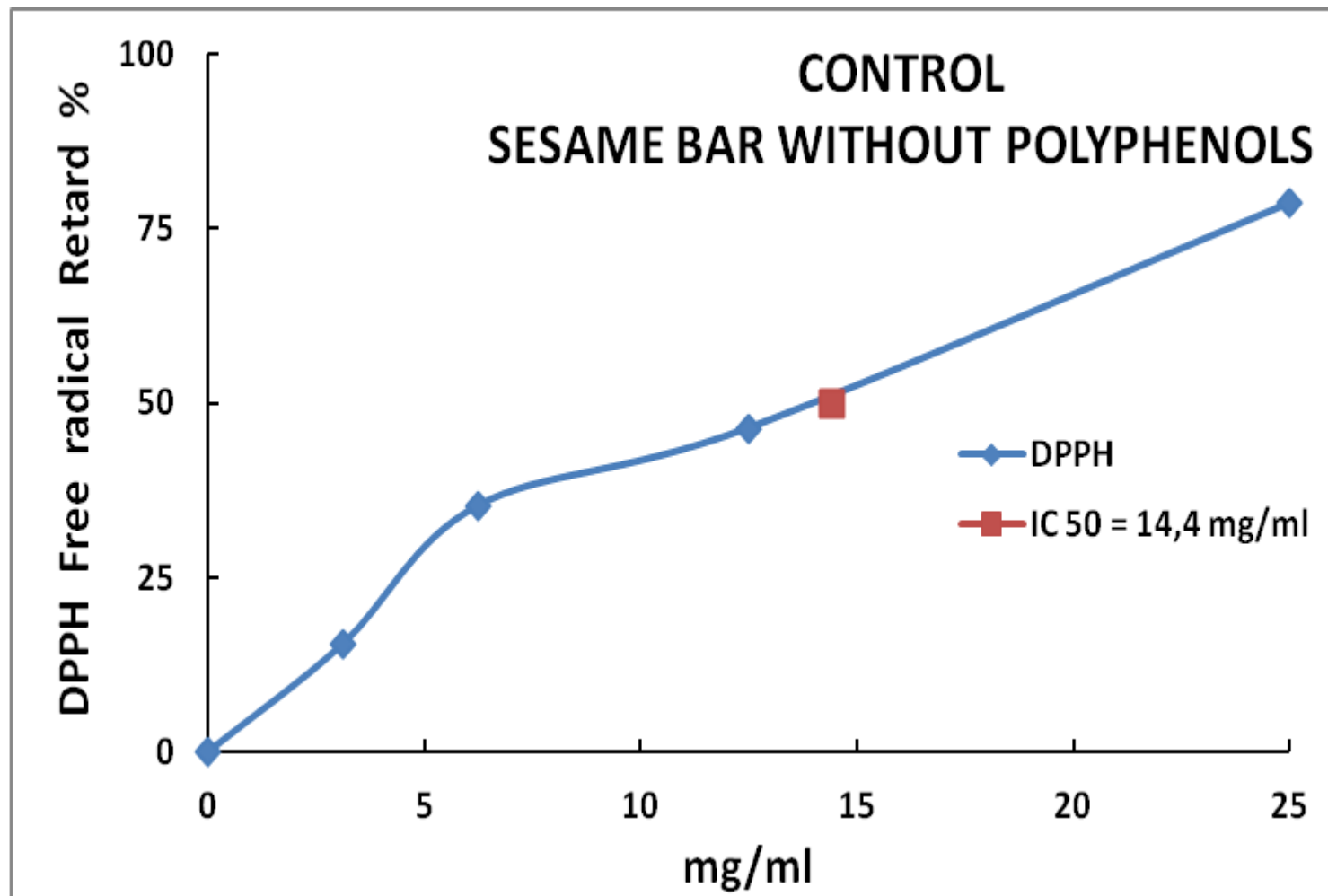


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SESAME BAR WITHOUT OLIVE FRUIT POLYPHENOLS (CONTROL SAMPLE)-PROCESSING OF RAW DATA OF THE MEASUREMENT

A/A	µg/ml	A	B	C	D	E	AVG D & E	A – (AVG OF D &E)	B-(AVG OF D &E)	C--(AVG OF D &E)	AVG OF A,B,C	SD	SD/AVG	FREE RADICAL RETARD %
1	25	0,333	0,335	0,338	0,05	0,04	0,045	0,288	0,29	0,293	0,290	0,00	0,87	78,67
2	12,5	0,74	0,751	0,755	0,02	0,02	0,02	0,72	0,731	0,735	0,729	0,01	1,07	46,46
3	6,25	0,891	0,883	0,896	0,01	0,01	0,01	0,881	0,873	0,886	0,880	0,01	0,75	35,34
4	3,12	1,147	1,145	1,158	0	0	0	1,147	1,145	1,158	1,150	0,01	0,61	15,50
C	0	1,346	1,352	1,385							1,361			0,00

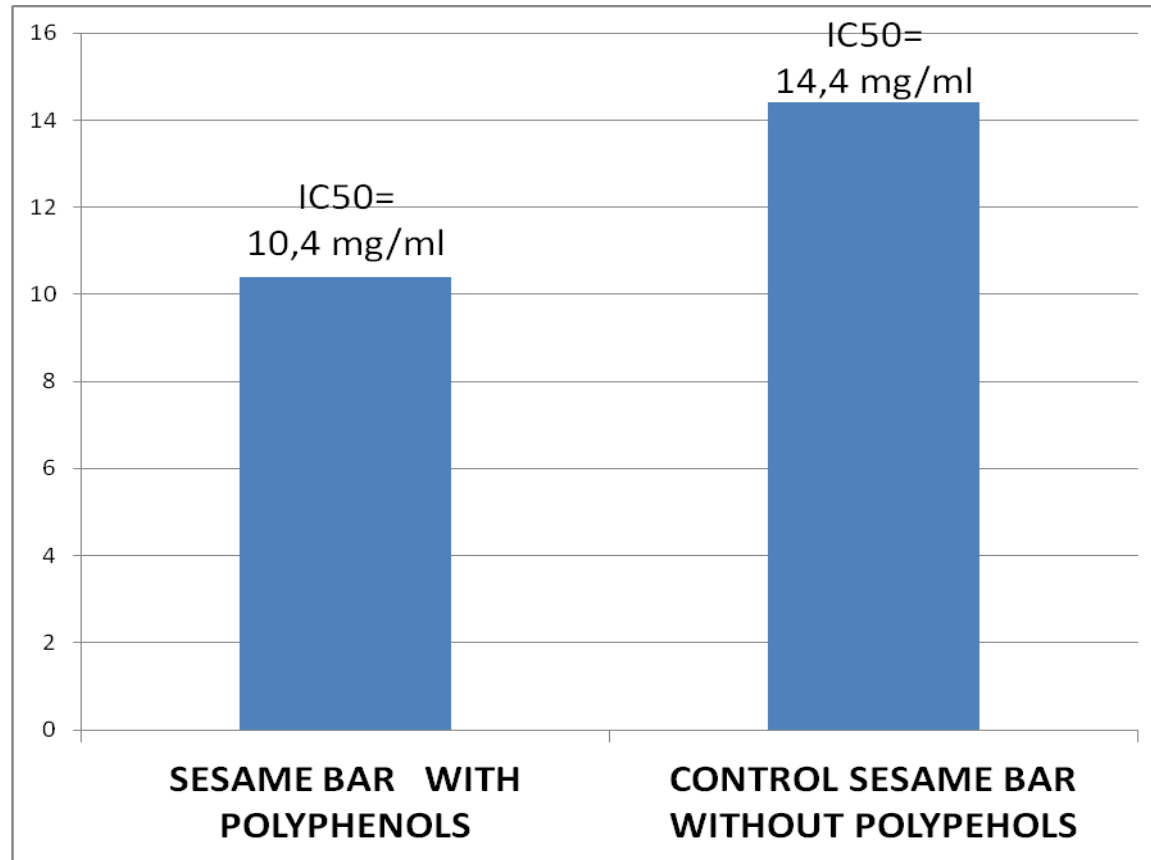
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In Figure 3 which follows, we observe that the IC50 parameter for the sesame bar enriched with encapsulated olive fruit polyphenols was found to be equal to 10,4 mg/ml while for the control sample the corresponding IC50 value was found to be significantly higher at 14,4 mg/ml

Figure 3.



CONCLUSION: Addition of natural olive fruit polyphenols in sesame bars at a concentration level of 1000 ppm as per the mass of finished product, increases the antioxidant capacity by 30%, without affecting the taste and the color of the final product. This new product offers significant health benefits to the consumers by helping to eliminate free radicals from the body.

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