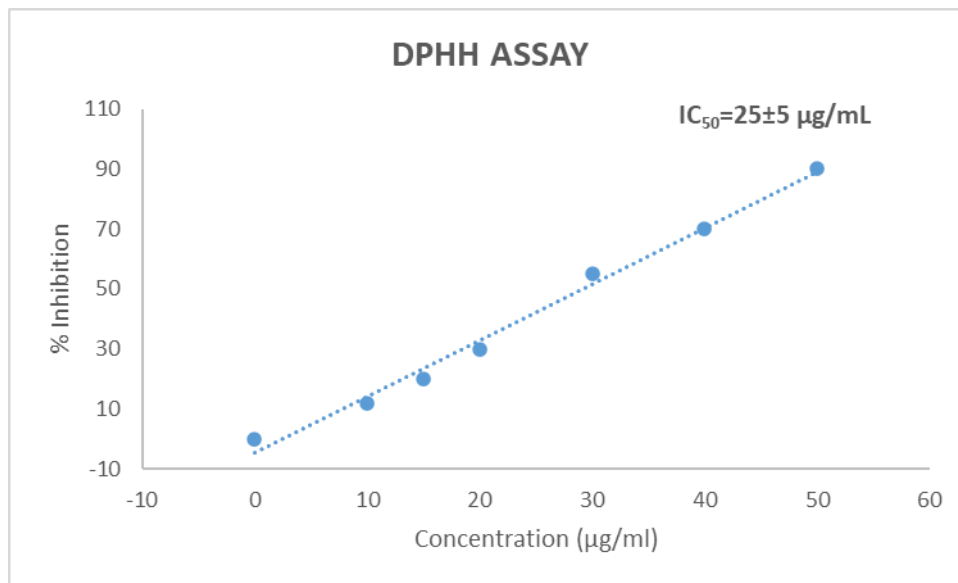
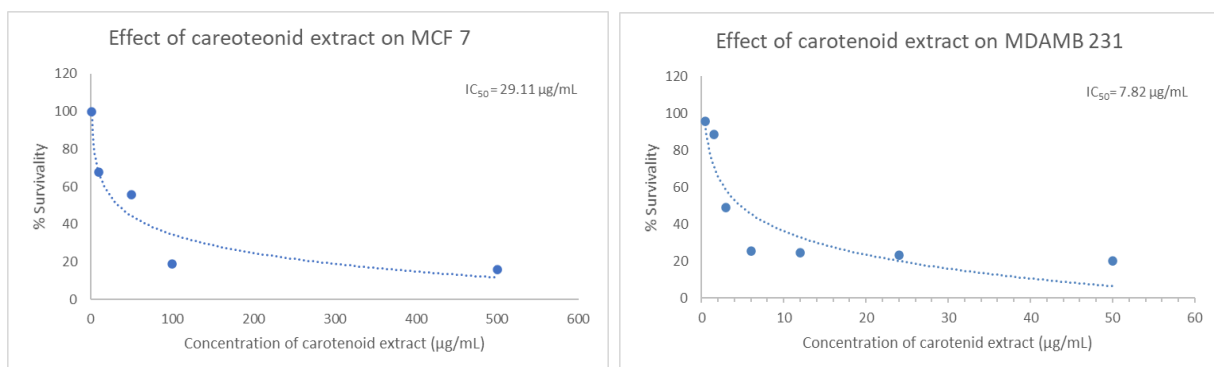


### Supplementary tables and Figures:



**Supplementary Figure 1.** Scatter plot analysis of DPPH assay showing the  $IC_{50}$  value of carotenoid extract.



**Supplementary Figure 2.** Representative result of MTT assay showing significant dose-dependent inhibition of proliferation by carotenoid extract in breast cancer cell line MCF7 and MDA-MB-231. Experiments were repeated twice,  $IC_{50}$  values were calculated, and after statistical analysis, were found to be  $29.35\pm0.82 \mu\text{g/ml}$  ( $IC_{50}$  for MCF7) and  $7.85\pm0.21 \mu\text{g/ml}$  ( $IC_{50}$  for MDA-MB-231).

**Supplementary Table 1.**

<b>Strain</b>	<b>Inhibition zone diameter (mm)</b>	<b>% Inhibition</b>
<i>Staphylococcus aureus</i> (MTCC 1430)	12.5±0.2	69.4
<i>Bacillus firmus</i> (MTCC 488)	14.3±0.2	79.4
<i>Bacillus subtilis</i> (MTCC 121)	13.3±0.3	74.07
<b><i>Escherichia coli</i> (MTCC 1610)</b>	17.6±0.3	90.5
<i>B. licheniformis</i> (MTCC 429)	13.4±0.2	83.75
<i>Listeria monocytogenes</i> (MTCC 839)	10.2±0.3	59.8
<i>B. thuringiensis</i> (MTCC 1953)	12.5±0.5	69.4
<i>Micrococcus luteus</i> (MTCC 106)	10±0.3	55.4
<b><i>Pseudomonas aeruginosa</i> (MTCC 1934)</b>	15.6±0.4	82.1
<i>Candida albicans</i> (MTCC 183)	7±0.1	41.5
<i>Saccharomyces cerevisiae</i> (MTCC 170)	7.1±0.2	41.9
<i>Fusarium oxysporum</i> (MTCC 2773)	--	--
<i>Asperigillus niger</i> (MTCC 281)	--	--

**Supplementary Table 1.** Showing antimicrobial property of the extracted lipidic carotenoids. One way ANOVA results showed that the difference between the means were significant as  $p \leq 0.05$ .