

Supplementary Table S1: Antioxidant activities of kombucha tea

Name of fruits and vegetables	Active ingredients	Biological assays	Findings	Ref.
In vitro studies				
■ Black tea	■ Polyphenols: theaflavin, thearubigin, caffeine	■ DPPH, ABTS, and hydroxyl radicals scavenging assay ■ NO scavenging assay ■ FRAP assay	■ The free radical scavenging ability of kombucha tea had highest effect on the 7 th day of fermentation and showed the decrease in IC ₅₀ values by 38.4% to 45.8% on the 21 st day. ■ The reducing power of kombucha tea significantly increased by 35% and 44% in the 14 th and 21 st day of fermentation, respectively.	[18]
■ Black Ceylon, green, white, and red teas	■ Phenolic compounds ■ Flavonoids	■ DPPH radical scavenging assay ■ FRAP assay	■ Green tea kombucha showed the highest antioxidant property when compared with kombuchas made from other teas. ■ The highest DPPH scavenging activity of all kombuchas was observed at the 1 st day of fermentation, then it became lower with the time of fermentation. ■ FRAP of the kombuchas increased after fermentation for 7 days. However, it decreased when observed at 14 th day of fermentation.	[43]
■ Black tea	■ Polyphenols: theaflavin, thearubigin ■ Organic acids: acetic acid, gluconic acid, D-saccharic acid 1,4-lactone	■ DPPH, hydroxyl, and superoxide radicals scavenging assay	■ The free radical scavenging activities of kombucha on DPPH, hydroxyl and superoxide radicals increased by 18.9%, 17.2% and 14.97%, respectively.	[46]
■ Black tea	■ Phenolic compounds: gallic acid, catechin, (-)-epicatechin, caffeine, P-coumaric acid, ferulic acid, rutin hydrate, taxifolin, trans-cinnamic acid, 3-tert-butyl-4-hydroxybenzoic acid	■ DPPH scavenging assay	■ DPPH scavenging activity was associated with the phenolic content in the samples. ■ The ethyl acetate fractions showed highest inhibitory effect against DPPH with IC ₅₀ value of 9 µg/mL. ■ Whereas, the aqueous fractions had low activity with IC ₅₀ value of >50 µg/mL.	[47]
■ Black tea	■ Phenolic compounds	■ Copper (Cu ²⁺)-induced lipid peroxidation inhibitory effect ■ DPPH, hydroxyl, and superoxide radicals scavenging assay	■ DPPH, hydroxyl, and superoxide radicals scavenging activities of traditional and modified kombuchas (fermented with <i>Gluconacetobacter</i> sp.) teas were found to increase during the fermentation process. ■ The kombucha samples could inhibit lipid peroxidation by prolonging the lag phase.	[48]
■ Black and green teas	■ Phenolic compounds: theaflavin, thearubigin, Catechin, callocatechin 3- <i>O</i> -gallate, epigallocatechin 3- <i>O</i> -gallate, catechin 3- <i>O</i> -gallate, catechin 5- <i>O</i> -gallate, quercetin glycosides 5- <i>O</i> -galloyquinic acid, 4-coumaroylquinic acid derivatives, caffeoylquinic acid derivatives	■ ABTS radicals scavenging assay	■ Black tea kombucha (13.59 µmol TE/mL) showed higher antioxidant capacity than green tea kombucha (8.22 µmol TE/mL).	[49]
■ Black and green teas	■ Phenolic compounds	■ DPPH, hydroxyl, and superoxide radicals scavenging assay ■ FRAP assay	■ Green tea kombucha showed higher scavenging abilities against DPPH, hydroxyl, and superoxide radicals than black tea kombucha. ■ Black tea kombucha had higher FRAP than green tea kombucha.	[50]
■ Green tea	■ Phenolic compounds	■ DPPH and superoxide radicals scavenging assay	■ Green tea kombucha had higher scavenging activity against DPPH radicals and superoxide anion than unfermented green tea.	[51]
■ Black, green, and oolong teas	■ Phenolic compounds ■ Organic acids: acetic acid, gluconic acid, D-saccharic acid 1,4-lactone, glucuronic acid, ascorbic acid	■ DPPH scavenging assay	■ DPPH scavenging activity of green, oolong, and black tea kombuchas was significantly elevated after 3 days of fermentation and the ability was increased up to 2.642, 2.582, and 0.435 mg GAE/mL at 15 th , 9 th and 3 rd day of fermentation, respectively.	[52]

<p>■ Chinese black (CBT), oolong (COT), green teas (CGT), and Sri Lankan black tea (SLBT)</p>	<p>■ Phenolic compounds: epicatechin isomers: (-)-epicatechin (EC), (-)-epicatechin-3-gallate (ECG), (-)-epigallocatechin (EGC), (-)-epigallocatechin-3-gallate (EGCG)</p>	<p>■ DPPH radical scavenging assay ■ ORAC assay</p>	<p>■ SLBT kombucha showed the highest DPPH radical scavenging and ORAC activities. ■ ORAC of SLBT and CGT kombuchas showed significant increase in 1st day of fermentation and then slightly change until 7th day of fermentation.</p>	<p>[53]</p>
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