Supplementary Materials

Phytosynthesis of Silver Nanoparticle (AgNPs) Using Aqueous Leaf Extract of *Knoxia Sumatrensis* (Retz.) DC. and Their Multi-Potent Biological Activity: An Eco-Friendly Approach

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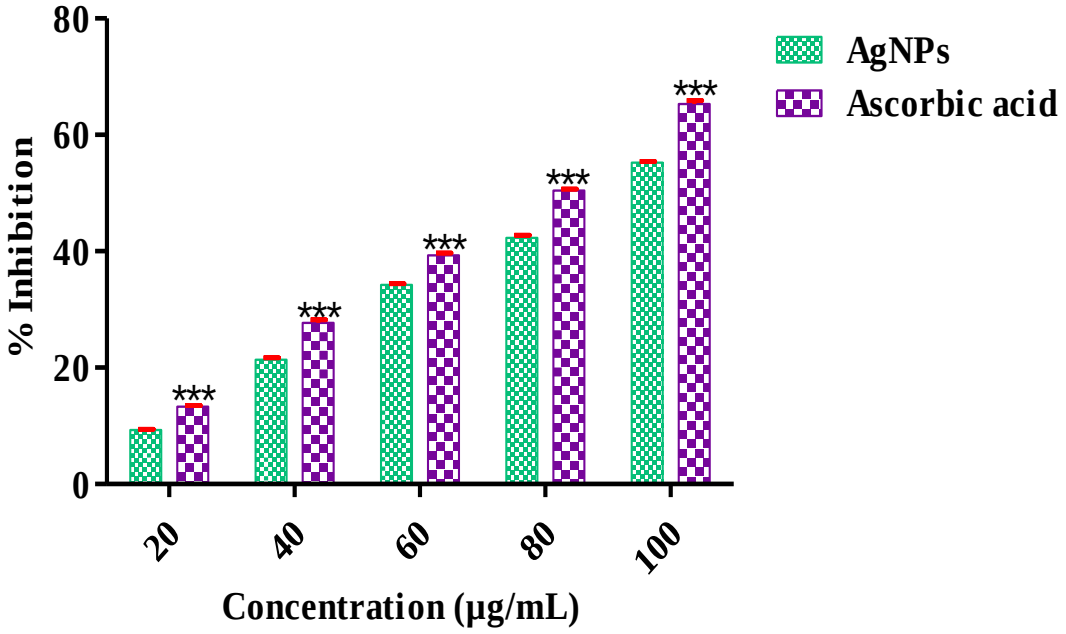

Figure S1. Antioxidant activity of AgNPs synthesized using *K. sumatrensis* aqueous leaf extracts (*Ks*-ALE). (**a**) DPPH radical scavenging activity. The values are expressed as mean ± SD values and analyzed by Two-Way analysis of variance (ANOVA). Asterisk (***) indicates significant different among treatments with respect to control ($p < 0.001$).

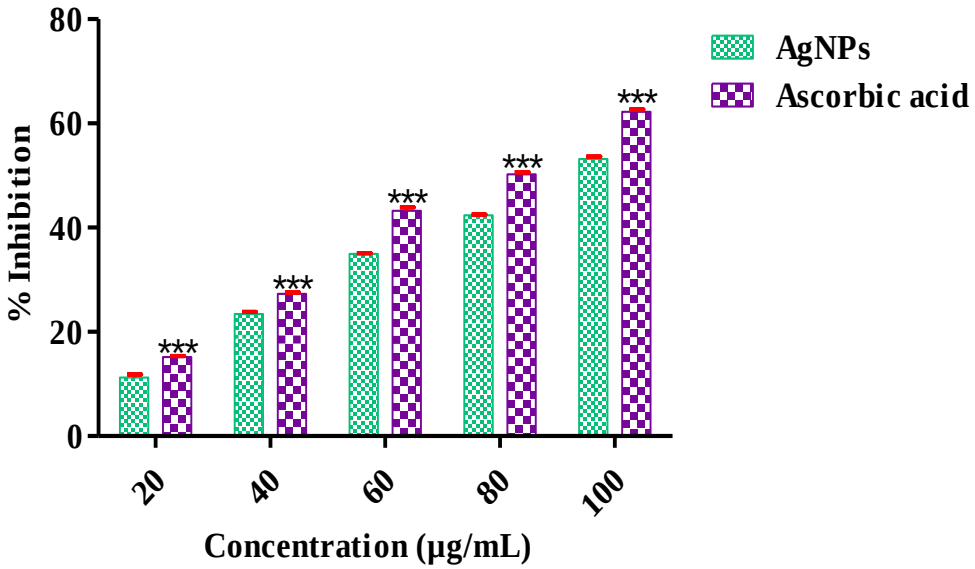

Figure S2. Antioxidant activity of AgNPs synthesized using *K. sumatrensis* aqueous leaf extracts (*Ks*-ALE) (**b**) ABTS radical scavenging activity. The values are expressed as mean ± SD values and analyzed by Two- Way analysis of variance (ANOVA). Asterisk (***) indicates significant different among treatments with respect to control ($p < 0.001$).

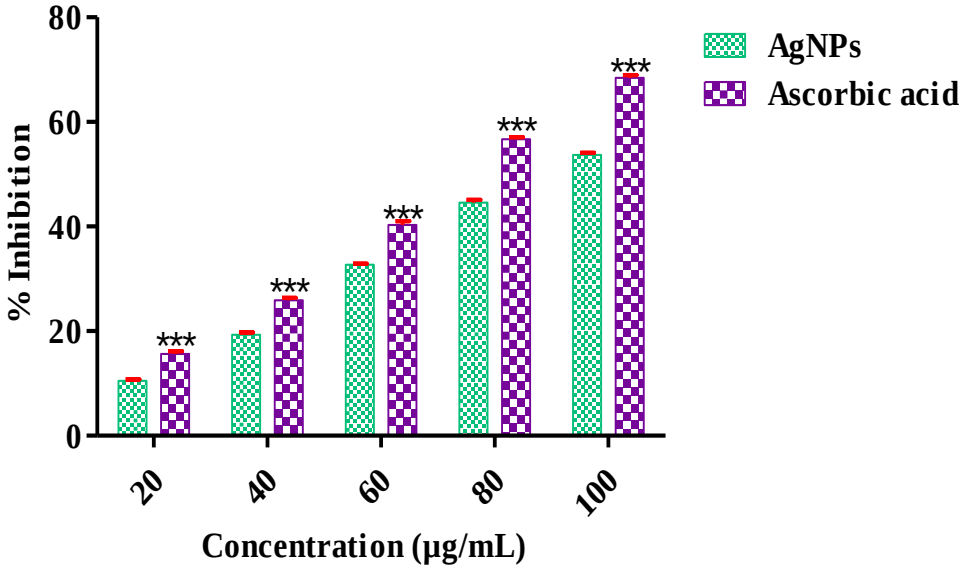

Figure S3. Antioxidant activity of AgNPs synthesized using *K. sumatrensis* aqueous leaf extracts (*Ks*-ALE) (**c**) Hydroxyl scavenging activity. The values are expressed as mean ± SD values and analyzed by Two-Way analysis of variance (ANOVA). Asterisk (***) indicates significant different among treatments with respect to control ($p < 0.001$).

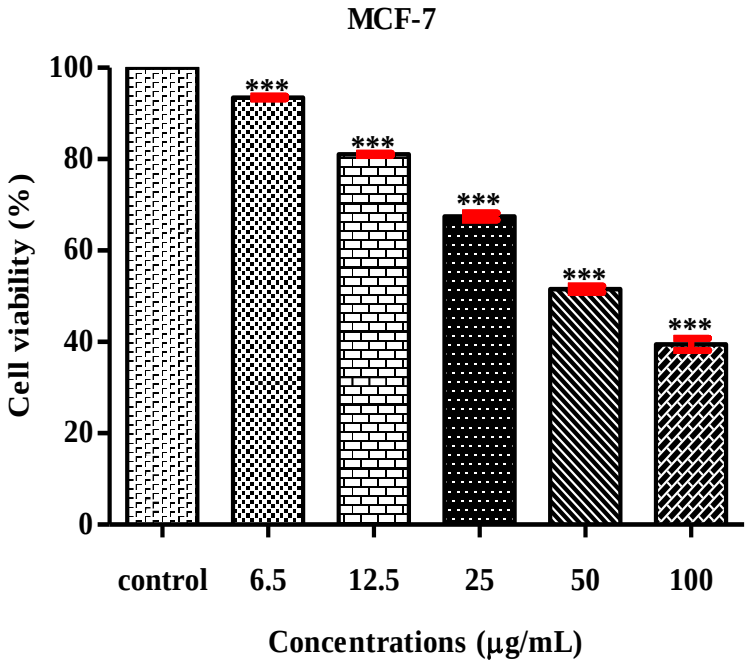

Figure S4. MTT assay confirming the Anti-proliferative effects of AgNPs using aqueous leaf extracts of *K. sumatrensis* (*Ks*-ALE) against MCF-7 cell line. The values are expressed as mean ± SD values and analyzed by One - way analysis of variance (ANOVA). Asterisk (***) indicates significant different among treatments with respect to control($p < 0.001$).

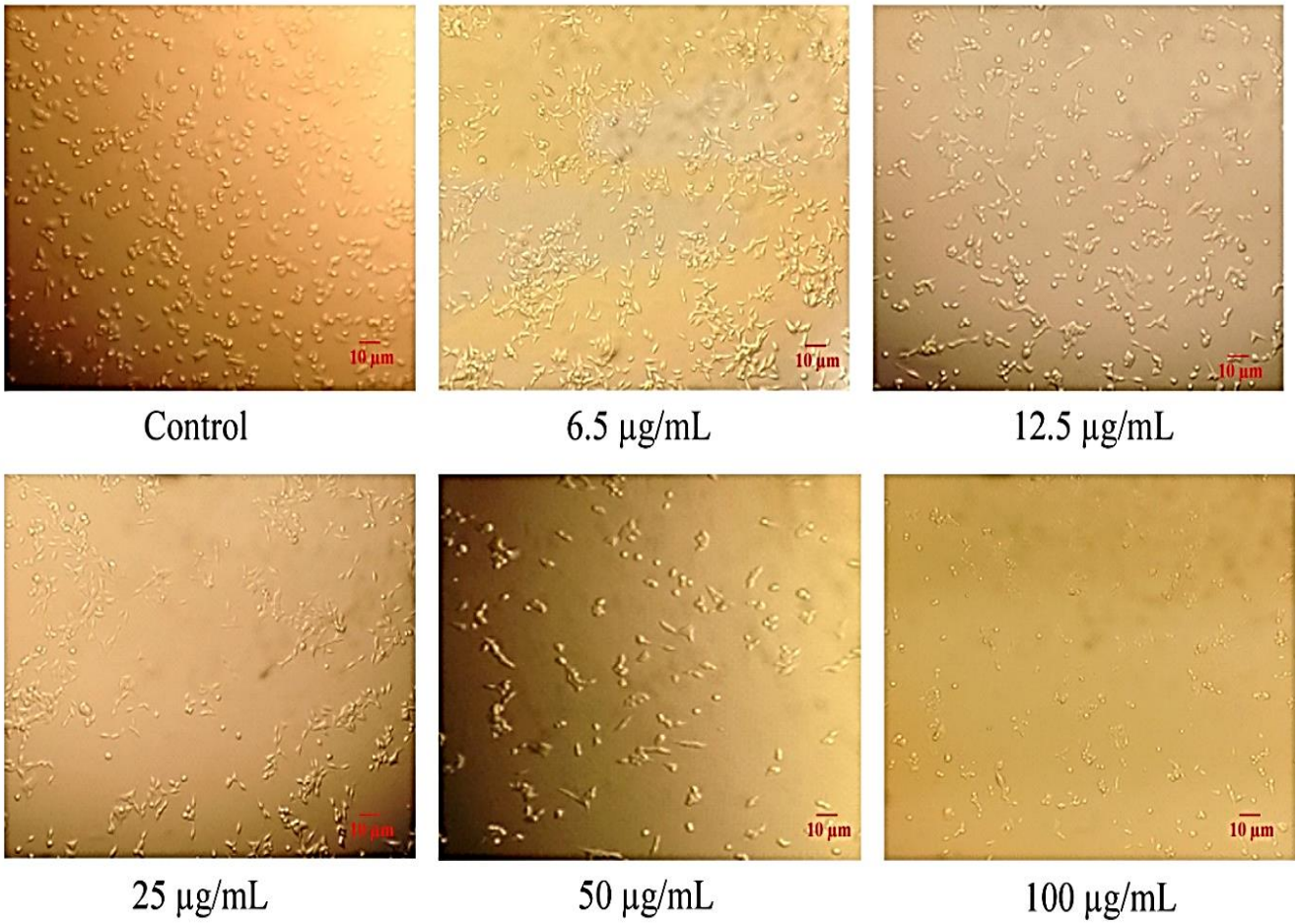

Figure S5. Anti-proliferative observed from confocal microscope (340 pixel); Control and various concentrations (6.5, 12.5, 25, 50 and 100 µg/mL) of *K. sumatrensis* aqueous leaf extract (*Ks*-ALE) of AgNPs treated on breast cancer cells (MCF-7).

Table S1. Larvicidal activity of *K. sumatrensis* aqueous leaf extract (*Ks*-ALE) and Synthesized AgNPs against *Aedes aegypti.*

Time (Hour)	Samples	LC_{50} (mg/mL) (LCL-UCL)	LC_{90} (mg/mL) (LCL-UCL)	χ^2	*Df*
12	Plant extract	37.36 (29.08–66.62)	67.29 (48.42–137.29)	1.79	13
	AgNPs	21.81 (18.15–29.49)	51.72 (39.47–86.84)	1.58	13
24	Plant extract	26.01 (21.88–35.34)	52.35 (40.70–82.84)	1.32	13
	AgNPs	9.56 (6.31–11.82)	27.70 (23.92–34.52)	1.09	13
48	Plant extract	16.06 (13.05–19.47)	41.56 (33.42–60.71)	0.76	13
	AgNPs	4.46 (3.30–5.42)	17.62 (15.21–21.54)	4.46	13

LC_{50}: Lethal concentration kills 50% of the exposed larvae, LC_{90}: Lethal concentration kills 90% of the exposed larvae, LCL: Lower confidence limit, UCL: Upper confidence limit, χ^2 Chi-square value, *df*; degrees of freedom.

Table S2. Larvicidal activity of *K. sumatensis* aqueous leaf extract (*Ks*-ALE) and synthesized AgNPs against *Anopheles stephensi.*

Time (Hour)	Samples	LC_{50} (mg/mL) (LCL-UCL)	LC_{90} (mg/mL) (LCL-UCL)	χ^2	*Df*
12	Plant extract	28.13 (23.92–37.23)	50.87 (40.47–75.78)	1.38	13
	AgNPs	16.86 (13.76–20.77)	43.76 (34.70–66.30)	1.04	13
24	Plant extract	24.24 (20.34–32.92)	30.75 (26.78–37.61)	0.867	13
	AgNPs	5.04 (7.73–11.36)	24.30 (20.84–31.14)	2.15	13
48	Plant extract	15.54 (12.32–18.99)	42.05 (33.54–62.83)	0.812	13
	AgNPs	3.68 (0.99–7.70)	18.94 (16.47–23.00)	3.94	13

LC_{50}: Lethal concentration kills 50% of the exposed larvae, LC_{90}: Lethal concentration kills 90% of the exposed larvae, LCL: Lower confidence limit, UCL: Upper confidence limit, χ^2 Chi-square value, *df*; degrees of freedom.

Table S3. Larvicidal activity of *K. sumatrensis* aqueous leaf extract (*Ks*-ALE) and synthesized AgNPs against *Culex quinquefasciatus.*

Time (Hours)	Samples	LC_{50} (mg/mL) (LCL-UCL)	LC_{90}(mg/mL) (LCL-UCL)	χ^2	*Df*
12	Plant extract	25.06 (21.45–32.37)	48.85 (38.97–72.17)	1.19	13
	AgNPs	11.25 (8.47–13.38)	29.28 (25.29–36.44)	1.65	13
24	Plant extract	20.68 (17.33–26.92)	49.06 (38.03–78.35)	0.93	13
	AgNPs	2.60 (3.24–5.81)	19.30 (16.65–23.78)	3.91	13
48	Plant extract	10.99 (6.99–13.72)	34.60 (28.52–47.88)	0.85	13
	AgNPs	0.40 (6.64–3.98)	15.83 (13.48–19.51)	2.62	13

LC_{50}: Lethal concentration kills 50% of the exposed larvae, LC_{90}: Lethal concentration kills 90% of the exposed larvae, LCL: Lower confidence limit, UCL: Upper confidence limit, χ^2 Chi-square value, *df*; degrees of freedom.