APPENDICES

List of presentations related to this study

1. Mohd Yusri, M.A.Y., Abu Hassan, M.H., Azhari, S. "Synthesis and characterization of gold nanoparticles using Turkevich method". Oral presentation at 7th International Conference of Young Scientist (ICYC2019), Bayview Hotel, Georgetown, Penang. 13-15 August 2019
2. Mohd Yusri, M.A.Y., Abu Hassan, M.H., Azhari, S. "Evaluation of glutathione disulfide-functionalized gold nanoparticles based sensor for detection of human chorionic gonadotropin". Oral presentation at International Seminar of Islam and Science (SAIS2019), Faculty of Syariah and Law, USIM. 31 October 2019
3. Mohd Yusri, M.A.Y., Abu Hassan, M.H., Azhari, S. "Hydrodynamic sizing of citrate-reduced gold colloid using dynamic light scattering analysis". Oral presentation at Postgraduate Seminar of Science and Technology 2019 (KoSiST2019), Faculty of Science and Technology, USIM. 6 November 2019. Awarded Best Presenter for Health Sciences and Technology Category.

List of publications related to this study

1. Mohd Yusri, M.A.Y., Abu Hassan, M.H., Azhari, S. (2020) "Assessment of Disulfide-linked Gold Nanoparticles as Colorimetric Sensor for Human Chorionic Gonadotropin". *Malaysian Journal of Science, Health and Technology*. 5(1)
2. Mohd Yusri, M.A.Y., Abu Hassan, M.H., Azhari, S. "Evaluation of glutathione disulfide-functionalized gold nanoparticles based sensor for detection of human chorionic gonadotropin". *E-Proceedings. Contemporary Issues: Islam & Science*. 396-403.

Example calculation particle size (Equation 1)

$$d = \exp\left(3.55\ \frac{A_{SPR}}{A_{450\,nm}} - 3.11\right)$$

Using UV-Vis spectrum from [$AuCl_3$] = 1.0 mM, [NaCitrate] = 1.0%, T = 100%, A_{SPR} = 3.1296, $A_{450\,nm}$ = 1.852526

$$d = \exp\ (\ 3.55\ \frac{3.1296}{1.8525} - 3.11)$$

$$d = \exp(3.55\ \times 1.6894 - 3.11)$$

$$d = \exp\ (2.8873)$$

$$d = 17.9448\ nm$$

Example calculation interference percentage (Equation 17)

$$\%\ interference = \left|\frac{Abs_{standard} - Abs_{test}}{Abs_{standard}}\right| \times 100\%$$

Using 100 µl of 0.1 ppm NaCl,

Absorbance test = 0.3171

Absorbance after 100 µl of 0.1 ppm NaCl added = 0.2462

$$\%\ interference = \left|\frac{0.3171 - 0.2462}{0.3171}\right| \times 100\%$$

$$\%\ interference = |\ 0.2236\ |\ \times 100\%$$

$$\%\ interference = 22.36\%$$