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**KP09. PHYTOCHEMICAL CONSTITUENTS AND ANTIOXIDANT ACTIVITY OF
GARCINIA PARVIFOLIA MIQ.**

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A phytochemical study has been carried out to isolate secondary metabolites from the stem bark of *Garcinia parvifolia* Miq. Soxhlet extraction process was performed using different polarity of solvents starting from *n*-hexane, ethyl acetate and methanol to afford the crude extracts. Fractionation and purification on the crude extracts were done by vacuum liquid chromatography (VLC) and column chromatography (CC) techniques. The chemical compounds obtained were elucidated by infrared (IR) and nuclear magnetic resonance (1D NMR) spectroscopy. Three compounds were isolated and identified as β -sitosterol, 1,6,7-trihydroxy-3-methoxyxanthone and 3,8''-binaringenin. The free-radical scavenging activity of the crude extracts were determined by the 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay. The ethyl acetate extract was found to be the most active free radical scavenger with IC₅₀ value of 4.2 ppm, followed by methanol extract (IC₅₀ 96 ppm) and petroleum ether extract (IC₅₀ 200 ppm).

Keywords: *Garcinia parvifolia* Miq., β -sitosterol, 1,6,7-trihydroxy-3-methoxyxanthone, 3,8''-binaringenin, DPPH

**KP10. METAL-FREE CARBON NITRIDE AS A FLUORESCENCE SENSOR FOR
NITRATE IONS**

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In this study, a metal-free carbon nitride (CN) was investigated for the first time as a potential fluorescence sensor for detection of nitrate ions (NO₃⁻). The CN was prepared through thermal polymerization of urea precursor at 823 K and characterized by diffuse reflectance ultraviolet-visible (DR UV-vis), Fourier transform infrared (FTIR), and fluorescence spectroscopies. The DR UV-Vis spectrum confirmed that CN could absorb light up to 430 nm. On the other hand, the FTIR spectrum revealed the presence of graphitic CN single and double bond characters in the 800-1700 cm⁻¹ region. From the fluorescence spectroscopy, two excitation peaks at 278 and 369 nm were observed due to the presence of N=C and N-C groups, respectively. The fluorescence sensor capability of the CN was then investigated using different concentrations of NO₃⁻ (300-1800 μ M). It was confirmed that the intensity of the emission site excited at either 278 or 369 nm was quenched linearly with the concentrations of the NO₃⁻. The Stern-Volmer plots showed that the quenching rate for N=C and N-C was 210⁻⁴ and 110⁻⁴ μ M⁻¹, respectively. These results suggested that CN might act as a fluorescence sensor for NO₃⁻.

Keywords: Carbon nitride; fluorescence sensor; nitrate ions; Stern-Volmer plot; quenching rate

**KP11. Synthesis and Characterization of Amphiphilic Triazole Ligand and its Complex for
Potential Application in Phosphorescent Temperature Sensor materials**

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Phosphorescent materials have attracted much attention due to their promising applications in sensors, display, and optical imaging. Extensive studies have reported on trinuclear gold (I) complexes such as imidazolate, pyrazolate and carbenite; however, triazolate is rarely reported. Although hydrophobic trinuclear gold (I) triazolate complex has been reported in a solid state with luminescence center at near infrared area (750 nm) at room temperature, but no example of phosphorescent amphiphilic trinuclear gold (I) triazolate complex with liquid crystalline properties has been reported for potential application in near infrared phosphorescent temperature sensor

materials. Here we report the synthesis of triazole ligand bearing amphiphilic side chain and then use it for complexation with gold salt to form amphiphilic trinuclear gold (I) triazolate complex. Triazole ligand was prepared in six stepwise reactions from triethylene glycol (EG₃) to tosylate ethylene glycol (TsEG₃, step 1; 180 g, 90%), mono substitution triethylene glycol with decanediol (C₁₀EG₃OH, step 2; 17 g, 43%), bromination (C₁₀EG₃Br, step 3; 9 g, 45%), Williamson ether substitution reaction (C₁₀EG₃BnCOOMe, step 4; 3.5 g, 67%), carboxylation (C₁₀EG₃COOH, step 5; 2 g, 80%) and amidation (C₁₀EG₃TzH, step 6; 240 mg, 23%). The resulting triazole ligand will be reacted with dimethylsulfide gold (I) chloride ([Au(SMe₂)Cl] in methanol in the presence of excess freshly distilled triethylamine (Et₃N) to form the gold complex. The phosphorescent properties will be discussed later.

Keywords: Keywords: Triazole gold complex; Triazole ligand; Phosphorescent materials; Luminescence.