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## Appendix A

In our study, we have used three different hormones and three different concentration as well as control to observe the germination rate of *Sonneratia alba* in three different medium.

Table: Different hormones and their concentration using in the observation of seed germination of *S. alba*.

Different medium	Different hormones and their concentration			
	Control	BAP	GA3	Kinetin
In Vivo medium	0	100ppm	100ppm	100ppm
In Vitro MS medium	0	500ppm	500ppm	500ppm
In Vitro WPM medium	0	1000ppm	1000ppm	1000ppm

Here,

MS: Murashige and Skoog

WPM: Woody Plant Medium

BAP: 6-Benzylaminopurine

GA: Gibberellic Acid



## Appendix B

### Calibration Curve of Gallic Acid

#### Calibration Curve of Gallic Acid standard

250mg of dry gallic acid was dissolved in 10ml of ethanol and then diluting with 500ml distilled water to prepare the 0.5mg/ml stock standard of gallic acid. The solution was kept in the 4°C. The standard concentrations that were prepared for calibration curve were 0.02-0.03-0.04-0.05 and 0.06mg/ml.

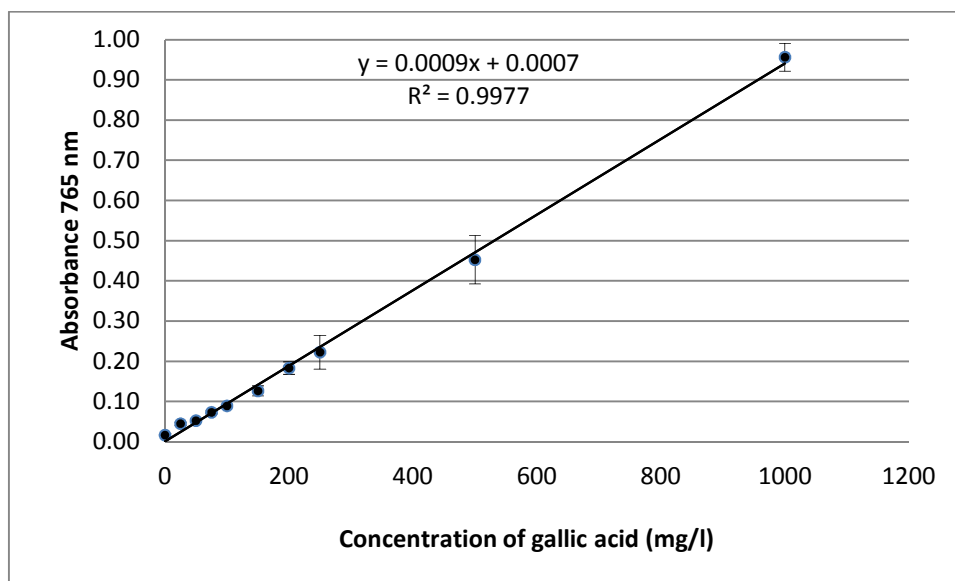


Figure A1: Calibration Curve of gallic acid standard which is used for expression of total phenolic contents as gallic acid equivalents.

Calculation of total phenolic contents in gallic acid equivalent

$$\text{GAEq (mg GA/g sample)} = [\text{A} \cdot \text{DF} \cdot \text{V}_{\text{solv}} \text{ (mL)}] / [\text{slope of cal. Curve} \cdot \text{sample amount (g)}]$$

In this equation

GA: Gallic Acid

A: Absorbance of working solution

V: Solvent volume for dissolving extract

Sample amount: Weighted extract

DF: Dilution Factor

## Appendix C

### Publications and Conferences

#### *Journal Article*

- **Haq Imdadul**, Sani Wirakarnain, Koshy Philip, Rafat Arash, Hossain A.B.M. Shariff, Taha Rosna Mat (2011). Valuable Antioxidant and Antimicrobial Extracts from *Rhizophora mucronata* of Asiatic Mangrove Forests. *Research Journal of Biotechnology*. 6(1), Page 10-14.
- Moneruzzaman KM, Amru NB, Hossain ABMS, Saifudin M, **H. Imdadul**, Wirakarnain S. 2010. Effect of sucrose and kinetin on the quality and vase life of *Bougainvillea glabra* var. Elizabeth Angus Bracts at different temperatures. *Australian Journal of Crop Science*. 4(7). Pages 474-479.
- **Haq Imdadul**, Sani Wirakarnain, Hossain A.B.M. Shariff and Taha Rosna Mat, 2011. Total phenolic contents, antioxidant and antimicrobial activities of *Bruguiera gymnorrhiza*. Accepted (in press) *Journal of Medicinal Plant Research*.
- B. Banisalam, W. Sani, K. Philip, **H. Imdadul** & A. Khorasani, 2011. Comparison between *In Vitro* and *In Vivo* Antibacterial Activity of *Curcuma zedoaria* from Malaysia. Accepted (in press) in *African Journal of Biotechnology*.
- **Haq Imdadul**, Sani Wirakarnain, Hossain A.B.M. Shariff, and Taha Rosna Mat, 2011. Antioxidant and antimicrobial activities of different extracts and fractions from the in vivo and in vitro explants of mangrove plant *Sonneratia alba*. Submitted to *International Journal of Molecular Science*.
- **Haq Imdadul**, Sani Wirakarnain, Hossain A.B.M. Shariff, and Taha Rosna Mat, 2010. Effects of hormone treatment by soaking method on the seed germination of Mangrove plant, *Sonneratia alba* under *In Vivo* and *In Vitro* condition. Submitted to *Australian Journal of Crop Science*.

#### *Conference Proceedings*

- **Haq Imdadul**, Sani Wirakarnain, Rafat Arash, Hossain A.B.M. Shariff, Taha Rosna Mat. 2010. Antioxidant activity and total phenolic content of leaf extract of *Rhizophora mucronata*. Poster presentation at '3<sup>rd</sup> ICYC International Conference', Penang, Malaysia.
- Mazen Abdul Latif, A.B.M. Shariff, Amru Nasrullah Boyce, Alenazi Mekhled Mutiran, **Haq Imdadul** & Mohd Saifuddin. 2010. Bioethanol fuel production from dates and apple fruit biomass as renewable energy. 'The 4<sup>th</sup> Saudi Science Conference', Al Maninah Monawarah, Saudi Arabia.