

# DNA Barcoding *Jasminum Sambac*, *Jasminum Nitidum*, and *Nyctanthes Arbq-Tristis* by using ITS2 and trnH-psbA Genes

Prepared by: Chang Kek Ning

## ABSTRACT

---

*Jasminum* and *Nyctanthes* are from Oleaceae family which are widely cultivated and distributed all around the world especially Asian countries. The chemical constituents from the plants of Oleaceae family *Jasminum* and *Nyctanthes* have high commercial value because it can be used in the pharmaceutical industry. *Jasminum* and *Nyctanthes* are a source of essential oil and perfume due to its fragrant smell. They can also be processed to make tea and food flavorings. *Jasminum* and *Nyctanthes* though from the same family are in different genus though the phylogenetic position of *Nyctanthes* has been debated. By using DNA barcoding, we can determine the differences within and between species. Three different species of plants which are *Jasminum sambac*, *Jasminum nitidum* and *Nyctanthes arbor-tristis* were analysed using the Internal Transcribed Spacer 2 (ITS2) and *trnH-psbA*. The DNA samples were amplified using Polymerase Chain Reaction (PCR) for ITS2 and *trnH-psbA* gene sequences. The PCR products were sequenced, and then the results were analysed using T-Coffee, MEGA 6 and BLAST. Based on the results, *J.sambac* and *J.nitidum* shows higher similarity (0.128 for ITS2; 0.032 for *trnH-psbA*) compared to *N.arbor-tristis* and *Jasminum* (Average=0.301 for ITS2; Average=0.237 for *trnH-psbA*) because *J.sambac* and *J.nitidum* come from the same genus, and this is one of the criteria for a good barcode.