

## 3<sup>rd</sup> International Conference on **Integrative Biology**

August 04-06, 2015 Valencia, Spain

### **Transcriptomic and tissue culture approaches for production of Amaryllidaceae alkaloids**

Aleya Ferdausi<sup>1</sup>, Xianmin Chang<sup>2</sup>, Anthony Hall<sup>1</sup> and Meriel Jones<sup>1</sup>

<sup>1</sup>University of Liverpool, UK

<sup>2</sup>Royal Agricultural University, UK

The Amaryllidaceae alkaloids example galantamine, lycorine and narciclasine are noted for their pharmaceutical properties. Galanthamine is a long acting, selective, reversible and competitive acetylcholinesterase inhibitor approved for the treatment of early to mild stage Alzheimer's diseases in the UK. It is currently obtained from plant material (especially *Narcissus*, *Galanthus*, *Leucojum* and *Lycoris* species including collected from the wild) since total chemical synthesis is not economic. The UK is one of the major producers in the world of *Narcissus* but cultivars have been selected for flower rather than alkaloid production. The biosynthesis of alkaloids by plants using in vitro systems has been considered as tools for drug discovery and production. The biosynthetic pathways especially for galantamine are starting to be understood but are still far from complete. Two important steps towards the goal of improved yields from whole plant or cell culture systems are identification of genes and their alkaloid products and also developing culture systems for optimized alkaloid production. We are using a combination of transcriptomics for gene discovery within different daffodil cultivars and tissues towards this goal.

#### **Biography**

Aleya Ferdausi is an Assistant Professor in the Department of Genetics and Plant Breeding, Bangladesh Agricultural University. She has completed her Master's degree from the same department of the same University. She has been awarded study leave and a Commonwealth Scholarship to pursue her PhD in the UK at the Institute of Integrative Biology, University of Liverpool.

[A.Ferdausi@liverpool.ac.uk](mailto:A.Ferdausi@liverpool.ac.uk)

#### **Notes:**