

Edinburgh 25-09-01

James Rennie Bequest Committee  
Division of Biological Science  
Michael Swann Bld, room 2.24

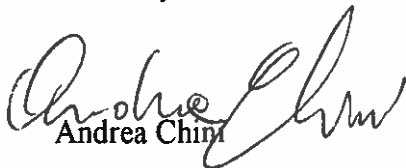
**Subject: James Rennie Bequest Report of Chini Andrea**

First of all I would like to express my gratitude for the decision of the Committee to award me with a travel grant in order to attend the 10<sup>th</sup> International Congress in Molecular Plant-Microbe Interaction Interaction (10 - 14 July 2001, Memorial Union of the University of Wisconsin, Madison USA). I was very pleased to be able to attend the Congress. This was my first experience of such an important international meeting and, as it is described in the attached report, it was very useful for my research and me.

In addition I would like to apologise for the short delay in presenting this report, but until few days ago I was focused on writing my first year report and prepare the relative talk.

Thank you,

Sincerely

  
Andrea Chini

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## Division of Biological Science

### James Rennie Bequest Report of Chini Andrea

The James Rennie Bequest travel grant that the Committee decided to award me with partially funded my travel in order to attend the 10<sup>th</sup> International Congress in Molecular Plant-Microbe Interaction Interaction that took place, from the 10<sup>th</sup> to the 14<sup>th</sup> of July 2001, at the Memorial Union of the University of Wisconsin, Madison USA. Over 1000 attendees from more than 40 countries were present at the meeting, which was the most successful MPMI meeting so far.

It was confirmed once again that the molecular biology of plant disease resistance is one of the most competitive and fast developing topics in plant science, therefore it was very important for my PhD to attend the Congress and be aware of the most recent and up to dated scientific results. The most successful scientists in this field presented results from their projects and suggested new explanations for disease resistance mechanisms in plant.

Among different subjects, much attention was focused on *Arabidopsis* mutants altered on disease resistance and the potentiality they provide in order to dissect the plant defence system. New genes involved in disease resistance were characterised and their functions described. A consistent number of posters was concentrate on this subject and among them the one I presented (A novel gene involved in systemic resistance in *Arabidopsis*: *ADRI*. by Andrea Chini, John J. Grant and Gary J. Loake – ICMB, Edinburgh University, UK). Many scientists showed their interests on the characterisation of *adr1* mutant. Infact it was one of the first report of the luciferase imaging reporter gene technology that had been used to identify novel mutants in systemic acquired resistance (SAR) trasduction pathway; a large mutagenized *Arabidopsis* population had been screened for constitutive bioluminiscent

mutants which express luciferase under the control of the tobacco pathogenesis related (PR1a) promoter.

A novel gene, *adr1* (activated disease resistance), had been isolated and partially characterised. Pathogenicity assays have showed that *ADR1* expression enhanced resistance against a number of pathogens. Analysis of *ADR1* gene expression suggests that it is involved in both local and systemic resistance; moreover *ADR1* is expressed in response to wounding.

In order to better understand the function of *ADR1*, crosses with other *Arabidopsis* mutants involved in plant defence (*nah G*, *npr1*, *ein 2.1* and *coi 1*) have been performed. A number of attendees agreed that further analysis of these double mutants will permit epistasis studies to unravel the position of *ADR1* in the defence signalling pathway and this will be of particular interest since the knowledge of this complex network of signals is in continuous evolution.

Moreover discussion with other junior scientists working in similar projects and/or using similar techniques were very important to better understand the result of my research and develop new ideas.

In addition presentations, posters and discussions that took place at the 10<sup>th</sup> International Congress in Molecular Plant-Microbe Interaction Interaction helped me to write a better first year report, which was due at the end of my first year of a PhD project.