Molecular study of Indian peanut clump virus transmission by polymyxa graminis led

Fact Sheet

Project Information

Grant agreement ID: FMBI961514

Project closed

Start date
1 January 1997

End date
31 December 1997

Funded under
Specific research and technological development programme in the field of the training and mobility of researchers, 1994-1998

Total cost
No data

EU contribution
No data

Coordinated by
Scottish Crop Research Institute (SCRI)
United Kingdom

Objective

Research objectives and content
Indian peanut clump virus (IPCV) infects groundnut plants (Arachis hypogea L.), causing serious losses to peanut crops in the Indian sub-continent. IPCV is related to peanut clump virus which causes similar disease in African crops, both are i

transmitted by Polymyxa sp..
The mechanism by which the virus is acquired by the fungus and is transmitted to host plants is unknown. Recently, a laboratory based system for studying IPCV transmission by Polymyxa zoospores was established at UCL, Louvain. Understanding the virus component of the transmission would be much enhanced by being able to make known mutations in the virus genome. The objective of the research is to obtain cloned cDNA in such a form that infective IPCV can be recovered from it. The work will involve (1) purification of virus RNA from an isolate recently transmitted by fungi, (2) PCR amplification and construction of a full-length cDNA clone for each genomic RNA, (3) preparation of mutants in open reading frames (ORF) possibly involved in transmission, (4) expression of mutant clones in plants by inoculation of transcript RNA or agro-inoculation of cDNA in a Ti plasmid. Virus clones will be sent to UCL for analysis in the Polymyxa transmission system
Training content (objective, benefit and expected impact)
Develop the expertise of the applicant in molecular virological techniques (molecular plant virologist are few in Europe), including c-DNA cloning, sequencing, mutagenesis and agro-inoculation. The work will be performed with already existing research programs at SCRI, UCL, and ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), and will take the opportunity of recent research achievements for a better understanding of virus transmission by fungus, using IPCV-Polymyxa model. The model developped should be applied to other furoviruses causing economically significant diseases
Links with industry / industrial relevance (22)

Fields of science (EuroSciVoc)

natural sciences > biological sciences > microbiology > **virology**

natural sciences > biological sciences > microbiology > **mycology**

natural sciences > biological sciences > genetics > **mutation**

agricultural sciences > agriculture, forestry, and fisheries > **agriculture**

natural sciences > biological sciences > genetics > **RNA**

Programme(s)

FP4-TMR - Specific research and technological development programme in the field of the training and mobility of researchers, 1994-1998

Topic(s)

0302 - Post-doctoral research training grants

TL04 - Microbiology (Virology inc. AIDS)

Call for proposal

Data not available

Funding Scheme

RGI - Research grants (individual fellowships)

Coordinator

Scottish Crop Research Institute (SCRI)

EU contribution

No data

Total cost

No data

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Participants (1)

Not available

Belgium

EU contribution

No data

Address

Total cost

No data

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