

Contents lists available at ScienceDirect

Antiviral Research

journal homepage: www.elsevier.com/locate/antiviral



Meeting Report

Meeting report: 29th International Conference on Antiviral Research in La Jolla, CA, USA



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ARTICLE INFO

Article history: Received 26 October 2016 Accepted 30 October 2016 Available online 1 November 2016

Keywords:
Antiviral research
Antiviral therapy
HIV
Respiratory syncytial virus (RSV)
Ebola virus
Zika virus

ABSTRACT

The 29th International Conference on Antiviral Research (ICAR) was held in La Jolla, CA, USA from April 17 to 21, 2016. This report opens with a tribute to the late Chris McGuigan, a Past-President of ISAR, then continues with summaries of the principal invited lectures. Doug Richman (Elion Award) investigated HIV resistance, Bob Vince (Holý Award) showed how carbocyclic nucleoside analogs led to abacavir and Jerome Deval (Prusoff Award) explained how his group chose to seek a nucleoside analog to treat RSV. ALS-8176 was active in a human RSV-challenge study and is being evaluated in children. The first keynote address, by Richard H. Scheuermann, reported on the remarkable progress made in viral genomics. The second keynote address, by Heinz Feldmann, gave an overview of Ebola virus disease. There were four mini-symposia, Structural Biology, Diagnostic Technologies, DNA viruses and Zika virus. Diagnostic assays are approaching an ideal aim, a compact instrument, simple to use with any type of sample, no sample preparation and a result within an hour. The diversity of HCMV is far greater than for other herpesviruses, typically, an individual having >20,000 single nucleotide polymorphisms (SNPs). During antiviral treatment, there is rapid CMV evolution which is presumed to be due to preferential selection of already present variants rather than by the creation of new variants. A selection of contributor presentations includes oral prodrugs for nucleoside triphosphate analogs, a new method for the synthesis of phosphoramidate prodrugs and the clinical evaluation of brincidofovir for treating transplant recipients with adenovirus infections.

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1. Introduction

This article provides an overview of the invited lectures at the 29th International Conference on Antiviral Research (ICAR), sponsored by the International Society for Antiviral Research (ISAR), which was held in La Jolla, CA, USA, from April 17–21, 2016. This year, the meeting opened with a heart-felt tribute by Andrea Brancale to his mentor and colleague, Chris McGuigan who died in March 2016. This meeting summary continues with reports of lectures by the recipients of ISAR's three major awards, held in memory of Gertrude (Trudy) Elion, Antonín (Tony) Holý and William (Bill) Prusoff. These are followed by summaries of the two keynote addresses, the main presentations within the four mini-symposia on *Structural Biology, Diagnostic Technologies, DNA viruses, Zika virus*, and four contributor presentations.

Because this review article simply provides short accounts of oral presentations, it is not generally accompanied by references to the scientific literature. Any descriptions of favorable treatment outcomes should not be taken as a recommendation for clinical use. Generally, I have added my personal comments on the meeting within the conclusion. In a few instances, I have added my own comment within the main text, indicated either by the wording or by the use of square brackets. Although this meeting report covers only a few of the presentations, it aims to illustrate the great diversity of topics discussed at ICAR, bringing together knowledge and expertise from a wide spectrum of antiviral research.

2. Chris McGuigan: a tribute to a remarkable innovator

Andrea Brancale, Cardiff University, Cardiff, UK

Much too young, Chris (Fig. 1) died from cancer on 11th March 2016.



Fig. 1. Christopher (Chris) McGuigan, 1958–2016.

Chris obtained his B.Sc., Chemistry, Hons (Class 1), at the University of Birmingham (1979) and his Ph.D. on Anticancer Drug Design (1982). He moved to the University of Edmonton, Alberta, Canada (1982–84) as a post-doctoral fellow, then to the University of Exeter as Demonstrator (1984–85), to University College London as Lecturer (1985–90), and to the University of Southampton as Lecturer (1990–94). His career at the Welsh School of Pharmacy began as a Reader (1994–95), as Professor (1995–2016) and becoming the Pro Vice Chancellor (2012–3).

As Professor, Chris was an inspirational leader, training >40 Ph.D.s and >50 postdocs, some of whom presented their work at various ICARs. Chris published >220 papers and obtained >100 patents. ISAR selected Chris to be the first person to receive the William Prusoff Young Investigator Award in 2001. Just 3 years later, Chris was elected as the ISAR President-Elect, becoming President two years later (2006—2008). Collaboration with Erik De Clercq and Jan Balzarini led to the discovery of Cf1743 (FV-100) (Fig. 2) which has highly potent activity against varicella virus (VZV). FV-100 is currently in Phase III clinical trials in patients with herpes zoster (shingles). Clearly, Chris was delighted to present Jan with the Elion Award in 2008 (Fig. 3).

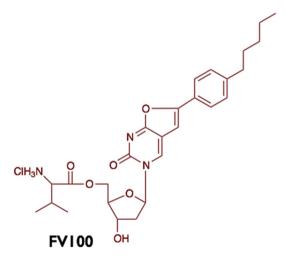


Fig. 2. Structure of CF1743 (FV-100).

Another compound, Cf2761 (INX-08189, often as INX-189) was synthesised and quickly shipped to Inhibitex on 11th Nov 2008. It was shown to have excellent activity against Hepatitis C virus (HCV) (EC $_{50}$ 10 nM). The clinical milestones were quickly achieved, first into man - May 2010 and first efficacy in patients - Mar 2011.

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