**Newsletter January 2019 – Happy New Year!**

# Children's Brain Tumour Drug Delivery Consortium

## Accelerating Progress in Drug Delivery

Core funded by Children with Cancer UK

## Education Day on Children's Brain Tumours

Throughout the latter half of 2018, the Children's Brain Tumour Drug Delivery Consortium worked together with the national charity *brainstrust* to host a paediatric brain tumour symposium. This was held in Nottingham on 4th December. Around 60 delegates attended, bringing together healthcare professionals, researchers, charity workers and families of childhood and teenage brain tumour patients. Feedback has been very positive, with delegates requesting that we run more events like this in the future.


Topics covered:

- The drug delivery challenge in paediatric brain tumours
- Modelling medulloblastoma metastasis
- Delivering drugs during surgery
- Electrical field therapy for brain tumours
- PROMOTE study: communication during consultation
- Developments in the field of neurosurgery
- Post-operative cerebellar mutism syndrome
- Late effects of childhood brain tumours
- Impact on education
- The role of relatives
- Transition points

Videos of individual speakers from this education day are available on YouTube - http://tinyurl.com/ydg6cpe5 All views to date are from the UK. Let's get this international!

## Conference notice

The Blood Brain Barrier Conference, 3-6 April 2019, New York, is open for abstract submissions (**deadline Jan 18th**): '*the majority of oral presentations will be drawn from openly submitted abstracts*'. It would be great if the drug delivery community secured some speaker slots, so please do consider submitting.

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## Upcoming conferences

**14-15 January –** Advancing CNS Biotherapeutics and Crossing the Blood-Brain Barrier, San Diego, USA

**14-15 February –** 7th ACCELERATE Paediatric Oncology Conference, Brussels, Belgium

**7-8 March –** Blood-Brain Barrier Consortium Meeting Portland, USA

**13-14 March –** 3rd International Conference of Nanomedicine and Drug Delivery, Singapore

**18-19 March –** Formulation and Drug Delivery USA Congress, San Diego, USA

**1 April –** 24th Neuro-Tumor Club Meeting at AACR, Atlanta, USA

**3-6 April –** Blood-Brain Barrier Conference, New York, USA

**12 April –** Blood-Brain Barrier and CNS Drug Discovery, San Diego, USA

**3-4 May –** SNO Pediatric Neuro-Oncology Research Conference San Francisco, USA

**23-24 May –** Brain Tumour Meeting, Berlin, Germany

**14-15 June –** 13th World Drug Delivery Summit, Montreal, Canada

More conferences are listed on our website, here.

## Spotlight

In this newsletter, we feature CBTDDC member Dr Paul Brennan.

Based in Edinburgh, Paul is a senior clinical lecturer and honorary consultant neurosurgeon. His clinical work focuses on brain tumours, and his clinical and laboratory research studies aim to improve outcomes for brain tumour patients.

The search for more effective brain tumour therapies often focuses on identifying novel compounds through preclinical drug screening. The general failure of this strategy encouraged Paul and his colleague Asier Unciti-Broceta to embark on a novel approach that would reduce systemic toxicity of existing drugs, whilst enhancing local drug delivery and efficacy.

Asier, a medicinal chemist, has developed a technology to better target drug activation. This utilizes transition metals, e.g. palladium, to catalyse bi-orthoganal reactions that remove a group blocking the active site of a drug. These reactions cannot be realized by natural enzymes, so drug activation is very specifically targeted to the site of the metal catalyst.

Asier and Paul were funded by a CRUK Pioneer award to develop modified versions of existing chemotherapies. Their plan is that palladium nanoparticles will be implanted in the tumour cavity at surgery. The drug can be administered after wound healing, reducing local side effects. The drug is only activated by palladium, so local efficacy is increased at a smaller drug dose, reducing systemic toxicity. Pro-drugs can be given multiple times and in different combinations. In vivo assays of toxicity are promising, so Paul and Asier are investigating how to move the new therapy into clinical studies.

For more information please get in touch
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Bioorthogonal Uncaging of the Active Metabolite of Irinotecan by Palladium-Functionalized Microdevices. C Adam, AM Pérez-López, L Hamilton, B Rubio-Ruiz, TL Bray, D Sieger, PM Brennan, A Unciti-Broceta
Chemistry (2018) 24 (63), 16783-16790

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**Collaborative research database:**
http://www.cbtddc.org/research/list.aspx

### Image/video of the month

Listen to researchers talking about how joining the Children's Brain Tumour Drug Delivery Consortium has benefitted their research.

*Click on link embedded in image.*

Feeling inspired to add your details to our collaborative research database? You can do that here:
http://www.cbtddc.org/research/submit-your-details.aspx

To share an image or video in this newsletter, please send us the file plus a caption.