

A year of Medicine Makers

Rachel Burnett (Education and Public Engagement Officer)

Over the last year, we have been expanding our public engagement programme. As part of this, we partnered with the British Pharmacological Society to create a hands-on activity focusing on the roles of biochemists and pharmacologists in discovering and developing drugs, as well as offering an insight into how medicines work in our bodies. We decided to call the activity Medicine Makers, and to focus on painkillers.

Painkillers are one of the most widely used classes of drugs, with over 70 million prescriptions and more than 30 billion over-the-counter tablets sold annually in the United States alone. The aim of Medicine Makers is to show how molecules of paracetamol, ibuprofen and aspirin travel around your body and locate the COX2 enzyme. COX2 releases tiny hormone-like molecules called prostaglandins, which cause us pain and inflammation. When painkillers bind to COX2 they change its structure, preventing it from releasing prostaglandins, which reduces pain. To illustrate this, we have a 3D printed model of COX2 and some 3D printed aspirin models which visitors can handle. Our COX2 model is 7.5 million times bigger than the actual enzymes at work in our cells!

Visitors also have the opportunity to get creative. They can create a model of paracetamol, ibuprofen and aspirin, or invent their own new medicine. The challenge is to fit your medicine model into the active site of the proteins at the stand. The medicine model can be taken home, to remind visitors of what they made. We have also created handouts about the activity, which are available on the stand and also in the of the Education section of the Society's website (<http://www.biochemistry.org/Education/Publicengagement/Sciencewriting.aspx>).

So far, we have taken this activity to several science festivals. It made its debut at Big Biology Day at Hills Road School, Cambridge as part of Biology Week 2014, and has since gone to Brighton Science Festival, Royal Holloway Science Festival, the Big Bang Fair 2015 and Cheltenham Science Festival 2015. Volunteers on the stand were provided by the Biochemical Society and the British Pharmacological Society, and were sourced from our respective memberships. The knowledge and experiences of the volunteers within scientific research provided



the opportunity for visitors to engage with “real” scientists and ask in depth questions about the content of the activity. The volunteers were also able to discuss their own career paths, which was useful for older visitors considering a career in science.

Medicine Makers has received great feedback from visitors of all ages at these festivals, being described as “engaging” and “inspiring”. To get an idea of the number of visitors visiting the stand we have created Medicine Makers stickers, which are given to visitors who have completed the activity. We trialled this at Big Bang, and gave away 300–400 stickers per day over the four days of the festival.

Going forward, we are developing the activity as an online kit so members and science educators can run this activity themselves. We are hoping to launch this in autumn 2015, so do look out for this exciting resource on our website. ■

If you would like further information about the activity, would like to volunteer for public engagement events or have any questions, please email education@biochemistry.org