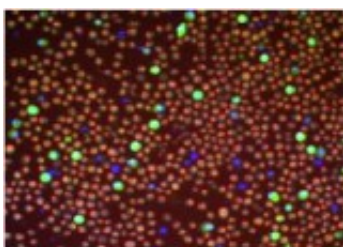


Novel technique informs drug delivery research

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University College Dublin researchers led by Conway Fellow, Professor David Brayden have shown that a candidate drug delivery polymer may have potential for oral or topical use. These findings were recently published in the *Journal of Controlled Release*.

The team of scientists, who are part of the Science Foundation Ireland-funded Irish [Drug Delivery](#) Network, set out to investigate if an antibacterial synthetic polymer called pDMAEMA [poly(2-(dimethylamino ethyl)methacrylate)] is as damaging to normal human cells as it is to bacteria.

This sticky polymer binds membranes and previous research by the team demonstrated that it has a novel bactericidal action against a range of bacteria. This finding has led to pDMAEMA being proposed as a surface-coating for medical devices in an effort to reduce the number of

hospital-acquired infections.

This study, which formed part of the doctoral research by lead author Lee-Anne Rawlinson, used high content analysis, a non-invasive imaging technique that can monitor a number of parameters over a time period using up to eight [fluorescent dyes](#). It has an unique advantage over other techniques in that it does not interfere with cells during the analysis.

The findings showed that pDMAEMA was cytotoxic to [white blood cells](#), but not to intestinal epithelial [cells](#), and that it did not damage intestinal mucosae in the model used even in high concentrations. This would suggest that the polymer might have potential for oral or topical use, rather than by systemic injection.

More information: High content analysis of cytotoxic effects of pDMAEMA on human intestinal epithelial and monocyte cultures. Lee-Anne B Rawlinson, Peter J. O'Brien, David J. Brayden. Journal of Controlled Release. May 7. [Epub ahead of print] PMID: 20457190.

Provided by University College Dublin

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