

Dendroids as internal medicine courier

Rebecca Kaup has developed dendroids, clusters of polymers that can transport medicines or genetic material in the body.

Kaup constructed the new molecules for her PhD research in the BioNanoTechnology chair group. She did this using dendrimers, densely branched polymers with cavities. They are currently attracting a lot of interest in medical fields. The cavities can be used to transport medicines within the body. But each dendrimer can only take a small payload.

The PhD candidate developed a way to link dendrimers, turning them into super-couriers, dubbed dendroids. To construct them, she created a kind of mould that positions the dendrimers in the right place before linking them. Kaup: 'You can also link dendrimers in a solution, but then you don't have much control over the result.'

For medical applications, it's important to have a well-defined final product and to be able to reproduce the same result.' Work is also being done with Wageningen plant scientists on another application: delivering genetic material to specific places in plant cells.
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