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Professor takes ABS from keyboards to cancer research

by Marissa Heffernan

The matrix made from recycled e-plastic. | Courtesy of NTU Singapore

Researchers at the Nanyang Technological University-Singapore have come up with a novel product idea for recycled ABS – cell cultures that can be used to grow test tumors.

In order to study tumors, researchers need to grow them, and that is typically done on cell cultures made of virgin resin. Associate professor Dalton Tay, who led the research project, decided to use acrylonitrile butadiene styrene from end-of-life keyboards instead, opening up a new potential end market for a plastic that is not recycled often.

“Our innovation not only offers a practical means to reuse e-waste plastics but could also reduce the use of new plastics in the biomedical industry,” Tay said in a press release.

First, the ABS is dissolved in acetone and poured into a mold, which is porous like a sponge to allow cells to attach to it and grow. After it hardens, it can be used for spherical clusters of cells, called cancer spheroids, that mimic tumors. This kind of cell culture structure is more accurate than conventional ones, as its three-dimensional shape allows the tumors to form more realistically.

It is best suited for breast, colorectal and bone cancer spheroids, which can then be tested and experimented on.

The research was reported in *Resources, Conservation & Recycling* earlier this year.

https://resource-recycling.com/e-scrap/2024/08/08/professor-takes-abs-from-keyboards-to-cancer-research/