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A revolution in the treatment of solid tumours - groundbreaking research by Prof Magdalena Król's team published in Nature Communications

Researchers from the Centre for Cell Immunotherapy at the Warsaw University of Life Sciences, led by Prof Magdalena Król, have discovered that could revolutionise the treatment of solid tumours. They have developed an innovative Macrophage-Drug Conjugate (MDC) technology – a breakthrough platform that turns macrophages into precise carriers of anti-cancer drugs.

Prof Magdalena Król's team from the Centre for Cellular Immunotherapy at SGGW has published an article in *Nature Communications*. It concerns a breakthrough therapeutic technology that could represent a significant step in treating solid tumours.

Thanks to the discovery of a new mechanism, TRAIN (TRAnsfer of Iron-binding proteiN), macrophages can deliver drugs directly to cancer cells, requiring only cell-to-

cell contact. Moreover, in doing so, macrophages activate the immune system, enhancing the therapeutic effect.

MDC technology has been tested in mouse and human tumour models, demonstrating high efficacy and safety. Another advantage of this cell therapy is that it can be prepared and stored in advance, greatly facilitating its clinical application.

However, this is only the beginning. The discovery of the TRAIN mechanism opens up new perspectives in oncology – pointing to the existence of hitherto unknown communication pathways between cancer cells and the immune system. The search for new molecular targets and understanding these mechanisms could revolutionise medicine, leading to the development of effective and more precise anti-cancer therapies.

This discovery opens a new chapter in cancer immunotherapy, offering hope for the effective treatment of tumours that have previously been difficult to overcome.

Read the article in *Nature Communications.*

Metryczka

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