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Plasticell and LambdaGen join hands to exploit genome editing technologies

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Plasticell and LambdaGen to develop iPSC-derived CAR-NK allogeneic cancer immunotherapies

UK-based firm Plasticell, a developer of stem cell technologies and advanced therapies, has entered into a strategic collaboration with Singapore-based LambdaGen. Together, the two companies will exploit genome editing technologies based on synthetic lambda integrases that allow specific insertion of large gene cassettes into the human genome.

The UK-Singapore partnership is in part financed by a EUREKA GlobalStars competitive grant. The funding has been awarded to enable the two organisations to carry out a project – valued at GBP £400,000 (SGD $650,000) – which aims to create a broadly-applicable iPSC-derived allogenic immunotherapy platform.

LambdaGen will produce induced pluripotent stem cells (iPSC) lines engineered with chimeric antigen receptors (CARs) and other effectors that enhance the anti-tumour activity of immune cells. Plasticell will use its combinatorial screening technology, CombiCult, to develop optimal protocols to convert these iPSCs into natural killer (NK) cells for allogeneic cancer immunotherapy.

The cellular immunotherapy sector is currently dominated by CAR-T therapies - with over 2100 products in development. NK cells are the second most utilised cell type with over 500 products in development. Genetic modifications (besides CAR-T) which are engineered into cell immunotherapies represent a new approach to enhancing safety and potency. Currently, ‘armoured’ cell therapies comprise approximately 10% of assets in development.