Best Dendritic Cell Therapy Laboratory 2021

The LDG GmbH produces dendritic cell therapies for the treatment of cancer, with most of its patients finding their way directly to the firm due to its international reputation. Its ATMPs (advanced therapies medicinal products) are produced under EU GMP standards, and owner, Prof. Gansauge has the production permission by the legal authorities. Following the LDG's recent success within EU Business News' German Business Awards 2021, we take a closer look at the vital work the firm does.

Fighting cancer with the immune system is a centuries-old dream of the medicine industry and it has come a long way since the discovery of immunotherapy using dendritic cells in the late 1990s. Countless research and therapy facilities around the world are increasingly turning to dendritic cell therapy, with more than 7,000 scientific papers having been published and the therapy having already been approved in some modern countries such as the USA.

Since 2001, Prof. Gansauge has been

treating patients with various types of cancer and he looks back on 500 successfully performed therapies with LANEX-DC®, the LDG's dendritic cell product. So far, published clinical results show an increase in median survival times in the palliative treatment of advanced cancer (e.g. pancreatic cancer), and a dramatic reduction of recurrence of cancer in the adjuvant situation (e.g. rectal cancer).

Prof. Gansauge is joined by a team of highly specialised and motivated experts who have worked with him for more than 20 years. They don't only serve German laboratories, but also advise other laboratories worldwide, showing how respected they are for their work around the globe and their dedication to each patient who requires treatment.

So, how does immunotherapy work? A special process is performed to isolate precursor cells from the patient's blood which have potential to become dendritic cells. These are transported under stable temperature conditions and immediately processed in a cleanroom certified according to EU GMP guidelines. These cells, along with the progenitor cells, settle out.

While the progenitor cells are in the maturation phase, they are able to take up proteins (e.g. tumour antigens from the patient's own plasma) into their interior. The not yet fully developed precursor cells can take up these proteins outside the body even under highly pure laboratory conditions. Once the cells have absorbed tumour antigens, they remodel them and present them on their surface. This means that the characteristic features of these antigens can later be better recognised by other immune cells.

During a seven-day process with microscopical monitoring, the progenitor cells mature into fully developed dendritic cells that have the characteristic structures of the harmful tumour cells in connection with a special signal on their surface. The immune cells can perceive this signal and recognise it as harmful.

The fully developed dendritic cells can now be injected under the patient's skin, and they will migrate from there into the lymph nodes and activate various types of enforcer cells (so-called cytotoxic T lymphocytes), which are able to kill degenerated cells. The enforcement cells activated in this way "remember" the foreign structural features. They reach the blood vessel system, spread over the whole body and look for cells in the various tissues that have exactly these characteristics. If the enforcement cells encounter the appropriate cells (in this specific case, the tumour cells), they try to destroy them and send out messenger substances to alert other immune cells.

In contrast to other forms of cancer treatment, such as chemotherapy or radiation, in which foreign substances or harmful radiation are used to fight a tumour, immunotherapy enables the body's own immune system to fight the cancer. The

only side effects that can occur during this treatment are in the form of slight fever and fatigue, similar to the symptoms of an infection, as part of the immune response of the body due to inflammatory messengers being released.

Indeed, the LDG is a good-intentioned, expert firm with a passion for saving the lives of cancer sufferers. It is busy expanding around the globe, having reached Asia within the last five years, trying to help as many people as possible with its treatment. The LDG now has its sights on taking its treatment to South America and the Middle East in coming years. Overall, it's easy to see what makes this firm the award winner it is, with its compassion, it dedication, and its ability to extend the lives of many.

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