

Localised immunotherapy new possibility to treat bladder cancer

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Antibody-based immunotherapy is a new promising method to treat cancer. Unfortunately, today's treatments can result in adverse side effects. New findings from IGP show an alternative way to administer the therapy, which has the same effect on the tumour but less impact other parts of the body.

In antibody-based immunotherapy drugs are used to stimulate the body's own immune cells to attack and destroy the [tumour](#) cells. This method is presently used to treat certain types of metastasised cancer, such as melanoma and bladder cancer. However, a disadvantage of the therapy is that the [drug](#) is injected in the blood, which will lead to an exposure of the whole body and thereby possible [adverse events](#).

An alternative strategy would be to administer the drug directly in or close to the tumour, provided that this still leads to the desired immune cell stimulation. In the present study a group of researchers, led by Sara Mangsbo at IGP, has demonstrated that a local [immune activation](#) in the tumour area had the same tumour inhibiting capacity as when the drug was delivered in the blood.

'We found that the therapy that we tested in a model system of [bladder cancer](#) could stimulate the immune cells to find and attack the cancer cells, even if it was administered locally. These results are very promising since they indicate that it's not necessary to activate the body's whole immune system, but only the one that is relevant in the tumour. This way adverse events caused by the drug can be reduced,' says Sara

Mangsbo.

In the study immune activation was achieved by administering blocking antibodies close to the tumour. The results complement the researcher's previous findings where they found that a direct immune stimulatory antibody had superior anti-tumour capacity when used locally at the tumour, as compared to after injection into the blood.

The hope is also that the [immune cells](#), not the drug itself, can find potential metastases and eliminate them. To understand if and how this is happening, further research is required. The present results are based on studies in mice and to determine if drug administration to the tumour results in fewer adverse events in patients, as compared to injections into the blood stream, clinical studies are also needed.

The study is a collaboration with researchers in Lund and Canada and was recently published in *European Journal of Immunology*.

More information: Luuk van Hooren et al. Local checkpoint inhibition of CTLA-4 as a monotherapy or in combination with anti-PD1 prevents the growth of murine bladder cancer, *European Journal of Immunology* (2016). [DOI: 10.1002/eji.201646583](https://doi.org/10.1002/eji.201646583)

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