

# ANTAGONISM OF B3 ADRENOCEPTOR FOR THE TREATMENT OF CANCER IMMUNE TOLERANCE



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## The invention



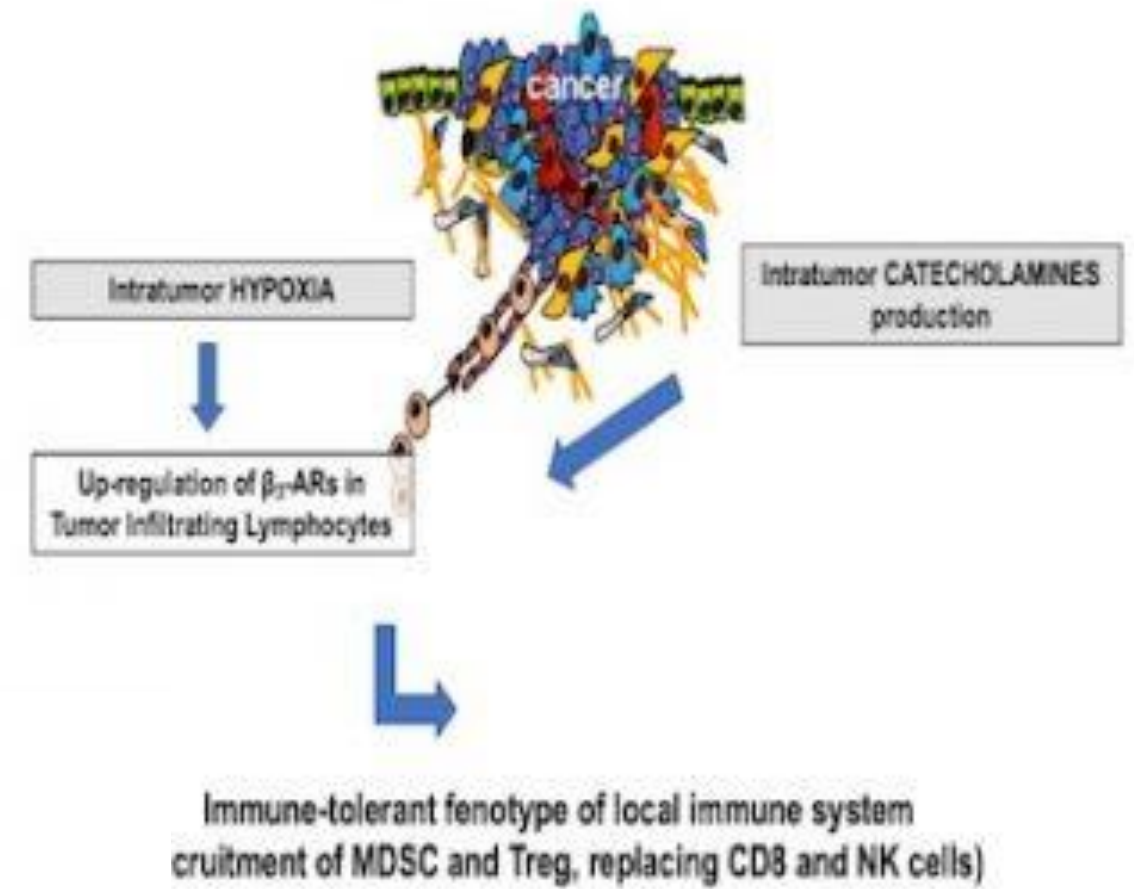
The invention relates to the use of beta-blocking compounds, in particular the antagonist of  $\beta 3$  adrenoceptor ( $\beta 3$ -ARs), for the treatment of immune-tolerance associated with pathological states, such as cancer. The  $\beta 3$  adrenoceptor, up-regulated in a hypoxic environment, recruits in the tumor microenvironment the cells involved in immune-tolerance (MDSC e Treg) replacing the cells involved in immune-competence (CD8 and NK)

The compounds of the invention allow the development of immunomodulatory drugs for oncological purposes, since they are capable to counteract the immuno-tolerance generated by tumors. In particular, the invention focuses on the role of  $\beta 3$ -ARs key receptors in the formation of a local and systemic micro-environment oriented towards immuno-tolerance, contributing significantly to decrease the immune system's response. The creation of selective receptor antagonists to  $\beta 3$ -ARs can therefore lead to the development of new drugs able to recognize, bind and inhibit the  $\beta 3$ -ARs receptor, so as to restore the immune-surveillance compromised by the tumor.

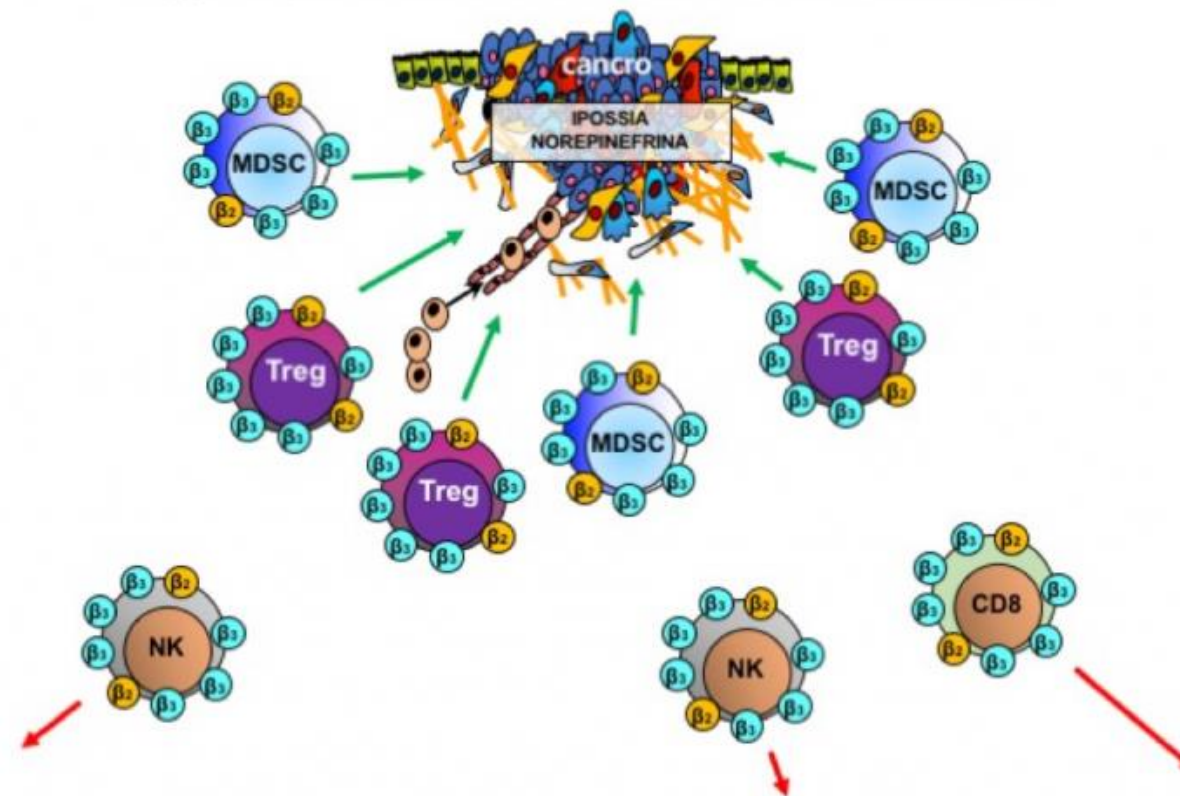
Images



### $\beta_3$ -ARs and cancer immune-tolerance



### Il $\beta_3$ -ARs promuove la immuno-tolleranza tumorale



## Industrial application



The patented technology is designed for the development of new drugs with oncological application, for the treatment of immunotolerance in cancer.

The technology enables treatment and drug targeting, with the aim of restoring and improving immuno-surveillance in cancer patients.

## Possible Developments



The patent is available for outright assignment, as well as for exclusive and non-exclusive licensing. Licenses are available for the remaining term of the patent titles.

The Research Group is available for new collaborative and third-party research activities, in-depth technical investigations, scientific advice, also aimed at raising the TRL of the technology.

The TRL of the invention is 3.

For further information:



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