TECHNOLOGY OFFER



202-13 INCREASING THE IMMUNE RESPONSE TO PAPILLOMAVIRUS (HPV)

- ✓ New HPV drug
- ✓ Treatment of different diseases caused by HPV
- ✓ Protects the progress to high grade pre-neoplastic or fully malignant lesions

The Technology

The present invention relates to a DNA demethylating agent and to a pharmaceutical composition comprising said DNA demethylating agent and carrier for use in increasing the immune response to papillomavirus (PV). Further, this technic relates to a method of killing a PV-infected cells, comprising contacting said PV-infected cell with a DNA demethylating agent, contacting said PV-infected cell with at least one PV antigen specific T-cell, and, thereby, killing said PV-infected cell.

Background

DNA methylation was found to have a profound impact on gene expression, with expression of a specific gene decreasing with an increase of the number of methylated CpG dinucleotides in the vicinity of said gene and its promoter. Accordingly, DNA methylation has been identified as an important regulatory mechanism in the control of gene expression, in particular in development of metazoan organisms. However, DNA methylation was also identified as an important factor in carcinogenesis and in the cellular defense against viruses.

Typically, PVs induce benign hyperproliferative lesions. However, some PV-types cause the intraepithelial lesions that may progress to high grade pre-neoplastic or even fully malignant lesions.

PVs virtually avoid contact with cells that could trigger a spontaneous immune response. This phenomenon explains why it usually takes weeks or even months until a robust immune response builds up in the HPV-infected host that finally may induce regression of the HPV-infected lesions.

Thus, there is a substantial need in the art for improving the immune response of an individual infected with PV in order to potentially eliminate the infection.

Advantages

One treatment for different diseases, like:

warts, exophytic growing papillomas, condylomata, inverted papillomas, any kind of HPV-induced squamous intraepithelial lesions (SIL), other pre-neoplastic or neoplastic PV-induced lesions, cervical neoplasias, skin neoplasias, neoplasias of the anal epithelium, neoplasias of the head and neck region, preferably of the oropharynx, or neoplasias of the tonsils.

Commercial Opportunity

✓ New HPV drug

Development Stage

✓ Successful first in human treatment

Intellectual Property

Patent application 2014 WO2015185611 A1

Contact:

technology transfer heidelberg GmbH Im Neuenheimer Feld 672 D-69120 Heidelberg Germany Email: <u>tt-team@med.uni-heidelberg.de</u>



UniversitätsKlinikum Heidelberg