nanoparticles) to compare the effects on the output of exosomes and microRNA profiles.

MicroRNA content of the nasopharyngeal cell derived exosomes analyzed with SOLiD 5500xl technology. The sequences were annotated in CLC Genomics Workbench ver-sion 5.5.1. Nanosight was performed with Nanosight NS500 device.

Results: The cytostatic activity of the $AgTiO_2$ photocatalyst particles generated reactive oxygen species is commensurable with the cytostatic activity of a classic chemotherapic substratum (doxorubicin). Both doxorubicin and AgTiO2 catalysed treatment increased exosome production by the NPC cell line. Our data suggested, that the tumor cell devastation altered both the number and the quality of the exosomes.

We have found significant changes of the expression rate of following microRNAs: miR-205, miR-451a, miR-125a, miR-30d, miR-30c-1, miR-30c-2, miR-425, and miR-17.

Conclusions: We suggest that increased exosome production may potentiate the information-transfer from tumor cells to the surrounding stromal cells and influence metastatis formation during cytostatic treatment. The differences in microRNA profiles after cytostatic versus photocatalytic treatment may lead to the identification of novel therapeutic targets to treat NPC.

PROPIONIC ACID SECRETED BY PROPIONIBACTERIUM ACNES MAY MODIFY THE CELLULAR PROPERTIES OF KERATINOCYTES

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Propionibacterium acnes (P. acnes) bacterium is a member of the skin microflora, but may also serve as an opportunistic pathogen contributing to the pathogenesis of acne vulgaris. Earlier we have shown that various P. acnes strains (889, 6609, ATCC 11828) belonging to different phylogroups differentially affect the cellular properties of cultured human keratinocytes in a strain-specific and dose-dependent manner. High doses of the pathogenic 889 and ATCC 11828 strains also resulted characteristic morphological changes and membrane damage, which lead to the cytotoxicity of human in vitro cultures keratinocytes (HPV-KER).

Our aim was to further analyze the interaction of human in vitro cultured keratinocyes and identify bacterially-derived factors that may mediate the previously observed effects.

In order to systematically quantify the P. acnes-induced cytotoxicity we performed spectrophotometric lactate dehydrogenase (LDH) and hemoglobin (HgB) assays using supernatant samples of bacterial treated HPV-KER cells and erythrocytes. The amount of released free LDH and HgB exhibited strain- and dose-dependent differences. We also noted the differential acidification of the pH in the culture supernatants. P. acnes is known to secrete propionic acid (PA), a characteristic, acidic end-product of bacterial fermentation in these species. In order to analyze whether P. acnes-derived PA has any role in the observed cellular changes we treated HPV KER cells with the acid and analyzed the cell morphology. Microscopic analysis of the PA treated cultures revealed cells with similar irregular membrane morphologies observed earlier upon high dose P. acnes 889 and ATCC 11828 treatments. Finally, we measured the amount of secreted short chain fatty acids (SCFA) in the P. acnes 889, 6609 and ATCC 11828-treated HPV-KER supernatant samples by mass spectrometry. These studies revealed marked differences in the amount of secreted PA; high dose treatment of the 889 and ATCC 11828 strains leading to higher levels.

P. acnes-induced cellular changes depend on the type and amount of the applied bacterial strains. The observed differences may be due to variations of the amount of a secreted metabolic end-product, PA. Together with other bacterially-derived molecules it may be an active contributor of the P. acnes-induced cellular changes.

CHARACTERIZATION OF INTERLEUKIN-1B PRODUCTION IN MYELOID CELLS IN RESPONSE TO THE FUNGAL PATHOGENS CANDIDA ALBICANS AND CANDIDA PARAPSILOSIS

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Introduction: Candida albicans and C. parapsilosis are clinically significant opportunistic fungal pathogens. Interleukin-1β (IL-1β), which is released from myeloid cells upon inflammasome activation, plays a crucial role in antifungal immunity. We have previously shown that C. parapsilosis induces lower T helper 17 (Th17) differentiation in comparison to C. albicans. In this study, we characterized the production of IL-1β in response to Candida albicans and Candida parapsilosis.

Methods: Freshly isolated human peripheral blood mononuclear cells (PBMCs; $5x10^5$) were stimulated with C. albicans or C. parapsilosis at an MOI of 0.02 for 24 h. PMA-induced (10 nM, 24 h) THP-1 monocytes ($5x10^5$) were stimulated with different amounts of C. albicans or C. parapsilosis for 24 h in the presence or absence of specific inhibitors. The con-