Harmless Rocaglamide makes Apoptosis Inducing Drugs more Effective (P-822)

Keywords
- Sensitization of tumor cells to conventional chemotherapy (e.g. 5-FU, Gemcitabine) without effecting normal cells
- reduction of side effects due to decreased dose treatments
- Improvement of patient’s condition during chemotherapy

Abstract
Eliminating cancer cells by induction of apoptosis is a promising approach in clinical oncology. Unfortunately apoptosis-inducing drugs often damage normal cells leading to undesirable side effects for the patients during chemotherapy. Dose reduction of apoptosis inducers would therefore dramatically improve the patient’s condition during cancer treatment. So methods or compounds which sensitize tumour cells towards chemotherapeutic agents while leaving normal cells unaffected are of urgent need in practice. The current invention is based on the finding that rocaglamide makes tumour cells more susceptible to anti-proliferative chemotherapeutic agents while leaving normal cells unaffected.

The Technology
Combining rocaglamide with conventional chemotherapeutic drugs like 5FU, gemcitabine or substances inducing the extrinsic apoptotic pathway like TRAIL showed a dramatic increase in the sensitivity of tumour cells against these substances. Most important normal cells were not sensitized by use of rocaglamide. This was shown in vitro [see Figure below] as well as in animal experiments, holding the promise that combination of state of the art chemotherapy with rocaglamide allows for reducing drug dose and side effects, while leaving effectiveness of the therapy unaltered.

Development Stage
In vivo and vitro studies showing the sensitizing effect of rocaglamide [see References].

Applications and Commercial Opportunity
DKFZ is looking for a licensing or collaboration partner for its technology to further develop rocaglamide applications.

Inventors
The investigators are Li-Weber M. and Krammer P. both employees of DKFZ.

Intellectual Property
An US and an European patent application have been filed in November 2009. US: 13/130,019; EP: 09752868.1

References:

DKFZ Contact:
Dr. Christian Kliem
Deutsches Krebsforschungszentrum
Technology Transfer Office T010
Email: C.Kliem@dkfz.de
Tel.: +49-(0)6221-42-2948
Fax: +49-(0)6221-42-2956
Effect of rocaglamide in combination with different anticancer agents on different cancer cell lines.