NEW CRYPTOPHYCINS FOR ADC AND SMDC

Ref-Nr: TA-5817

HINTERGRUND

Cryptophycins are discussed as potential medicaments against cancer due to their high cytotoxic and cytostatic effect. They target tubulin and block the microtubule formation, leading to high cytotoxicity against many cancer cell lines. Moreover, as they are a weak target for the P-gp efflux pump, the cytotoxicity is only slightly reduced in multidrug-resistant (MDR) cancer cells. Due to these characteristics, several cryptophycin analogues were investigated as chemotherapeutics and cryptophycin-52 was even brought to the clinics. However, these were discontinued in phase II because of neurotoxic side effects and insufficient efficacy. These effects made a direct approach unusable for cancer treatment so far.

LÖSUNG

To circumvent such side effects, cryptophycin could be used as payload for drug-conjugates. For treatment of solid tumours ADCs have only little effects, therefore SMDCs have more advantages in relation. To date, there are only few ADCs approved for cancer therapy and higher diversity is desirable to compensate for emerging resistances. In addition, there is also need in the art for novel, highly potent toxins, with no cryptophycin-based ADCs being approved so far.

The present invention combines new synthetic ways to new Cryptophycin derivatives with alternative conjugation possibilites and pico-molar cytotoxicities, for ADC and SMDC synthesis. It can be linked to selective antibodies, peptides or other ligands which address tumour antigens and may therefore be used for anticancer therapy.

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ENTWICKLUNGSSTAND

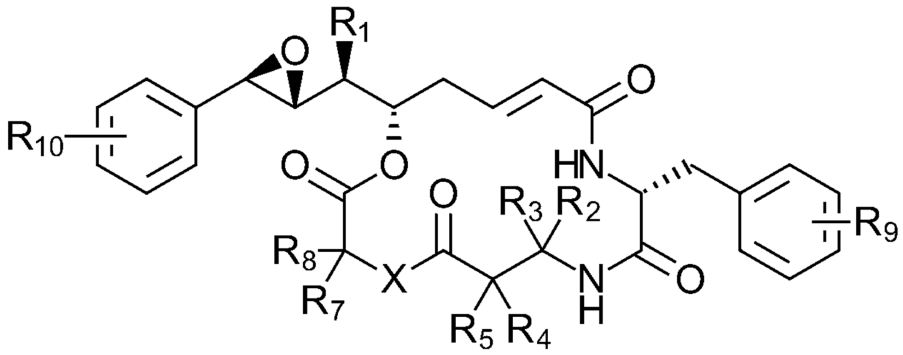
Funktionsnachweis

PATENTSITUATION

EP anhängig

CATEGORIES

//Medizin und Pharma //Therapie und Wirkstoffe //Rote Biotechnologie



General formula of cryptophycin compound.

VORTEILE

- High potent cytostatic and cytotoxic effect
- Less side effects
- Novel access via conjugation in alternative position
- Higher yields in synthesis
- New cryptophycin payloads

ANWENDUNGSBEREICHE

The present invention allows for new strategies in the semisynthetic synthesis of ADCs and SMDCs for treatment of cancer. On behalf of University of Bielefeld, PROvendis offers a patent license as well as a research collaboration with licensing option to innovative companies.

SERVICE

In case of interest, we will be pleased to inform you about the patent status.

PUBLIKATIONEN & VERWEISE

Anselmi M, Borbély A, Figueras E, Michalek C, Kemker I, Gentilucci L, Sewald N.; “Linker Hydrophilicity Modulates the Anticancer Activity of RGD-Cryptophycin Conjugates.”; Chemistry. 2021, 27(3),1015-1022

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Cryptophycin Conjugates.“; Chemistry. 2020, 26(12), 2602-2605