



New traceless hydrazone linkers for solid-phase synthesis

Introduction:

Range of linkers which have been used in solid-phase synthesis differ in functional group incorporated to target compounds, chemical stability and conditions for cleavage of final compounds from solid-phase. The desired compound can be cleaved e.g. by acid or base, hydrogenolytically, enzymatically, etc. The conditions used for cleavage then cannot be used for transformation of compound immobilized on solid support. Thus, the development of new types of linkers can bring new possibilities for solid phase synthesis in terms of reaction conditions and structure of final compounds.

Technology description:

Currently, the traceless linkers, which introduce aliphatic or aromatic hydrogen to target compound after cleavage from solid phase, are very important for effective development and preparation of library of new compounds. We have developed methodology for preparation and use of hydrazone derivatives immobilized on polymer support, which serve as a linker between solid phase and any organic fragment. The hydrazone linker is stable under acidic and basic conditions and also toward reductive agents. However, the target molecule can be cleaved under very mild conditions by the use of trimethylsilylanolate salt at room temperature and atmospheric pressure.

Advantages over existing solutions:

Till now, a range of traceless linkers for solid phase synthesis have been developed. However, all of them suffer from important drawback. The use of silyl and germanium linkers is limited for neutral and basic conditions; sulfone linkers are very stable, but cleavage is accomplished by costly organometallic agents. Hydrazone linkers described previously are then cleaved by drastic conditions (strong oxidation agent, heating) which together with low yield limit their potential applications. On the other hand, our developed hydrazone linker is stable enough to perform a broad spectrum of chemical transformations of organic fragment, which can be finally cleaved from solid support under mild conditions.

Development status:

Prototype

IP protection:

CZ 306100

Commercial offer:

Exclusive/non-exclusive license to the patent, related know-how and data

Technology/IP owners:

Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry, Palacky University, Olomouc

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More information is available upon signing a CDA/NDA. Please contact IMTM's director (director@imtm.upol.cz) or the technology transfer office (tto@imtm.upol.cz)

