

Technology Offer

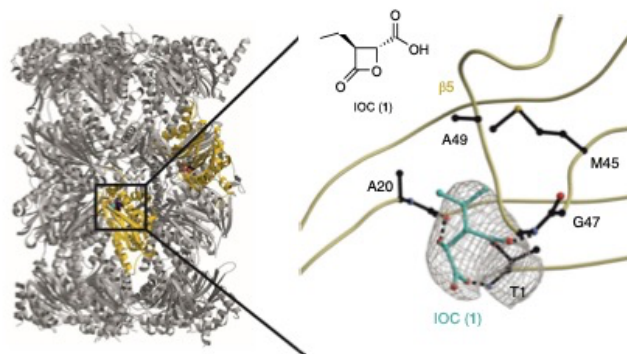
Novel 20S proteasome inhibitors

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The proteasome is a central component of the protein degradation machinery in eukaryotic cells and plays a role in regulating cell cycle, neoplastic growth and metastasis. Disruption of this degradative process with small molecule inhibitors against one or more catalytic subunits has implications in a number of human diseases such as cancer, inflammation and ischemic stroke and has exposed the proteasome as an important therapeutic target. Three proteasome inhibitors have so far received regulatory approval: bortezomib, carfilzomib and ixazomib. However, since primary resistance to proteasome inhibitors remains a challenge in patients, there is a continued need for new and/or improved proteasome inhibitors.

Technology

Scientists from the Max-Planck-Institute for Terrestrial Microbiology have identified novel beta-lactone inhibitors from γ -proteobacteria. The compounds specifically inhibit the eukaryotic 20S proteasome by covalently linking to subunit $\beta 5$.



The compounds can be used

- in proteasome inhibitor therapies against cancer, infectious, inflammatory or autoimmune diseases
- as disinfection or sterilization agents of inanimate objects
- in plant protection or control of plant diseases.

We are now looking for a collaboration partner to further develop the compounds.

Patent Information

A PCT application was filed on November, 15th 2022: WO2023084124A1.

Publication

Yi-Ming Shi et al., *Nature* 2022. <https://doi.org/10.1038/s41557-022-00923-2>

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