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Philogen
innovating targeting

Philogen announces new publication in Nature Chemistry

The study describes the synthesis and validation of a novel DNA-encoded chemical library (SO-DEL) comprising 3,735,936 chemical compounds and featuring the compact, rigid, and chiral 4-amino proline scaffold. The library enabled the identification of highly potent and selective binders for several targets of pharmaceutical interest. The newly discovered ligands presented exceptional in vivo targeting performance and provide the basis for the development of new drug prototypes for diagnostic and therapeutic applications.

Siena, Italy, July 4, 2023 - Philogen S.p.A., a clinical-stage biotechnology company focused on the development of innovative drugs based on tumor-targeting antibodies and small molecule ligands, announces the publication of a new study in the peer-reviewed journal *Nature Chemistry*. The study was conducted by scientists at Philochem AG, the wholly owned Swiss subsidiary company of the Philogen group. The paper can be accessed on the Nature Chemistry website at the following link.

The identification of small molecule ligands which selectively bind to a protein target of interest is a central problem in chemistry. DNA-encoded chemical libraries (DELs) have emerged in the past two decades as promising and cost-effective tools for the *de novo* discovery of small molecule ligands. The Nature Chemistry publication describes the generation of SO-DEL, a DNA-Encoded Chemical Library with a chiral central scaffold which enabled the isolation of novel small organic ligands specific to tumor-associated antigens (i.e., Carbonic Anhydrase IX and Prostate-Specific Membrane Antigen) and a COVID-19 related target. The ligands may represent the basis for the development of novel drug prototypes for imaging and therapeutic applications in oncology and infectious diseases.

Dario Neri, CEO and CSO of Philogen commented: "SO-DEL is, to the best of our knowledge, the most productive DEL reported in literature. The incorporation of rigid and stereo-defined scaffolds may represent a useful design principle for the construction of future DELs. The ligands generated with this approach may serve as starting point for the development of novel targeted pharmaceuticals."

Philogen Group Description

Philogen is an Italian-Swiss company active in the biotechnology sector, specialized in the research and development of pharmaceutical products for the treatment of highly lethal diseases. The Group mainly discovers and develops targeted anticancer drugs, exploiting high-affinity ligands for tumor markers (also called tumor antigens). These ligands - human monoclonal antibodies or small organic molecules - are identified using Antibody Phage Display Libraries and DNA-Encoded Chemical Library technologies.

The Group's main therapeutic strategy for the treatment of these diseases is represented by the so-called tumor targeting. This approach is based on the use of ligands capable of selectively delivering very potent therapeutic active ingredients (such as pro-inflammatory cytokines) to the tumor mass, sparing healthy tissues. Over the years, Philogen has mainly developed monoclonal antibody-based ligands that are specific for antigens expressed in tumor-associated blood vessels, but not expressed in blood vessels associated with healthy tissues. These antigens are usually more abundant and more stable than those expressed directly on the surface of tumor cells. This approach, so called vascular targeting, is used for most of the projects pursued by the Group.

The Group's objective is to generate, develop and market innovative products for the treatment of diseases for which medical science has not yet identified satisfactory therapies. This is achieved by exploiting (i) proprietary technologies for the isolation of ligands that react with antigens present in certain diseases, (ii) experience in the development of products targeted at the tissues affected by the disease, (iii) experience in drug manufacturing and development, and (iv) an extensive portfolio of patents and intellectual property rights.

Although the Group's drugs are primarily oncology applications, the targeting approach is also potentially applicable to other diseases, such as certain chronic inflammatory diseases and microbial infections.

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