



First Health Pharmaceuticals BV is a European pharmaceutical company with research centres in The Netherlands, Italy and India and a substantial network of worldwide academic collaborations.

The company is specialized in oncology and antiviral agents and has its headquarters at the Amsterdam Science Park.

HIV Translation Inhibitors

First Health Pharmaceuticals has a complete HIV pipeline. Besides our First in Class Translation Inhibitors, we also have proprietary Toll-like Receptor activators (TLR) for use in Shock & Kill strategies as well as a new generation of HIV Entry Inhibitors, for use in Anti-Retroviral combination therapies together with our Translation Inhibitors.

First Health Pharmaceuticals is currently a partner in three major international HIV research projects focusing on Latency Reversal, Reservoir Reduction, Shock & Kill solutions and new drug combinations.



First Health Pharmaceuticals developed the first ever generation of highly active ART Translation Inhibitors which block the viral replication within HIV infected cells. In addition HIV Translation Inhibitors:

- Are active against all ART resistant strains
- Mitigate inflammatory processes, including TAT
- Induce apoptosis in HIV infected cells
- Block infected cells from producing new viral particles
- Are an excellent addition to existing ART combinations
- Are non toxic towards non infected cells

EACS-2019 Parallel Sessions

During EACS-2019 we will organise parallel sessions at the Grand Hotel *Les Trois Rois*, at walking distance of the EACS conference location. These sessions will take place at the top floor suite and are by invitation only, but you are welcome to contact us at EACS2019@firsthealthpharma.com or by phone at +39 340 978 1132



Grand Hotel Les Trois Rois - Blumenrain 8 – Basel

First Health Pharmaceuticals – Top Floor Suite

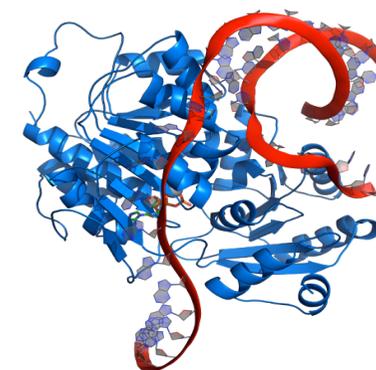
RNA Helicase Inhibitors

The core technology of the company is based on the inhibition of Human RNA helicase proteins by means of molecules developed through state of the art Computational Drug Development techniques.

Our research group has been able to develop the first ever compounds with high inhibitory effect towards a selection of RNA Helicase enzymes such as DDX3. In-vitro biological assays performed on several viruses have demonstrated the powerful potential of these compounds against important viruses.

RNA Helicases are helper molecules or “cofactor” motor enzymes that are involved in various aspects of RNA metabolism and protein translation, as well as in the transport of RNA molecules from the nucleus to the cytoplasm.

After binding to an RNA molecule, the helicases move like a zipper along the double stranded RNA to unwind it. This is a key step in the entire process of protein translation.

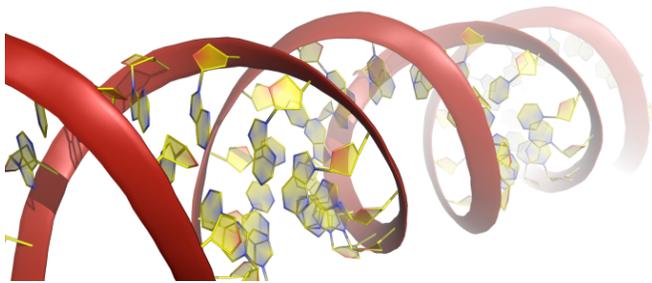


DDX3 protein (blue ribbon) unwinding double strand RNA (red strands)

Cancer - Targeted Therapies

First Health Pharmaceuticals has been equally successful with its extensive oncology pipeline, developing patented compounds active against some of the most challenging types of cancer such as Triple Negative Breast Cancer, Lung Cancer, Liver Cancer, Glioblastoma and Leukaemia.

The Translation Inhibitors are cytotoxic against cancer cells by inducing cell cycle arrest and subsequent apoptosis by interfering with down-stream pathways fundamental for cancer cell proliferation but not essential for normal cells.



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DDX3 and Viral Replication

The family of human DDX RNA helicases, and in particular our target DDX3, is associated with the replication of a wide array of challenging viral pathogens, such as HIV, Hepatitis C Virus, Dengue Virus and other dangerous tropical viruses and inhibition of this enzyme has proven to effectively neutralize these viruses.



Our compounds act simultaneously on the transport of HIV viral RNA from the nucleus and its translation, which are steps that are currently not targeted by existing anti-retroviral therapies. Therefore these compounds can be integrated in standard therapies.

Of great importance is the fact that DDX3 helicases are not part of the viral genome and as such, the development of resistance against DDX3 inhibiting drugs by the virus itself is almost impossible because the compound's activity is independent from mutations of the viral RNA sequence.

At the same time these antiviral compounds have proven to be non-toxic towards non-infected cells both in-vitro and in-vivo.

Our HIV Translation Inhibitors are highly active against all ART-resistant HIV strains, for which currently no effective treatment is available



Antivirals for the Developing World

The non-profit First Health United Foundation

In 2015, the founders of First Health established the non-profit First Health United Foundation to ensure access to its antivirals in developing countries, where the absence of proper therapies and healthcare structures to treat infections and resistance has become one of the biggest HIV emergencies.

First Health United has the full support of First Health Pharmaceuticals, which continues to contribute to the further development of its antivirals.

RNA Biochemistry: one of the most promising areas of medicinal innovation

First Health Pharmaceuticals has a leading position in the field of RNA biochemistry and aims to consolidate this position and expand its portfolio of highly active patented lead compounds in order to establish a strong and independent position that will guarantee its commitments towards developing countries.