

# The role of a bacterial clearance pathway in the picornavirus life cycle

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Evotec AG today announced a promising research result in the field of picornaviruses, published in a scientific article by Dr Thijs Brummelkamp, the co-founder of Haplogen GmbH ("Haplogen"), a biotech company based in Vienna, Austria, that develops antiviral therapeutics in a co-owned partnership with Evotec.

The article, now available in the online edition of *Nature*, describes the work performed at Dr Brummelkamp's laboratory at the Netherlands Cancer Institute. The study revealed the unexpected role of a bacterial clearance pathway in the picornavirus life cycle and further demonstrated that a key enzyme used by the virus to evade clearance (PLA2G16) represents a first-in-class drug target for a broad range of picornaviruses.

The picornavirus family leads to more frequent human infections than any other virus family and causes diseases such as the common cold and polio. Aided with a set of elegant haploid genetic screening experiments, first author Jacqueline Staring and co-workers unraveled a novel aspect of the molecular process responsible for how picornaviruses infect their human host cells. Inhibition of PLA2G16, a cellular and drugable enzyme, surrenders picornavirus particles to a clearance mechanism normally associated with bacterial infections. Animals in which the enzyme was inactivated were protected against infection whilst otherwise being healthy and fertile.

"These findings suggest that PLA2G16 can be exploited as novel

antiviral target for diseases caused by picornaviruses. Furthermore, as such drugs would target a host factor rather than a viral protein, there would be a high barrier for the virus to develop drug resistance," explains Dr Thijn Brummelkamp.

Haplogen holds the exclusive rights to use PLA2G16 against viral infections. In a partnership with Evotec, announced in November 2012, it has developed novel inhibitor compounds, which it anticipates will enter pre-clinical development in the course of 2017.

**More information:** Jacqueline Staring et al. PLA2G16 represents a switch between entry and clearance of Picornaviridae, *Nature* (2017). DOI: [10.1038/nature21032](https://doi.org/10.1038/nature21032)

Provided by Haplogen

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