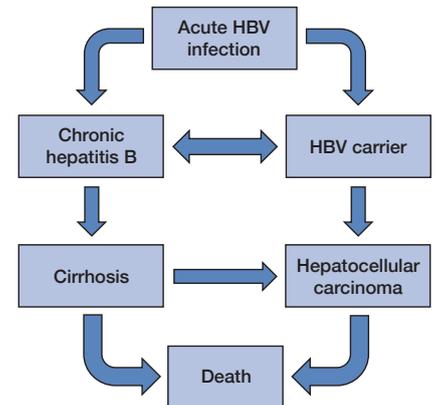


A potential cure for hepatitis B virus (HBV)

- ▶ HBV infection remains a leading cause of morbidity and mortality worldwide.
- ▶ Currently there is no curative treatment regimen.
- ▶ Targeting host cell factors that prevent apoptosis of infected cells could lead to a sterilising cure.

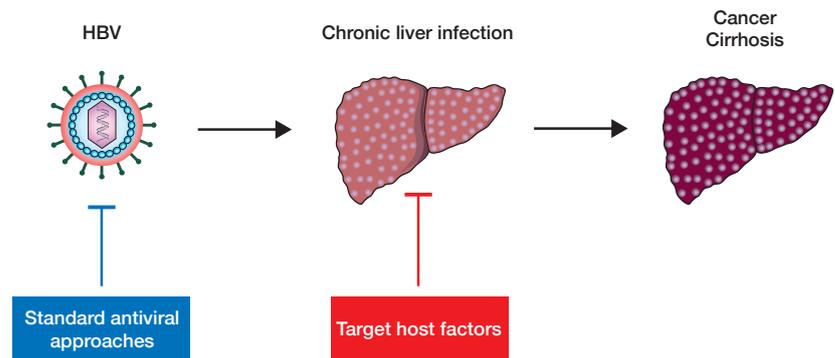
The opportunity

One third of the world's population is infected with hepatitis B virus (HBV), either as chronically infected patients (who currently require high-cost lifelong treatments) or as HBV carriers without active disease (who currently require lifelong clinical monitoring). HBV causes liver cancer, which is responsible for more which is responsible for more than 780,000 deaths worldwide. Presently, there is no cure for HBV infection.



The technology

We have demonstrated that cellular inhibitor of apoptosis proteins (cIAPs) impair clearance of HBV by preventing TNF-mediated death of infected cells. We have shown that cells infected by HBV (both actively and latently) can be preferentially targeted and cleared using inhibitors which antagonise cIAPs. Our mechanistic studies demonstrate that viral clearance requires TNF- α and CD4+T cells.



Opportunities for partnership

This is an opportunity to develop a curative treatment for HBV that targets host cell factors.

We have:

- A granted patent for a method of treating intracellular infections via Smac mimetics approach.
- Deep knowledge and expertise around Smac mimetic and cellular inhibitor of apoptosis proteins.
- Preclinical expertise including a unique model able to detect integrated HBV and cccDNA.
- Clinical expertise in HBV treatment and management; phase I and II trial design.

We are seeking a partner to:

- Initiate co-development of novel composition of matter.
- Collaborate or perform sponsored research that utilises our unique mouse models and expertise in targeting host cell factors for treatment of other diseases, for the benefit of a partner's drug development program.

Scientific team

Professor Marc Pellegrini

Infectious disease physician and Head, Infectious Diseases and Immune Defence division

At the Walter and Eliza Hall Institute our multidisciplinary research teams are focused on solving complex biological questions by integrating expertise in bioinformatics, clinical translation, computational biology, epidemiology, genomics, medicinal chemistry, proteomics, structural biology and systems biology. Our innovative science expands and improves the understanding of human biology and enables the translation of this new knowledge into novel therapies that benefit patients worldwide.

Project pipeline - available for partnering

	Project	Mode of action*	Target validation	Hit discovery	Lead generation	Lead optimisation	Indication
Cancer	Targeting minor class splicing	Inhibitor					Mutant K-Ras, B-Raf tumours
	Targeting EBV malignancies	Inhibitor					Burkitt's lymphoma
	Treating drug resistant cancers	Inhibitor					Cancer
Immune health and infection	pDC therapy for lupus	Inhibitor					Systemic lupus erythematosus
	RIPK2: Intercepting Inflammation	Inhibitor					Inflammatory bowel disease
	Rethinking CD52	Biologic					Autoimmunity
	SOCS mimetic	Inhibitor					Inflammatory bowel disease
	A complete cure for HBV	Inhibitor					Hepatitis B
	Novel malaria vaccine	Vaccine					Malaria
	Toxoplasma vaccine	Vaccine					Animal health: Toxoplasmosis
	Precision prebiotics	Prebiotic					Inflammation
	Healthy development and ageing	Precision epigenetics	Inhibitor				
FSHD epigenetic therapy		Activator					Facioscapulohumeral dystrophy
Improving retinal detachment outcomes		Inhibitor					Ophthalmology

*Activator or Inhibitor refers to small molecule compounds

To discuss partnering opportunities, please contact **Dr Anne-Laure Puaux**, Head of Commercialisation, by email partnering@wehi.edu.au.