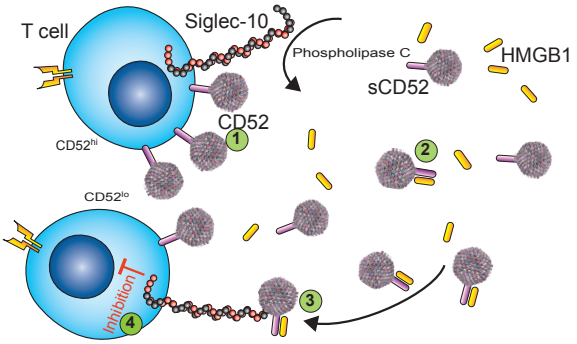
Walter+Eliza Hall Institute of Medical Research
DISCOVERIES FOR HUMANITY

Rethinking CD52: a therapy for autoimmune disease

- **Activated CD52^{hi} CD4^{+} T cells are immune-suppressive and shed soluble CD52 (sCD52).**
- **Recombinant sCD52-Fc is a promising novel therapeutic for autoimmune and chronic inflammatory disorders.**
- **Unique MOA: sCD52-Fc targets overactivated T cells, neutralises HMGB1 and suppresses innate immune responses.**

The opportunity

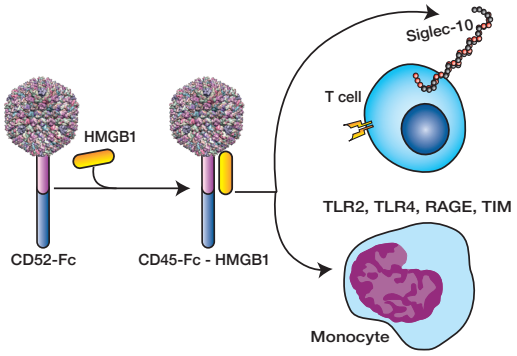
Immune and inflammatory disorders affect up to four per cent of the global population and can lead to irreversible tissue damage. Current therapies (such as immune suppressants) are sub-optimal and many are approaching the end of their patent life. CD52-based therapies promise greater clinical efficacy and represent a unique patent-protected therapeutic mechanism.



1. Activated T cells release soluble CD52, a glycopeptide
2. Soluble CD52 captures and inactivates HMGB1
3. sCD52-HMGB1 binds to suppressor Siglec-10 receptor (expressed on activated T cells)
4. Inhibition of activated T cells

The technology

Administration of soluble CD52-Fc reduces incidence of diabetes and sepsis in preclinical models, with no demonstrable adverse effects. Ongoing studies characterising key co-factors and CD52 glycosylation structure-function may yield new IP.



Opportunities for partnership

This is an opportunity to develop a soluble CD52-based novel immune checkpoint as a treatment for immune and inflammatory disorders, with a focus on psoriasis.

We have:

- Unique expertise in CD52 structure-function and biology, production/purification.
- Access to a range of animal models of immune and inflammatory diseases.
- Extensive patent protection fully owned and co-owned with our collaborators.

We are seeking an industry partner with:

- Technical expertise in glycosylated protein engineering.
- Commercial interest in immunology and inflammation.
- Experience in designing a pathway to clinical trials for biologics.

Scientific team

Professor Len C. Harrison
Laboratory head, Population Health and Immunity division

Dr Esther Bandala-Sanchez
Senior scientist, Population Health and Immunity division

Partnering opportunities

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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					Prader-Willi Syndrome
	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**.