PRECISION for medicine

PRECISION epiontisid®

Advanced Immune Monitoring in Pediatric Studies With Epiontis ID®

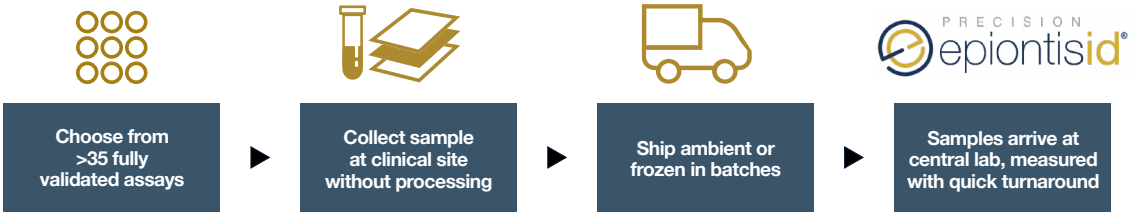
Pediatric studies present a unique set of challenges. These trials require specialized approaches to navigate the practical difficulties of sample collection in younger populations and the challenges of producing accurate and reliable data from noninvasive sample collection techniques, which typically yield lower sample volumes.

Epigenetic immune monitoring with Epiontis ID® not only enables researchers to overcome these challenges but also excels in producing reliable, accurate, and reproducible data, even when sample volumes are minimal.

Epiontis ID®—A Unique Solution to Complex Pediatric Study Challenges

Challenge	Solution
Limited sample volume from pediatric patients and minimizing discomfort and pain and reducing risk of iatrogenic anemia	Epiontis ID® produces precise results with less than 75 mL of blood drawn from the heel or finger, reducing discomfort and risk.

Challenge	Solution
Simplifying study logistics and increasing flexibility	Epiontis ID® is compatible with various samples like dried blood spots, whole blood, and tissue, with minimal processing. Samples can be transported at ambient temperature within 3 days or sent frozen in batches.



Challenge	Solution
Ensuring precise, reproducible, and rapid results	Epiontis ID® is operator independent with a fully automated process and over 35 validated assays. It offers a quick turnaround and a highly reliable result.

Epiontis ID®—Combining the Power of Epigenetics and the Consistency of qPCR

Epiontis ID® uses unique methylation patterns to distinguish cell types, as all cells have the same DNA but differ in gene expression. It amplifies demethylated DNA regions in specific cells using a custom process and qPCR primers, allowing precise cell count in any sample.

Sample containing a mixture of target (gold) and nontarget cells (blue)

Bisulfite sequence conversion of specific demethylated DNA sequences, which are demethylated only in target cells

ATTCGGATCGGCGTATA

ATTUGGATUGGUGTATA

Automated DNA purification, followed by addition of specially designed PCR primers, which amplify only bisulfite-converted targets

qPCR results delivering a precise count of the number of target cells present in the sample

Monitored cell type	Percent cells in sample	Cells per microliter blood
Tregs	1.97%	100
T cells (CD3+)	17.30%	884
T helper cells (CD4+)	12.92%	660
Cytotoxic T cells (CD8+)	3.94%	201

Customizable, Validated Assays Ready to Run

The Epiontis ID® team constantly adds new cell types, often based on client needs. We offer a comprehensive biomarker strategy using Epiontis ID® and other technologies for clinical development. Over 35 validated assays are currently available, with more being added regularly.

T Lymphocytes	Other Immune Cells	Exhaustion/Activation/ Migration Markers	Other Cell Types (Fibrocytes)
CD3 T cells	B cells	PD1+ cells	Col1A1+ cells
CD4 T cells	NK cells	TIGIT+ cells	PDGFRB+ cells
CD8 T cells	Neutrophils	CTLA4+ cells	
Regulatory T cells	Eosinophils	LAG3+ cells	
Th17 cells	Basophils	CXCR3+ cells	
TFH cells	Monocytes	Granulysin+ cells	
Gamma delta (γδ) T cells	NC monocytes	CCR7+ cells	
GATA3+ cells	Monocytic MDSC	IL6R+ cells	
CD4 memory T cells	Plasmacytoid DC	CCR6+ cells	
CD8 naive T cells	Naive B cells	CRTH2+ cells	
	Memory B cells	S1PR1+ cells	
	IgM+ B cells	S1PR5+ cells	
		Integrin alpha 4+ cells	

Proven Clinical Utility

Epiontis ID® has been routinely used in phase 1 to phase 4 studies by some of the most prominent biopharmaceutical companies, including as a secondary outcome measure.

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Rev. 01

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