

SCCA2 & PERIOSTIN.

BIOMARKERS FOR ALLERGIC INFLAMMATION.



PERIOSTIN.

The Periostin ELISA is a precise and proven tool for phenotyping of individuals with allergic inflammatory airway conditions.

The Shino-Test Periostin ELISA has been widely used in clinical trials.¹ It is cited in many publications, which are cross referenced in Ono et al. and as such has proven its usefulness for stratification purposes.

Periostin is a secreted extracellular matrix (ECM) protein - originally identified in cells from the mesenchymal lineage - that induces a vicious cycle

in the IL-4/IL-13 signaling pathway. IL-13 plays an important role in the induction of airway disease and is thought to be responsible for the promotion of the survival of epithelial cells and further on to transformation of airway fibroblasts to myofibroblasts lead to collagen deposition. This deposition then influences the airway remodeling in asthmatic individuals.²

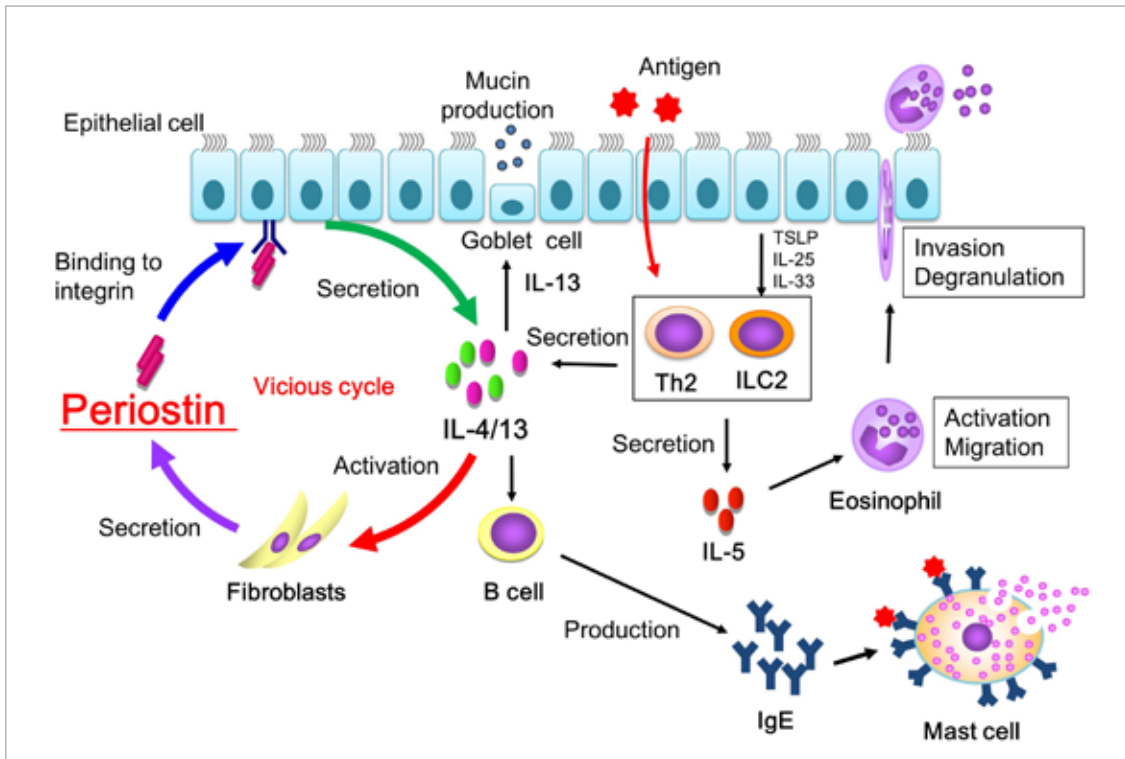


Fig 1. Periostin as an inducer of a vicious cycle in the IL-4/IL-13 release¹

Use of Periostin measurements in drug research.

Drugs targeting the IL-4/IL-13 pathway, such as Dupilumab, Tralokinumab, Lebrikizumab and many others influence the measurable periostin levels. As such the measurement of periostin is used in clinical trials as either a primary or secondary outcome measure. Some clinical trials even measure periostin kinetics (source: clinicaltrials.gov)

Parameter	Catalogue No.	Method	Reg. status
Periostin**	30151132	ELISA	RUO*

*RUO: For research use only. Not for use in diagnostic procedures.

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SCCA2.

Unlock deeper insights and improve sample management in dermatology research with the SCCA2 ELISA kit.

SCCA (squamous cell carcinoma antigen) is a serine protease inhibitor belonging to serpin superfamily.

SCCA consists of two paralogs SCCA1 (SERPIN B3) and SCCA2 (SERPIN B4, which are independent gene products, albeit with very high-amino-acid homologies of 91%. SCCA2 was, like Periostin, identified as one of the molecules, whose expression is elevated when

airway epithelial cells are stimulated with IL-4 and IL-13, two cytokines that are central in allergic responses.

Serum SCCA2 levels in children with atopic dermatitis have been reported From an Institute for Clinical Research to be significantly elevated according to the severity of the disease, even when compared with existing blood tests (see Fig. 2).³

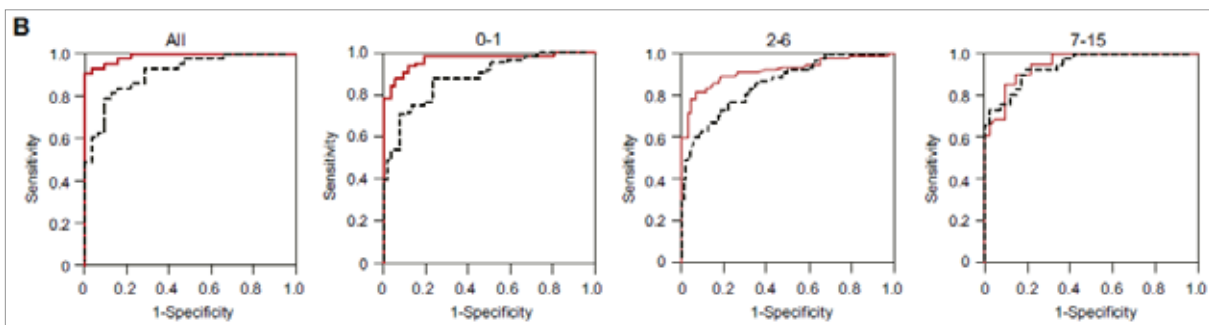


Fig. 2: ROC curve analyses of SCCA2 (red solid line) and TARC (black dashed line) in all and <1 year old, 2 to 6 years old, and 7 to 15 years old of control subjects and AD children

For treating atopic dermatitis, it is important to select and use anti-inflammatory drugs appropriately according to their severity. It was suggested in many publications, that serum SCCA2 could be a useful marker as an indicator of the severity of childhood atopic dermatitis. This was confirmed by a multicenter study reported by Nagao et al.⁴ The study results are summarized in the table below.

Severity	Number of cases	SCCA2		TARC		IgE	
		Median (ng/mL)	p-value	Median (pg/mL)	p-value	Median (IU/mL)	p-value
Non-allergic child	159 (IgE 151)	0.8	-	341	-	39.4	-
Mild disease	56	2.0	1)<0.001	885	<0.001	282	<0.001
Moderate disease	60	3.5	2)<0.01	897	NS	652	NS
Serious disease	60	10.8	3)<0.001	2530	<0.001	1869	<0.001

1)vs Non-allergic 2)vs Minor illness 3)vs Moderate disease
NS:p<0.05 (Steel-Dirassa)

As of June 2025, clinicaltrials.gov has listed 257 interventional or observational studies for atopic dermatitis and SCCA2 could be used in all these studies as stratification parameter for participants, making it an easily accessible biomarker to use. Furthermore, the assay has also been proven to be usable also in allergic skin conditions of other types such as psoriasis.⁴ For this clinicaltrials.gov lists even 289 interventional or observational studies.

Parameter	Catalogue No.	Method	Reg. status
SCCA2**	30256207	ELISA	RUO*

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Automation

Preliminary studies suggest that the 30256207 SCCA2 ELISA and the 30151132 Periostin ELISA may be suitable for automation with the Fluent; Support is available upon request. The combined use of the assays, process script, and instrument must be thoroughly evaluated and validated independently by each laboratory under their specific conditions.

Image: Tecan Fluent at Shino-Test laboratory (picture kindly provided by Shino-Test)

References

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3. Nagao, M., Inagaki, S., Kawano, T., Azuma, Y., Nomura, N., Noguchi, Y., Ohta, S., Kawaguchi, A., Odajima, H., Ohya, Y., Fujisawa, T., & Izuhara, K. (2018). SCCA2 is a reliable biomarker for evaluating pediatric atopic dermatitis. *The Journal of allergy and clinical immunology*, 141(5), 1934-1936.e11. <https://doi.org/10.1016/j.jaci.2018.01.021>
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