An innovative service for biomarker measurements directly from skin

FIBROTX **TAP**

NON-INVASIVE SKIN-ELISA

Unique R&D opportunities in dermatology and skin care

FIBROTX

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FIBROTX TAP is a non-invasive molecular diagnostic test that allows multiplex analyses of biomarkers directly from the skin surface with as yet unparalleled ease.

FIBROTX TAP is a skin-ELISA test that allows measurements of cytokines, growth-factors and anti-microbial peptides, all used by our body to control the condition of skin, directly there where it matters: On the skin!

The non-invasive nature of FIBROTX TAP technology, combined with the robustness of results and extreme ease of use, allow for unique possibilities in skin R&D studies, e.g. for biomarker research or product development purposes in skin care and clinical dermatology.

CHEMOKINES

CCL-2	C-C motif chemokine 2
CCL-27	C-C motif chemokine 27
CXCL-1/2/3	Chemokine (C-X-C motif) ligand 1/2/3 recognizing
CXCL-1/2/3	Stromal cell-derived factor 1
CXCL-8	Chemokine (C-X-C motif) ligand 8
CXCL-12	Chemokine (C-X-C motif) ligand 12

ANTIMICROBIAL PEPTIDES

hBD-1	β-defensin-1
hBD-2	β-defensin-2
hBD-4	β-defensin-4
LL-37	Antimicrobial peptide LL-37
Trappin-2	Pro-elafin

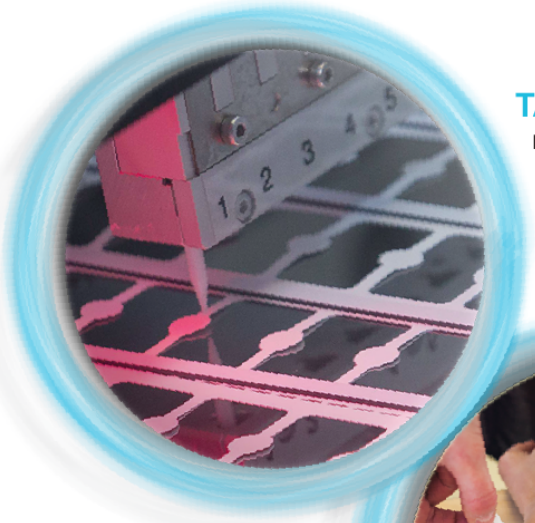
INTERLEUKINS

IL-1α	Interleukin-1α
IL-1β	Interleukin 1 beta
IL-1RA	Interleukin-1 receptor antagonist protein
IL-4	Interleukin-4
IL-6	Interleukin-6
IL-17A	Interleukin 17A
IL-12A	Interleukin 12A
IL-22	Interleukin 22
IL-23A	Interleukin 23A
IL-36α	Interleukin 36, alpha
IL-12/23	Interleukin 12 and 23 recognizing

OTHER

CRP	C-reactive protein
KLK-5	Kallikrein-related peptidase 5
TNF-α	Tumor necrosis factor-α
TL1A	Tumor necrosis factor ligand superfamily member 15
TSLP	Thymic stromal lymphopoietin
VEGF-A	Vascular endothelial growth factor A
HB-EGF	Heparin-binding EGF-like growth factor
S100A9	S100 calcium binding protein A9
AREG	Amphiregulin
RNASE7	Ribonuclease A family member 7
ISYNA1	Inositol-3-phosphate synthase 1
CML	Carboxymethyl Lysine

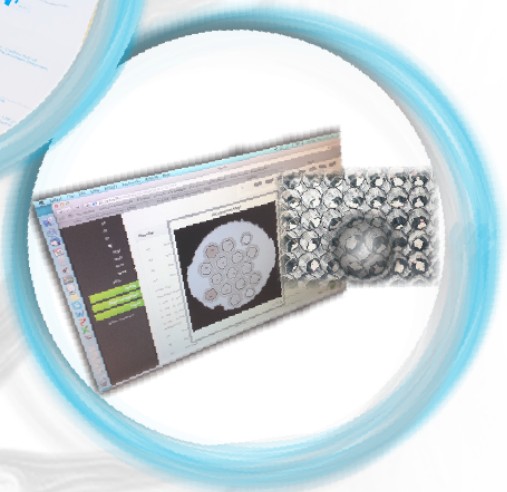
HOW IT WORKS



TAP consists of a multiplex capture-antibody microarray that is supported by a dermal adhesive bandage for easy fixture to skin.

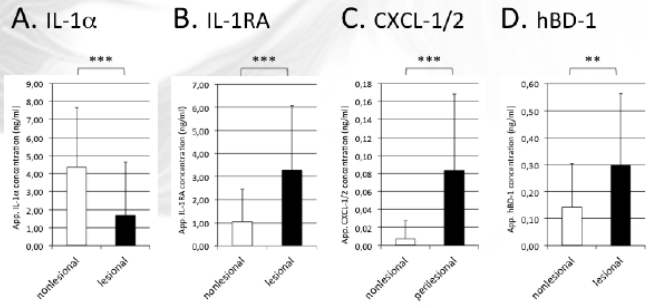
TAP is supplied in the form of kits, containing TAP(s), reagent and clear instructions.

TAP is applied to the skin for 20 minutes and then returned to FibroTx using its package



FibroTx qualitatively and quantitatively analyses biomarkers captured by TAP in immunoassays using equipment specifically developed for TAP.

EXAMPLE: TAP MEASUREMENTS OF LESIONAL VS NON-LESIONAL SKIN



Transdermal Analyses Patches (TAP) were applied to lesional and normal appearing skin from patients with psoriasis vulgaris (N = 25). Captured IL-1a, IL-1RA, CXCL-1/2 and hBD-1 were visualized and subsequently quantitatively analysed using spot-ELISA. Overall, a strong increase in IL-1RA, CXCL-1/2 and hBD-1, and a decrease of IL-1a, was observed on psoriatic lesional skin in comparison with non-lesional skin. On an individual level, IL-1RA was detected on all patients, both on lesional and non-lesional skin, showing an increase in IL-1RA on lesional skin in 23 out of 25 patients. Similarly, IL-1a was detected on all patients, both on lesional and non-lesional skin, and 23 out of 25 patients showed a decrease in IL-1a on lesional skin. Very low levels of CXCL-1/2 were found on non-lesional skin on 4 out 25 patients, whereas CXCL-1/2 was clearly detectable on lesional skin of 20 out of 25 patients. hBD-1 was found on non-lesional skin on 18 out of 25 patients, and increased amounts of hBD-1 were found on lesional skin on 18 out of 25 patients. Although a large variation was found in concentrations of IL-1a, IL-1RA, CXCL-2 and hBD-1 between individual patients, both on non-lesional and lesional skin, the differences found in expression on lesional and non-lesional skin were highly statistically significant reaching P values of less than 0.001 for IL-1a, IL-1RA, CXCL-1/2 measurements, and less than 0.01 for hBD-1.

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