



# In vitro efficacy tests

for cosmetic ingredients and  
finished products

Fields	Service	End point technologies	Cellular model
SKIN	AOP1	Measure of intracellular ROS/free radical neutralization*	HaCaT, fibroblast or other
	AOP2	Measure of Antioxidant Response Element (ARE) - Nrf2 pathway induction (reporter gene assay)	HaCaT
	AOP3	Measure of lipid peroxidation neutralization at the cell plasma membrane (AAPH/DCFHDA assay)	HaCaT, fibroblasts or other
	CAT	Measure of H <sub>2</sub> O <sub>2</sub> neutralization or catalase-like activity*	HaCaT, fibroblasts or other
	POL	Measure of neutralization of oxidative stress induced by urban dust (Standard Ref. Material 1649b)	HaCaT, fibroblasts or other
	BLUE	Measure of anti-blue light effect (Ref: 2h sun irradiation at Malaga, Spain, 02/07/2019, 12pm)*	HaCaT, fibroblasts or other
	UVA	Measure of anti-UVA effect (Ref: 35min sun irradiation at Malaga, Spain, 02/07/2019, 12pm) *	HaCaT, fibroblasts or other
	FIBR'OX	Measure of intracellular ROS/free radical neutralization* in human primary fibroblast with specific characteristics (gender, age, body mass index, anatomical localization,...)	Human primary fibroblast (DIVA Expertise)
	ADIP'OX	Measure of intracellular ROS/free radical neutralization* in human primary preadipocytes with specific characteristics (gender, age, body mass index, anatomical localization,...)	Human primary preadipocytes (DIVA Expertise)
	HYP'OX	Measure of ROS/free radical neutralization* in 3-layer human skin explant with specific characteristics (gender, age, body mass index, anatomical localization,...)	Human 3-layer human skin explant (DIVA Expertise)
HAIR	AOP1	Measure of intracellular ROS/free radical neutralization*	HFDPC**
	AOP3	Measure of lipid peroxidation neutralization at the cell plasma membrane (AAPH/DCFHDA assay)	HFDPC**
	AOP CAT	Measure of H <sub>2</sub> O <sub>2</sub> neutralization or catalase-like activity*	HFDPC**
	AOP POL	Measure of neutralization of oxidative stress induced by urban dust (Standard Ref. Material 1649b)	HFDPC**

- All assays are available for compounds, extracts, finished products
- **Related claims:** antioxidant/ anti free radical activity, anti-aging, prevents lipid peroxidation, protects against oxidative stress, activates defence against ROS, protects against air pollution, protects against blue light / UVA effects
- All experiments made on triplicates
- All studies include a full report (material and methods, comparison with standard antioxidants, samples ranking, data analysis) along with monographs for all samples
- Graphs illustrating main results are presented in a communication flyer mode
- Adaptation to alternative cell model if not available in our cell line bank (all assays but AOP2)

\* AOP patented technology

\*\* Hair Follicle Dermal Papilla Cells

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