

In vitro efficacy tests

for food supplements and
nutraceutical products



Fields	Service	End point technologies	Cellular model
EFFICACY EVALUATION: Antioxidant activity	AOP1	Measure of intracellular ROS/free radical scavenging (*)	Hepatocytes or other cell models
	AOP2	Measure of induction of Antioxidant Response Element ARE/Nrf2 - mediated pathway (Luciferase reporter of gene expression)	Hepatocytes
	AOP3	Measure of lipid peroxidation neutralization at the cell plasma membrane (AAPH/DCFHDA assay)	Hepatocytes or other cell models
	AOP CAT	Measure of H ₂ O ₂ neutralization or catalase-like activity (*)	Hepatocytes or other cell models
ABSORPTION EVALUATION: Intestinal absorption	AOP TRANS	Assessment of intestinal absorption or transepithelial transport. Measure of trans-epithelial electrical resistance (TEER). Comparison of the test sample antioxidant activity in the pre - and in the post - epithelium transport soluble fractions	Enterocyte-like models
INFLAMMATION EVALUATION	AOP IMM	Investigation of immune modulatory effects of test sample by determination of peripheral blood cell pro - inflammatory or anti - inflammatory cytokine production	PBMCs **
CELL VITALITY	LUCS	Standard measure of viability/cytotoxicity (at 1h, 4 h, 24 h) (*)	All models

* AOP patented technology

** PBMCs Peripheral Blood Mononuclear Cells

- All assays are available for compounds, extracts, finished products.
- Related claims: antioxidant / anti - free radical / scavenger activity, prevents lipid peroxidation, protects against oxidative stress, activates defence against ROS, cytoprotective effect, immunomodulatory capacity
- All studies include a full report (material and methods, comparison with standard antioxidants, samples ranking, data analysis) along with monographs for all samples (antioxidant indices, dose-effect curves, efficacy concentrations EC₅₀, EC₁₀, EC₉₀, CI 95%).
- All experiments made on triplicates in a dose-response mode (7-9 concentrations) and replicated in order to find the right concentration range if needed, all assays (but AOP3) include a cytotoxicity assessment.
- 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)