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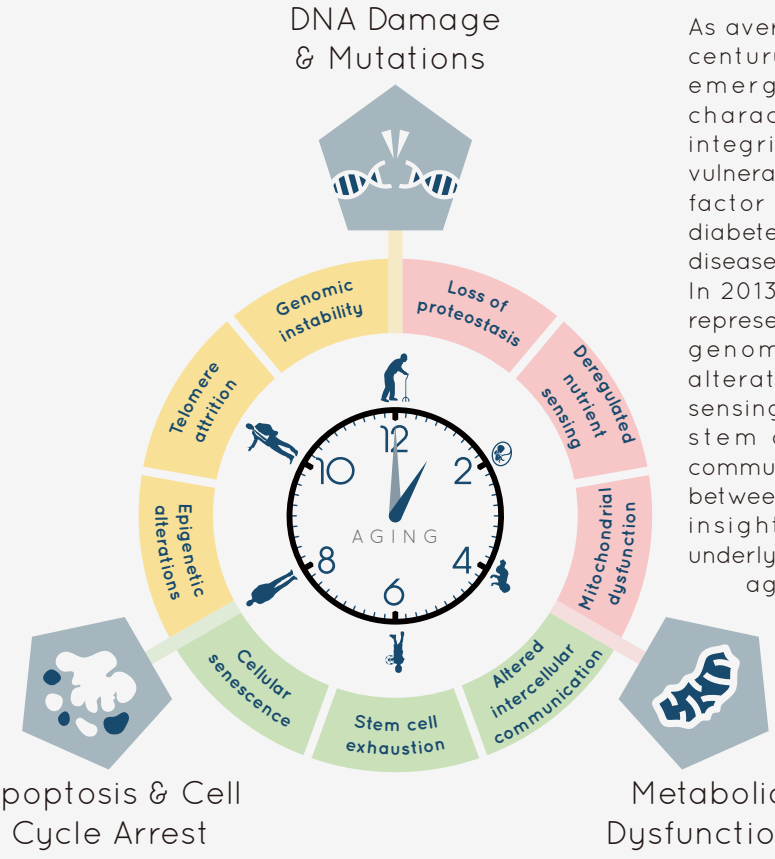
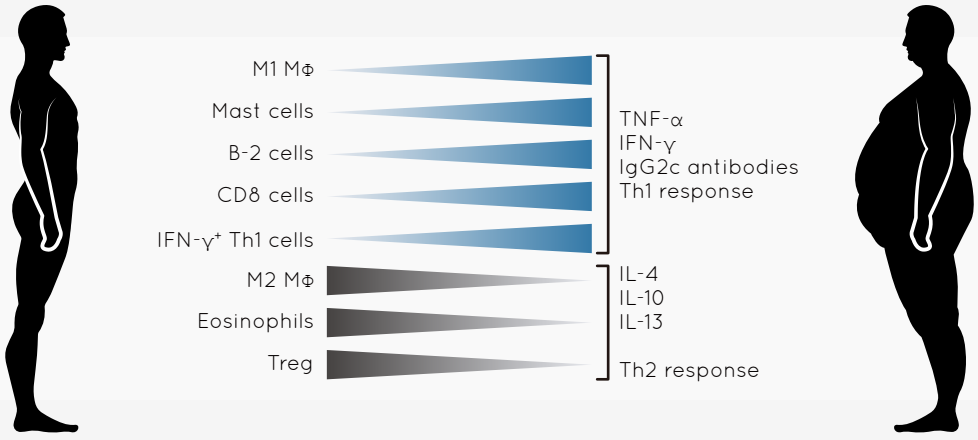
Immunometabolism

Antibody • Duo • ELISA kit



As average human being lives longer as compared to a century ago, aging and age-related diseases has also emerged as huge issues on our society. Aging is characterized by a progressive loss of physiological integrity, leading to impaired function and increased vulnerability to death. This deterioration is the primary risk factor for major human pathologies, including cancer, diabetes, cardiovascular disorders, and neurodegenerative diseases.

In 2013, Lopez-Otin et al. reviewed nine hallmarks that represent most impactful denominators of aging, including genomic instability, telomere attrition, epigenetic alterations, loss of proteostasis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intercellular communication. Recently, Immunometabolism, the interplay between immunological and metabolic processes, revealed insights that incorrect metabolic functions are the underlying cause of aberrant immune responses resulting in age-related diseases. For instance, the population of immune cells varies between normal weight and obese subjects, contributing differently to the occurrence of diabetes and insulin resistance (see figure below). On the other hand, mitochondrial malfunctions activates inflammasome complexes and cause inflammation upon over-production of active IL-1 beta.



References:
Lopez-Otin et al. Cell. (2013) 153(6): 1194-1217
Loftus and Finlay. JBC. (2016) 291(1): 1-10
Judith Campisi. Ann Rev Physiology. (2013) 75:685-705
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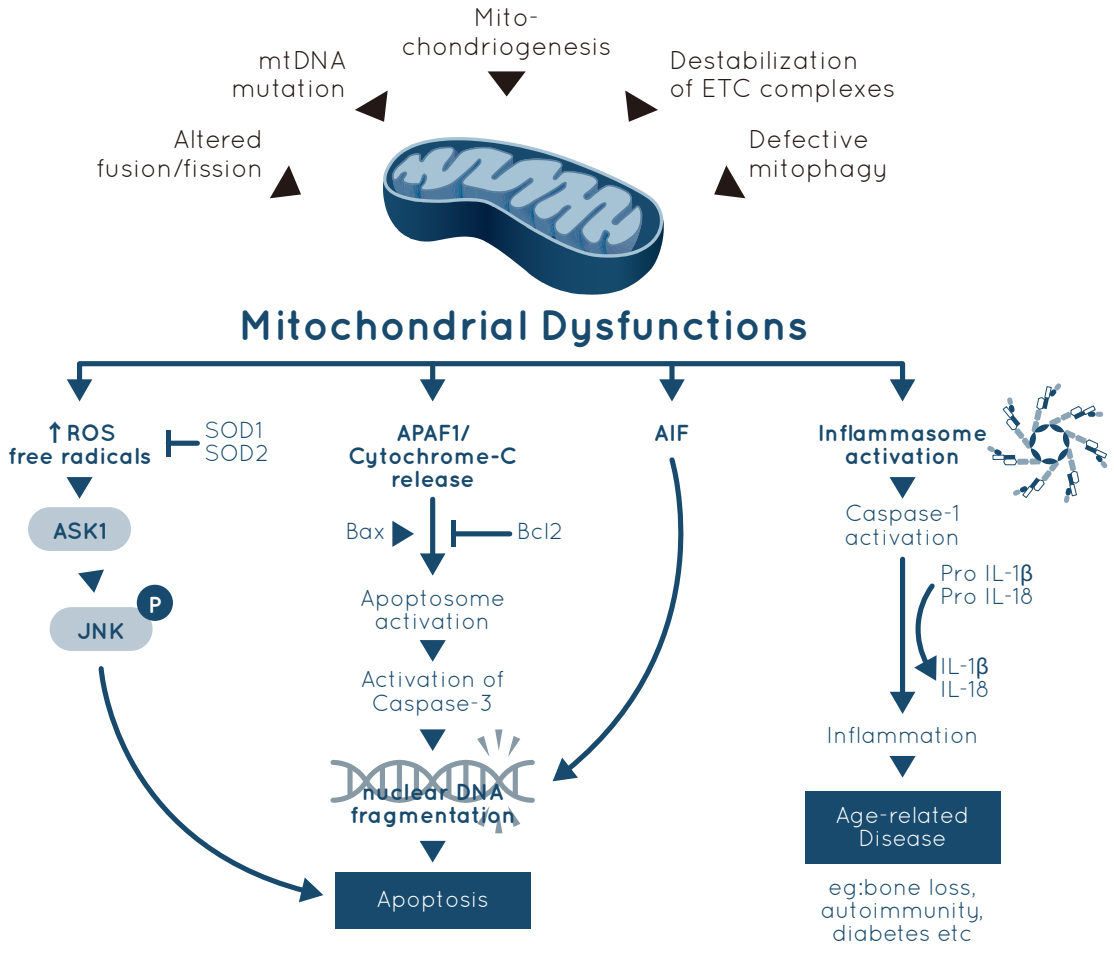
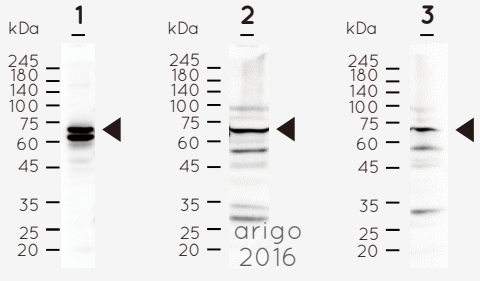


▼ Antibodies/ELISA Kits for the study of Mitochondrial Dysfunctions

Antibodies

arigo Cat.	Target	Clonality	Application	Reactivity
ARG54380	AIF	Polyclonal	WB, IHC	Human, Mouse, Rat

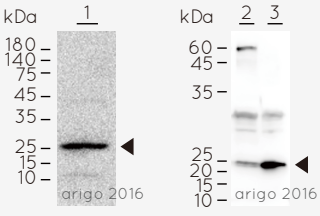


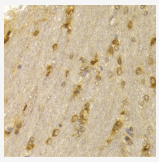
Human retina

Apoptosis inducing factor (AIF) is involved in initiating a caspase-independent pathway of apoptosis by causing DNA fragmentation and chromatin condensation.

(1) Jurkat, (2) Mouse heart, (3) Rat heart

ARG51124	ASK1	Polyclonal	WB, IHC-P, ICC/IF	Human, Mouse
ARG54941	BAX	Polyclonal	FACS, ICC/IF, IHC, IP, WB	Human, Mouse
ARG65612	BAX	Polyclonal	ELISA, IHC-P, WB	Human, Mouse, Rat
ARG65415	BCL2	Monoclonal	FACS, ICC/IF, IHC-P, IHC-Fr, IP, WB	Human
ARG55188	BCL2	Polyclonal	IHC-P, WB	Human, Rat





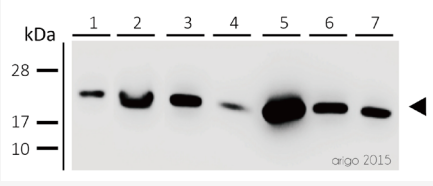
Rat brain

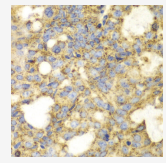
Bcl-2 is an important anti-apoptotic protein and is thus classified as an oncogene.

(1) Jurkat cell, (2) Mouse brain, (3) Rat brain

ARG20055	BID	Polyclonal	WB, IP, IHC	Human
ARG55177	Caspase 12	Polyclonal	ELISA, IHC, WB, ICC/IF	Human, Mouse, Rat
ARG54938	Caspase 3	Polyclonal	ICC/IF, IHC, IP, WB	Human, Mouse, Rat

arigo Cat.	Target	Clonality	Application	Reactivity
ARG54155	Caspase 9	Monoclonal	WB	Human
ARG62461	Cytochrome C	Monoclonal	IP, ICC/IF, FACS	Human, Mouse, Rat
ARG53487	PARP	Polyclonal	IHC-P	Human
ARG54937	SOD2	Polyclonal	ICC/IF, IHC, WB	Human, Mouse, Rat





Human oophoroma

SOD2 relieves oxidative stress by transforming toxic superoxide, a byproduct of the mitochondrial electron transport chain, into hydrogen peroxide and diatomic.

(1) HeLa, (2) HepG2, (3) MDAMB231, (4) HEK293T, (5) Mouse heart, (6) Mouse liver, and (7) Rat heart

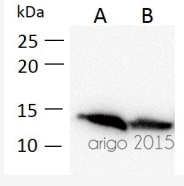
ELISA Kit

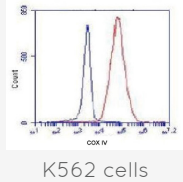
arigo Cat.	Target	Sensitivity	Range	Sample Type
ARG80928	Cu/Zn-SOD	40 pg/ml		Serum, Plasma, Cell culture supernatants
ARG80138	IL-18	8 pg/ml	15.6-1000 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80946	IL-18	62 pg/ml	125 - 8000 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80101	IL-1b	4 pg/ml	7.8-500 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80196	IL-1b	8 pg/ml	15.6-1000 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80235	IL-1b	30 pg/ml	62.5-4000 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80929	Inflammatory Cytokine multiplex			Cell culture supernatant, other biological samples

▼ Antibodies/ELISA Kits for the study of Metabolism

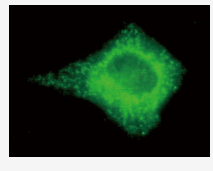
Antibodies

arigo Cat.	Target	Clonality	Application	Reactivity
ARG54705	ACAT1	Polyclonal	IHC-P, WB	Human, Mouse
ARG55353	ALDH1A1	Monoclonal	WB, ICC/IF, IHC-P	Human
ARG55209	ALDH2	Monoclonal	FACS, ICC/IF, IHC, WB	Human
ARG51172	AMPK a1/a2	Polyclonal	ICC/IF, IHC-P, WB	Human, Mouse, Rat
ARG51120	AMPKa1	Polyclonal	IHC-P, WB	Human, Mouse, Rat
ARG54003	COX IV	Monoclonal	FACS, ICC/IF, IHC, IP, WB	Goat, Hamster, Human, Monkey, Mouse, Rat





K562 cells

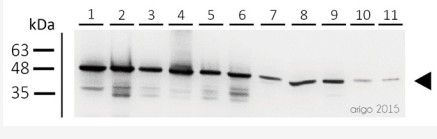


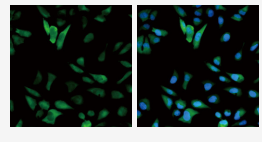
HeLa cells

COX IV plays a role in Electron Transport Chain (ETC) and can be used as mitochondrial loading control in experiments.

A: Mouse brain, B: Rat brain

ARG55304	COX IV	Polyclonal	ICC/IF, WB	Human, Mouse, Rat
ARG52899	COX2	Polyclonal	IHC-Fr, ICC/IF, ELISA, IP, IHC-P, WB	Mouse, Rat, Human, Hamster
ARG55200	DRP1/DNML1	Polyclonal	WB, ICC/IF	Human, Mouse
ARG55159	ENO1	Polyclonal	FACS, ICC/IF, IHC-P, WB	Human, Mouse, Rat
ARG54900	ENO1	Polyclonal	ICC/IF, IHC, WB	Human, Mouse, Rat





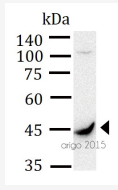
HeLa cells

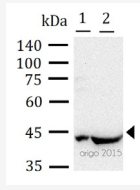
Enolase I is a glycolytic enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate during glycolysis.

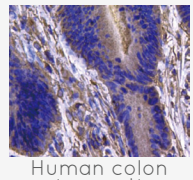
(1) MCF-7, (2) HeLa, (3) Jurkat, (4) HepG2, (5) DU145, (6) MDAMB231, (7) HEK293T, (8) Mouse heart, (9) Mouse liver, (10) Rat heart

ARG55124	FABP4	Polyclonal	WB, IHC-P, ICC/IF	Human, Mouse, Rat
ARG55164	GPX1	Polyclonal	FACS, ICC/IF, IHC-P, WB	Mouse, Rat
ARG65757	HSP27	Polyclonal	WB, ICC/IF, IHC-P	Human, Mouse
ARG54173	HSP60	Monoclonal	ICC/IF, IP, WB	Human, Mouse, Rat

arigo Cat.	Target	Clonality	Application	Reactivity
ARG65699	IDH1	Monoclonal	IHC-P, WB	Human, Mouse, Rat





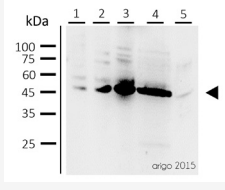


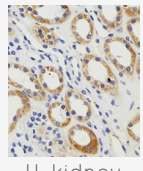
Human colon carcinoma tissue

IDH1 catalyzes the reversible oxidative decarboxylation of isocitrate to yield α-ketoglutarate (α-KG) as part of the TCA cycle in glucose metabolism.

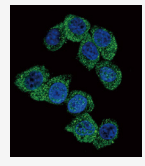
left: U87-MG cell
right: (1) Mouse brain, (2) Rat brain

ARG55374	IDH1	Polyclonal	IHC-P, ICC/IF, WB, FACS	Human, Mouse, Rat
ARG20317	IGF1	Polyclonal	WB, Neut	Mouse
ARG55235	IPTA	Polyclonal	FACS, ICC/IF, IHC, WB	Human, Mouse, Rat
ARG51203	IRS1	Polyclonal	ICC/IF, IHC, WB	Human, Mouse, Rat
ARG65729	LDHA	Polyclonal	FACS, IHC-P, WB	Human
ARG55215	LDHB	Monoclonal	WB	Human, Mouse
ARG55238	NME2	Polyclonal	ICC/IF, IHC-P, WB	Human, Mouse, Rat
ARG65748	PDI/P4HB	Polyclonal	WB, IHC-P, ICC/IF	Human, Mouse
ARG55126	PDI/P4HB	Polyclonal	WB, ICC/IF	Human, Mouse, Rat
ARG54875	PGK1	Polyclonal	FACS, ICC/IF, IHC, WB	Human, Mouse





H. kidney section



HeLa cells

PGK1 catalyzes the reversible conversion of 1,3 BP-Glycerate to 3-P Glycerate during glycolysis.

(1) DU145, (2) HepG2, (3) MEF, (4) Mouse ovary, (5) rat ovary

ARG55240	PPARA	Monoclonal	WB, FACS, ICC/IF, IHC	Human, Mouse
ARG55127	RRM1	Polyclonal	WB	Human, Mouse
ARG55465	RRM1	Polyclonal	WB, ICC/IF	Human, Mouse
ARG20178	VDAC	Polyclonal	WB, IHC	Human, Mouse, Rat, Bovine, Rabbit

ELISA Kit

arigo Cat.	Target	Sensitivity	Range	Sample Type
ARG80775	25-OH Vitamin D	2.81 ng/ml	5 - 120 ng/ml	Serum
ARG80131	Adiponectin	0.08 ng/ml	0.15-10 ng/ml	Serum, Plasma, Cell culture supernatants
ARG80132	apoA1	1.5 ng/ml	3.125-200 ng/ml	Serum, Plasma, Cell culture supernatants
ARG81097	Apolipoprotein A1	4.9 ng/ml	5 - 5000 ng/ml	Serum, Plasma, Urine
ARG80782	C-peptide	0.064 ng/ml	0.2 - 16 ng/ml	Serum, Plasma, Urine
ARG80495	IGF-1	0.09 ng/ml	2 - 50 ng/ml	Serum, Plasma
ARG80492	IGFBP1	0.02 ng/ml	0.1 - 8 ng/ml	Serum, Plasma (Heparin, EDTA)
ARG80493	IGFBP2	0.2 ng/ml	2 - 80 ng/ml	Serum, Plasma, Saliva, CSF, other body fluids
ARG80494	IGFBP3	0.1 ng/ml	0.4 - 30 ng/ml	Serum, Plasma, Liquor
ARG80741	Insulin	0.10 µg/l	0.188 - 6.9 µg/l	Serum, Plasma
ARG80126	Leptin	8 pg/ml	15.6-1000 pg/ml	Serum, Plasma, Cell culture supernatants
ARG80783	Pro-Insulin	0.5 pmol/l	2.6 - 66 pmol/l	Serum, Plasma

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