

# Measurement of Biomarkers in Animal Species

The bridge between research & development and clinical application

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- Clinical animal research
  - Preclinical drug research
  - Connecting preclinical and clinical research trials
  - Cell culture, serum, plasma and other biological fluids
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# BIOMARKERS IN ANIMAL SPECIES

Measurement of biomarkers in biological fluids of animal species based on ELISAs in the area of bone, cartilage, calcium and growth metabolism as well as kidney, cardiovascular, inflammatory and complement diseases.

## Complement testing in animal species

The determination of complement activation in animal species is an important tool in drug development.

The Pan-Specific C3 Reagent Kit represents a novel approach to fill the gap of animal-specific C-ELISAs. The C3 Complement Matrix (CCM) and the C3 Converter Reagent (CCR) in the kit convert the activity of C3 in the animal specimen to human SC5b-9 that is detectable with the SC5b-9 EIA Kit.

Thus the method allows sensitive and quantitative measurement of C3 in animal blood, plasma or serum, which, to the extent C3 has been consumed prior to the assay, also provides a measure of prior complement activation. The method presents an excellent option for the complement analysis in animals: bovine, chicken, dog, goat, guinea pig, horse, mini pig, pig, rabbit, rat, sheep and turkey. In addition, the C3a mouse assay is specific for the determination of C3a in mice and the human complement assays are suitable for several monkey species.

## RedoxSYS System for the measurement of oxidative stress

RedoxSYS System is an in vitro sensor system for the quantitative detection of oxidative stress in a biological system. Measurement of sORP and cORP (antioxidative reserves). Tested in different human and animal sample material: plasma, serum, cerebrospinal fluid as well as seminal fluid, cell culture, cell lysate and tissue media. RedoxSYS is used in clinical practice, for research purposes and the pharmaceutical industry.

## Vitellogenin measurement of endocrine disrupting effect

Vitellogenin is the precursor of yolk proteins in fish and synthesized under the influence of estrogens. Determination of Vitellogenin is of importance in evaluating the effects of estrogen and anti-estrogen disruptors as well as in a variety of physiological studies. The patented TECO Mucus Collection allows the non-invasive, repeated sampling of epidermal mucus for Vitellogenin determination and offers new opportunities in monitoring programs and to study the dynamic of endocrine disruptors within the same fish over time. All TECO Vitellogenin ELISAs are suitable for the use in blood, homogenate and mucus samples.

The TECO Vitellogenin System is based on 9 different Vitellogenin ELISA tests covering more than 37 fish species, including standard and ultra sensitive Vitellogenin ELISA tests as well as specific REACH kit configurations designed to fulfil the specific requirements for endocrine disruptor testing according to REACH and OECD guidelines.


Biomarker	Catalogue number	Bovine	Canine	Equine	Feline	Flish	Goat	Guinea pig	Monkey	Mouse	Porcine	Rabbit	Rat	Sheep
<b>BONE METABOLISM</b>														
BAP	8012	x	x	x	x		x		x	N	x	x	N	x
CICP / PICP	8003	(x)	N	N			N		x	N	x	x	N	
Helical Peptide	8022	x	x	x	x		x	x	x	x	x	x	x	x
NTX Serum	9021	x	x		x						x	x	N	x
NTX Urine	9006	x	x		x						x		N	
Osteocalcin Intact	8002	x	N	x			x	x	x	N	x	x	N	x
Osteocalcin Mouse	60-1305									x			N	
Osteocalcin Rat	60-1505		x							N			x	
Pyridinoline (Pyd) Serum	8019	x	x	x	x			x		x			x	x
Pyrilinks (Pyd + Dpd)	8010		x	x				x	x	x	x	x	x	x
Pyrilinks D (Dpd)	8007	x	x	x	N			x	x	x	x	x	x	x
Total Dpd	8032	x	x	x	x			x	x	x	x	x	x	x
<b>CARTILAGE METABOLISM</b>														
C1-2C	60 - 1002	x	x	x				(x)		x		(x)	(x)	(x)
C2C, Serum / Urine	60 - 1001	(x)	x	x				x		(x)		x	x	(x)
COMP	RD194080200			x										
CP II / PIICP	60 - 1003	(x)	(x)	(x)				(x)	(x)	(x)			(x)	
CS-846	60 - 1004	x	x	x				x		(x)		x	x	(x)
Hyaluronic Acid Plus TECO	TE1017-2		x	x						x			x	
YKL - 40	8020								x					
<b>CALCIUM METABOLISM</b>														
FGF-23 Intact (Kainos)	CY-4000									x	N		x	
FGF-23 (C-Term) 2nd Generation	60 - 6100						N		x	N	N		N	N
FGF-23 Intact, Mouse, Rat	60 - 6800									x			x	
FGF-23 Mouse (C-Term)	60 - 6300		x							x	x		x	
PTH 1-84 Bioactive Human	60 - 3000				x				x				x	
PTH 1-84 Bioactive Rat	60 - 2700		N							x	N		x	
PTH 1-84 Intact Dog	60 - 3800		x											
PTH 1-84 Intact Mouse	60 - 2305		N							x	N		x	
PTH 1-84 Intact Rat	60 - 2500	x	N							(x)	N		x	
PTH C-Terminal Human	60 - 3200													
PTH Human, Bovine, Porcine	60 - 3100	x		x			N				x			N
<b>KIDNEY BIOMARKER</b>														
Endostatin Mouse / Rat	BI-20742 MR									x			x	
NGAL Mouse	KIT 042									x				
NGAL Dog	KIT 043		x											
NGAL Pig	KIT 044										x			
NGAL Monkey	KIT 045								x					
NGAL Rat	KIT 046												x	
<b>GROWTH METABOLISM</b>														
IGFBP-2	E05		x	x	x		x							
IGFBP-2 Mouse / Rat	E08			x	x					x	x		x	
IGFBP-3 Mouse / Rat	E031									x			x	
IGF-I (BP blocked)	E20		x	x	x		x	x	x		x	x		x
IGF-I Mouse / Rat	E25									x			x	

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<b>CARDIOVASCULAR BIOMARKER</b>														
Endothelin	BI-20052		x	x	x					N	x		x	
NT-proANP	BI-20892									x	x		x	
NT-proCNP	BI-20872	x	x	x						x	x		x	x
<b>INFLAMMATION TESTS</b>														
Canine CRP TECO	TE1024	N	x	N			N			N	N		N	N
Haptoglobin - Equine TECO	TE1032			x	x									x
Haptoglobin - Feline / Canine TECO	TE1033		x		x									
<b>COMPLEMENT TESTS</b>														
C3a Mouse	TE1038									x				
Complement Animal Assay PAN	20261		x	x	x		x			(x)	x	x	x	x
<b>VITELLOGENIN BIOMARKER FOR ENDOCRINE DISRUPTERS</b>														
Cyprinid TECO	TE1037					X								
Cyprinid TECO Ultra-Sensitive	TE1046					X								
Cyprinid TECO REACH	TE1040					X								
Perch (Perciformes) TECO	TE1035					X								
Perch (Perciformes) TECO REACH	TE1039					X								
Multi Species TECO	TE1042					X								
Medaka TECO REACH	TE1043					X								
Salmonid TECO	TE1047					X								
Salmonid TECO Ultra-Sensitive	TE1049					X								
Mucus Sampling Set	TE1034					X								

N = no cross reactivity  
 (x) = low cross reactivity  
 x = cross reactivity  
 □ = not tested

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