GENAXXON bioscience

Isolation procedures of defined cell types from different species require individual protocols.

The table below show digestion conditions using Collagenase products from Genaxxon bioscience.

Cell type	Tissue	Species	Collagenase	Concentration *	Experimental conditions	
Acina cells	Pancreas	Human	Collagenase Type IV	0.05 - 0.1 PZ U/mL	1h, 37°C	
Adipocytes	Adipose	Human, mouse	Collagenase Type I or Type II	0.2 - 0.3 PZ U/mL *	30 - 45 min, 37°C	
Amnion cells	Amnion	Human	Collagenase Type IV	3.5 - 5-5 PZ U/mL	3 - 5h, 37°C	
Cardiomyocytes	Heart	Rat (adult)	Collagenase Type IV	0.5 PZ U/mL	45 - 60 min (recirculation and digestion)	If required: Hyaluronidase, Pancreatin or DNAse I
		Human	Collagenase Type IV	0.8 - 1.0 PZ U/mL	2- 3.5h, 37°C	
Chondrocytes	Cartilage	Mouse (new born)	Collagenase Type I	0.3 PZ U/mL	15 - 20 min, 37°C	Sequential digestion steps
		Human	Collagenase Type I	0.3 - 0.4 PZ U/mL	4 - 16h, 37°C	If required: Neutral Protease NB
Chondrocytes (articular)	Cartilage	Bovine	Collagenase Type I	0.2 - 0.3 PZ U/mL	14 - 16h, 37°C	
Chondrocytes (meniscal)	Fibrocartilage	Bovine	Collagenase Type I	0.2 - 0.3 PZ U/mL	14 - 16h, 37°C	
Chorion cells	Chorion	Human	Collagenase Type IV	3.5 - 5-5 PZ U/mL	3 - 5h, 37°C	
Chromaffin cells	Adrenal gland	Bovine, rat	Collagenase Type I	0.3 - 0.5 PZ U/mL	20 - 30 min, 37°C	
Endometrial cells	Endometium	Human	Collagenase Type I	0.2 - 0.3 PZ U/mL	30 min, 37°C	
Endothelial cells (HDMEC)	Foreskin	Human	Collagenase Type I or Type II	0.5 - 0.7 PZ U/mL	0.5 - 2h, 37°C	
Endothelial cells (HUVEC)	Umbilical cord	Human	Collagenase Type I	0.15 - 0.25 PZ U/mL	0.5 - 2h, 37°C	If required: Hyaluronidase
Epithelial cells	Mammary gland	Mouse	Collagenase Type I	0.34 PZ U/mL	15 - 25 min, RT	
	Thyroid glands	Human	Collagenase Type II	0.25 - 0.3 PZ U/mL	RT	If required: Dispase
Fibroblasts	Skin	Human	Collagenase Type II	0.26 PZ U/mL	2h, 37°C	
	Skin, connective tissue	Rodent	Collagenase Type II	0.2 - 0.5 PZ U/mL	12 - 20h, 37°C	
Hepatocytes	Liver	Pig	Collagenase Type IV	0.2 - 0.3 PZ U/mL	Perfusion and subsequent digestion	
		Mouse		0.08 - 0.11 PZ U/mL	5 - 15 min, 37°C	Total collagenase perfusion volume: 90 - 110mL
			Collagenase Type II		(perfusion 5 - 8mL/min)	
		Rat		0.12 - 0.15 PZ U/mL	10 - 15 min, 37°C	Total collagenase perfusion volume: 100 - 125mL
			Collagenase Type II		(perfusion 5 - 8mL/min)	
Hepatocytes (hepatic stellate cells	Liver	Human	Collagenase Type II	0.25 - 0.35 PZ U/mL	10 - 20 min, 37°C	
Islets of Langerhans	Pancreas	Human	Collagenase Type III	per gram tissue: 20 PZ units	15 - 30 min, 37°C	
		Rodent	Collagenase Type IV	1.5 - 1-7 PZ U/mL	14 - 17 min, 37°C (perfusion and subsequent digestion)	
		Pig (adult)	Collagenase Type III	per gram tissue: 15 - 18 PZ units	15 - 30 min, 37°C	
			Collagenase Type IV	per gram tissue: 4.4 PZ units	37°C	
		Pig (neonatal	Collagenase Type I	0.17 - 0.2 PZ U/mL	10 - 20 min, 37°C	
Lung cells	Lung	Mouse	Collagenase Type I	0.2 PZ U/mL	1h, 37°C	
Mastocytes	Intestinal mucosa	Human	Collagenase Type II	0.5 PZ U/mL	1h, 37°C	
Melanoma cells	Skin	Mouse	Collagenase Type IV	0.12 PZ U/mL	30 min, 37°C	
Muscle cells	Skeletal muscle	Human	Collagenase Type IV	0.4 - 0.6 PZ U/mL		
Neurons	Dorsal root ganglia	Human, rodent	Collagenase Type I	0.15 - 0.25 PZ U/mL	30 - 60 min, 37°C	
Oocytes	Ovary	Xenopus	Collagenase Type II	0.3 - 0.5 PZ U/mL	1.5 - 2h, RT	
Osteoblasts	Bone	Mouse	Collagenase Type I	0.15 - 0.25 PZ U/mL	5 - 10 min, 37°C (4 - 5 repeats)	Sequential digestion steps
		Human	Collagenase Type IV	1.5 - 2 PZ U/mL	2 - 4h, 37°C	
Schwann cells	Sciatic / peripheral nerve	Rodent	Collagenase Type I	0.2 - 0.3 PZ U/mL	1 - 3h, 37°C	If required: Trypsin or Hyaluronidase
Stem cells	Wharton's jelly	Human	Collagenase Type I	0.13 - 0.15 PZ U/mL	1 - 6h, 37°C	If required: Hyaluronidase (1mg/mL)
Stem cells (ADSC/preadipocytes)	Lipoaspirate	Human, mouse	Collagenase Type I or Type II	0.2 - 0.3 PZ U/mL	30 - 60 min, 37°C	
Tumor cells	Breast, uterus, thyroid gland, lung	Human	Collagenase Type IV	3.5 - 5.5 PZ U/mL	3 - 5h, 37°C	
	Colon	Human	Collagenase Type II	0.5- 1 PZ U/mL	RT	

Application	Cell type	Species	Collagenase	Concentration	Experimental conditions
Stem cell passaging	Human embryonic stem cells (hESC)	Human	Collagenase Type I	0.15 PZ U/mL	6 - 8 min, 37°C

1 PZ units (Wünsch units) corresponds to: 1000 Mandl units - Mandl units are used by Genaxxon bioscience on their certificates and labels.
To calculate Mandl units from given PZ (Wünsch) units just multiply by a factor of 1000.