

PORCINE BASED ORGAN EXTRACTS GUARANTEE FULL SUBSTITUTION OF BOVINE EXTRACTS¹

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SUMMARY

Activity tests on controllable systems prove the equivalence of standardized proteinfree PORCINE- and BOVINE-Placenta-Extracts: table 1. PORCINE-skin-collagen-extract and PORCINE-collagens-type I –VI are isolated, example in table 2.

The BSE-Problem, coming up in Great Britain in 1985/ 86, has in the mean time reached most other European countries. Therefore, in December 2000, Asian countries stopped the import of any material of bovine origin.

In the sixties the author² had already stated the equivalence of natural PORCINE- and BOVINE-Placenta-Extracts, applied in cosmetics and medicine. In table 1 you find a summary of data for activity tests of standardized Extracts prepared from fresh placenta glands of swine and cow including the analytical data of the quality-standard.

The manufacturing process for PORCINE-Placenta-Extracts was developed by us in 1960, used in large scale in Brasil, and later in Switzerland (1). In 1985, pepsin-solubilized PORCINE-Collagen-Extract for cosmetics and pure sterile Type I –VI – Collagens for cell-culture-research were prepared by the author together with G.Quelle, M.Z. Abedin, and I.A.Khan-Ghour (2).

PORCINE-, BOVINE, and PORCINE-Collagen-Extracts passed well the following toxicological and allergological tests (3):

Screening/ T.R.TURNER; epicutaneous sensibilisation test: guinea pig/ BÜHLER; eye- and skin-irritation tests: rabbit/DRAIZE; AMES-test; Patch-test.

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Table 1: Activity tests and quality standard of natural PORCINE- and BOVINE-Placenta-Extracts

Activity tests *	Standardized proteinfree** Placenta-Extracts	
	PORCINE	BOVINE
Metabolic activity (WARBURG-factor)	1,7-2,3	1,7-2,0
Growth test shortening of metamorphosis of tadpoles XENOPUS LAEVIS D. in days	4 – 6	4 – 6
Wound healing skin tension after 20 days diff. between exper. and control group	240	235
PADBERG-test	70 (85)****	70 (85)****
Corneometer test Humidity maintaining capacity	+	+
Analytical data after standardization	Standardized proteinfree** Placenta-Extracts	
	PORCINE	BOVINE
pH	6,7 – 6,9	
dry substance	0,40 – 0,75 %	
N	0,04 – 0,07 %	
amino acids (ninhydrin)	positive	
peptides (biuret)	positive	
nucleo acid components	positive	
hormones	negative	
heavy metals	< 20 ppm	
sterility	germfree	
* Test methods described in (4)		
** The author realized since 1965 the succesful application of several proteinfree [and enzymefree***] cosmetic additives like n-PFE, K-PFE, Cellryl + k-PFE in Evangyl, Omnithymus and most recently swine P.E.B.D.		
*** For instance: Placenta-Extracts not containing the outdata alcal. Phosphatase: 10 years research on practical use of cosmetic formulations with bovine or porcine Placenta-Extracts <u>with</u> and <u>without</u> enzymes like alcal. phosphatase confirmed that it does not make any difference if there is alcal. Phosphatase present or not (5).		
**** Control experiment data in brackets.		

Table 2: Pepsin-solublized PORCINE-skin-collagen Type I, sterile solution : 0,3 %

Formulation:	PORCINE-collagen Type I: 3 mg/ ml 0,01 n HCl
pH	2.0
Mol weight	ca. 300.000
Purity/assay/Structure	Collagen not less than 98 %. Assay by SDS-PAGE and photometric scanning of stained bands; subunit composition: Collagen Type I : [$\alpha_1(\text{I})$] ₂ $\alpha_2(\text{I})$
Bioactivity	Substrate for cell attachment and growth of hepatocytes, fibroblasts, endothelial and epithelial cells. Suitable for use in the preparation of a gel matrix and in coating surfaces (glass, plastic, beads) to enhance the maintenance, growth and differentiation of cells in the culture.
Use	Reference standard for analytical SDS-PAGE, as substrate for collagenases etc.
Microbiological tests	sterile