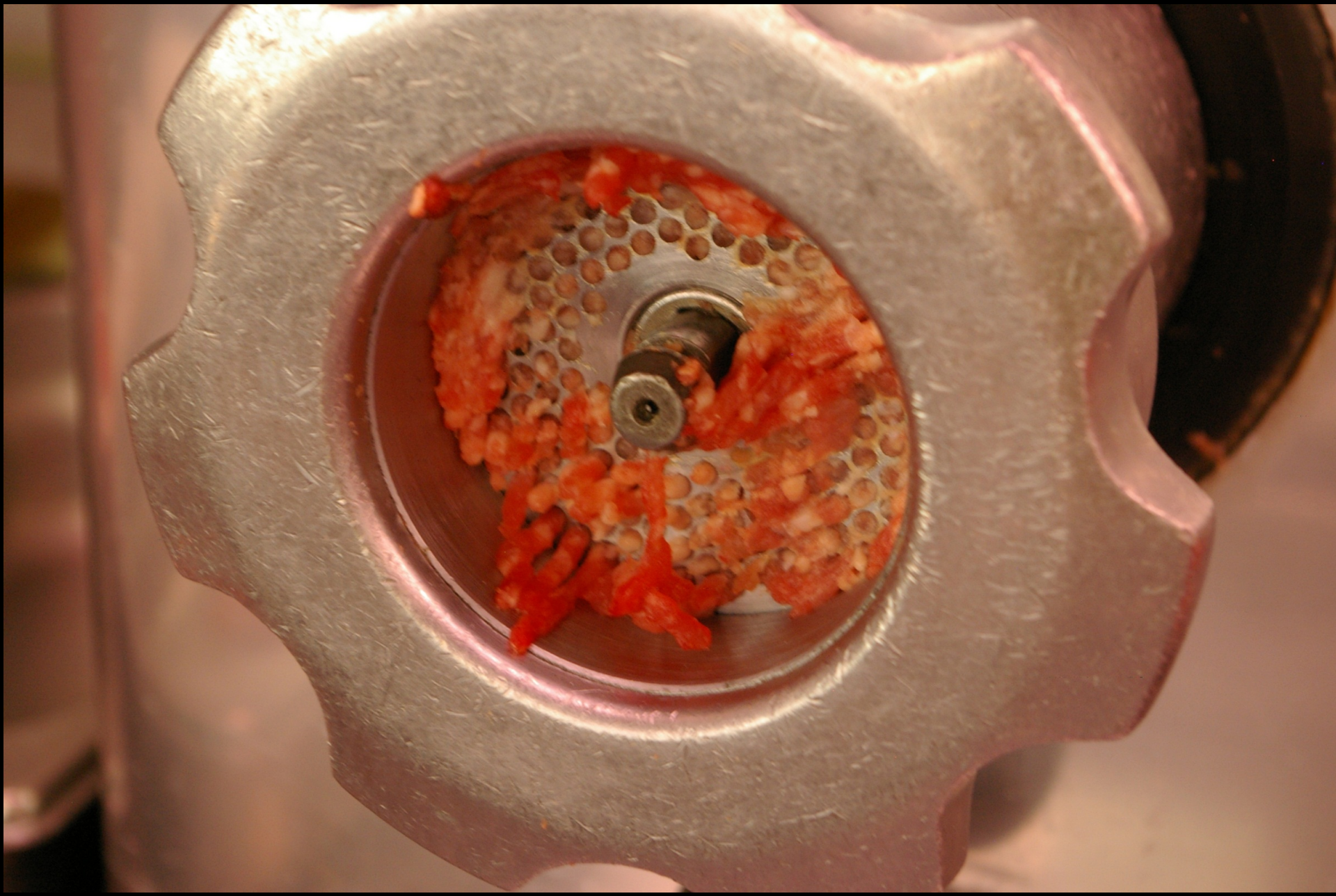
BIZERBA

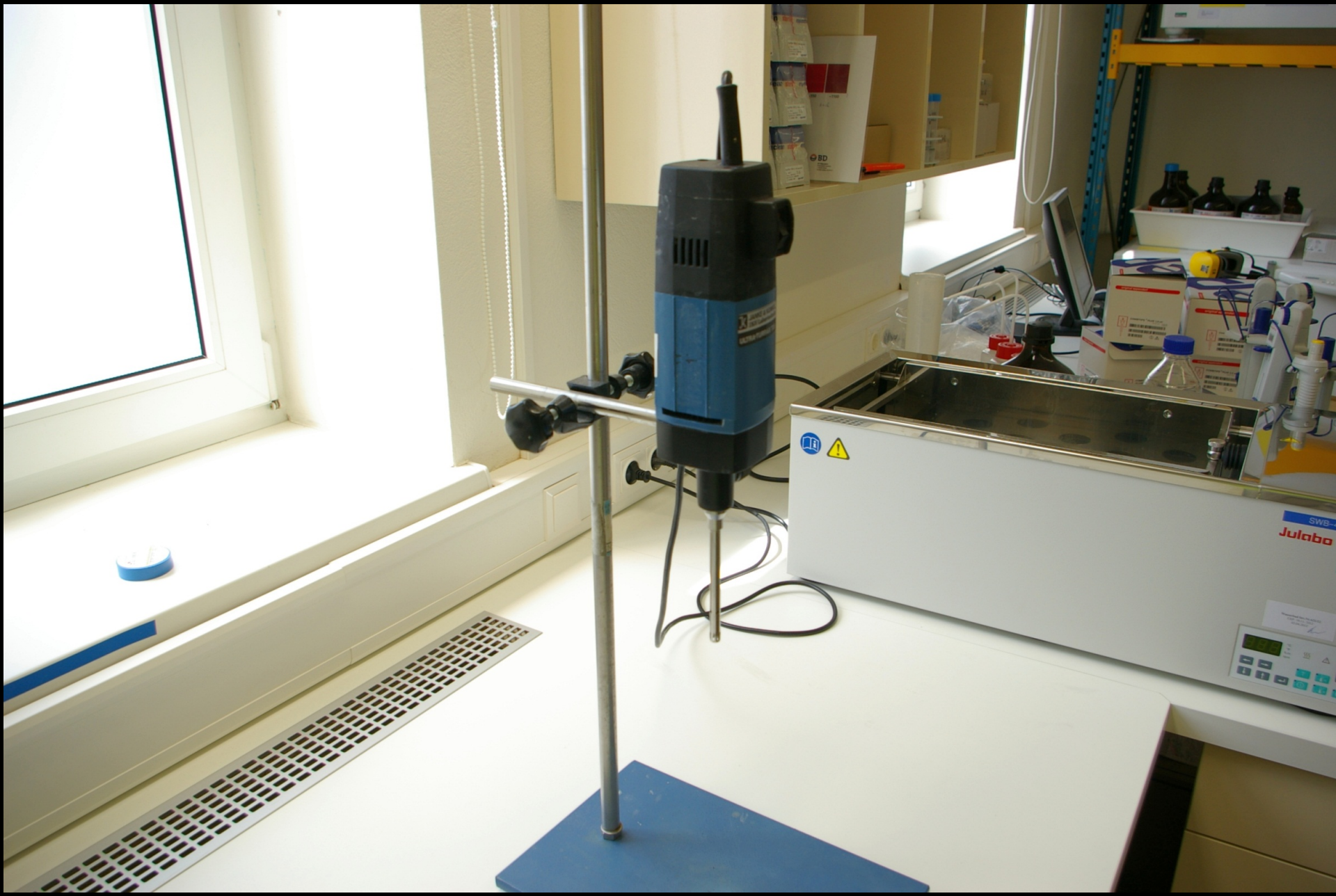
Practical Aspects of Tissue Analysis

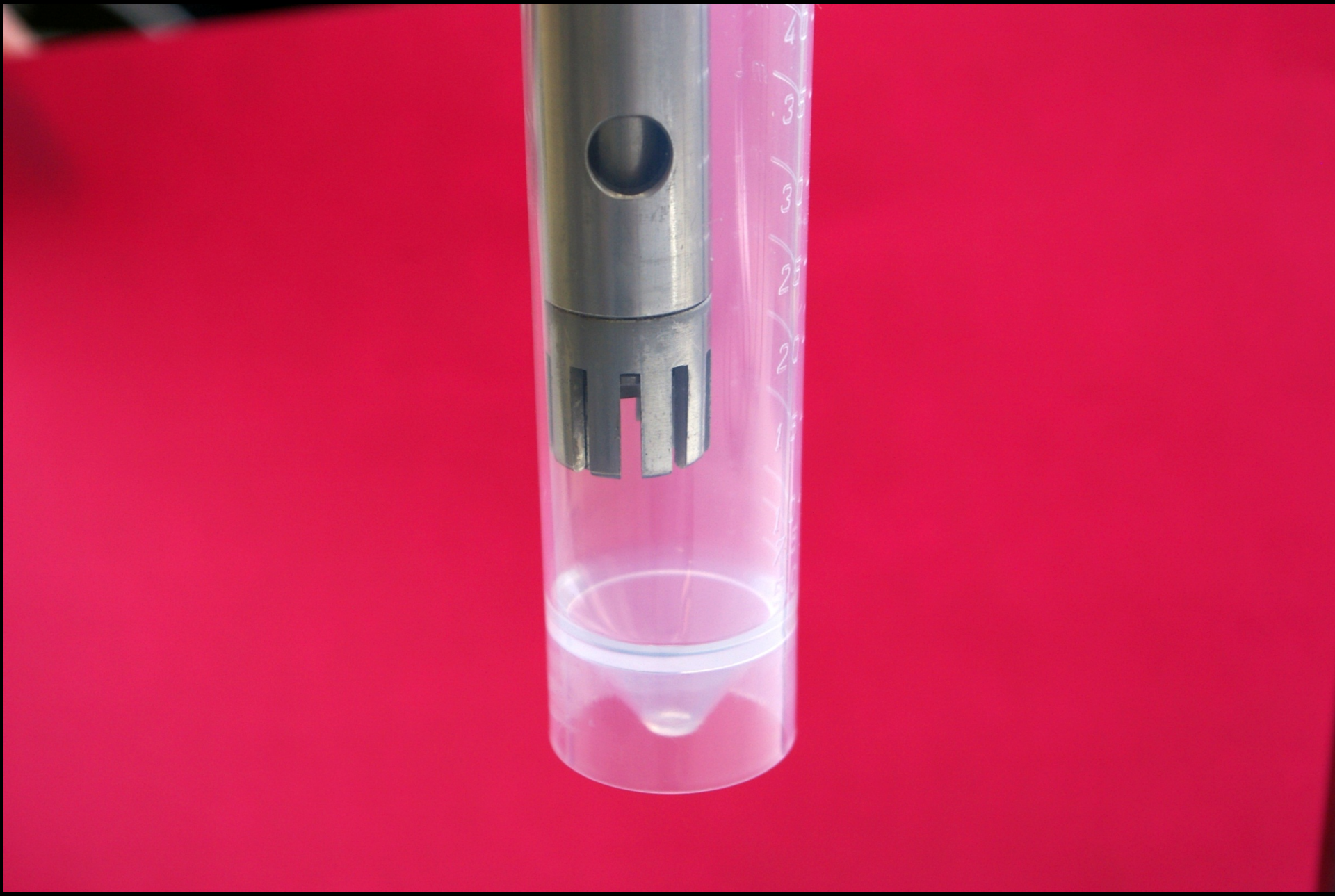
Hermann Mascher, pharm-analyt, Austria

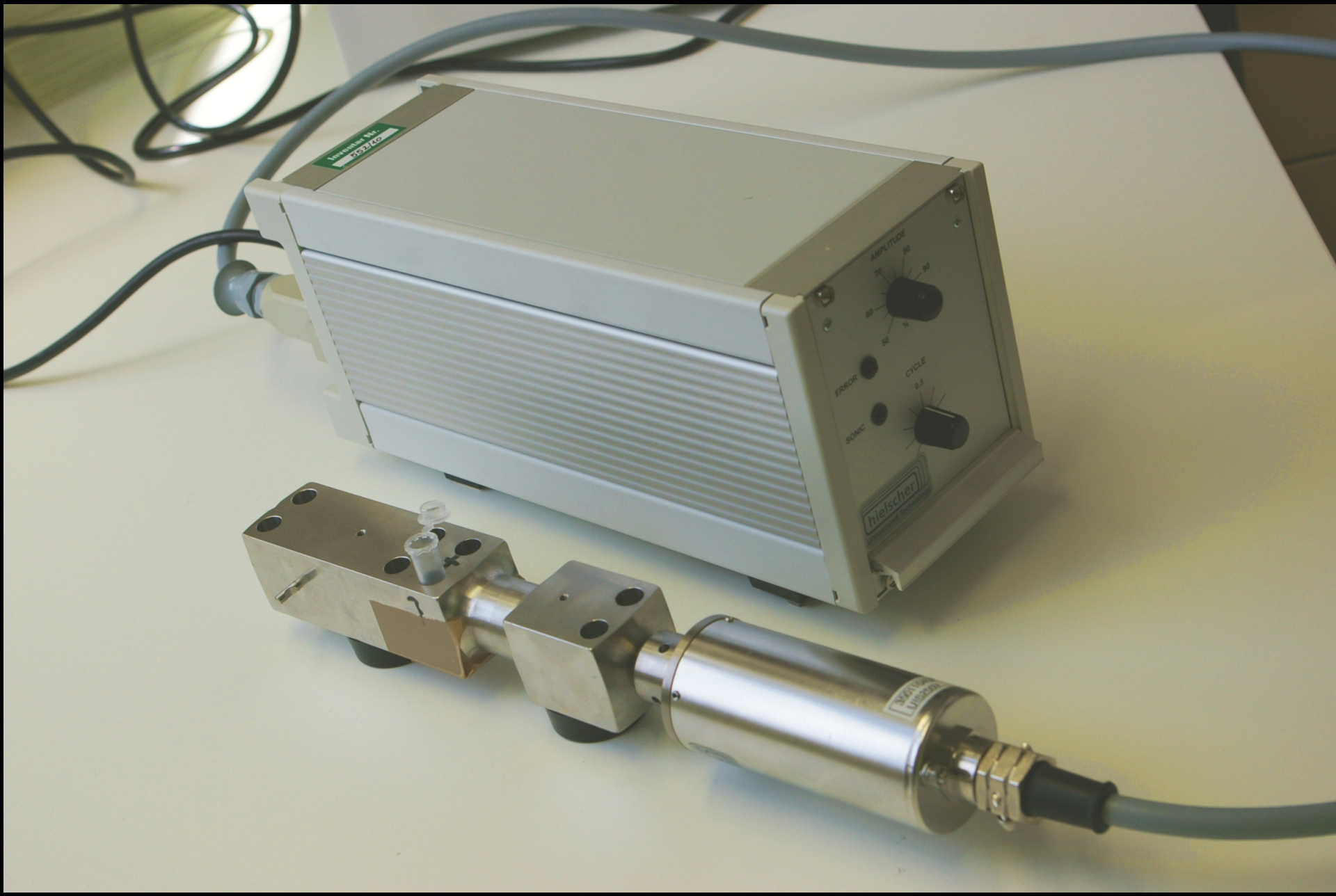
Four major challenges

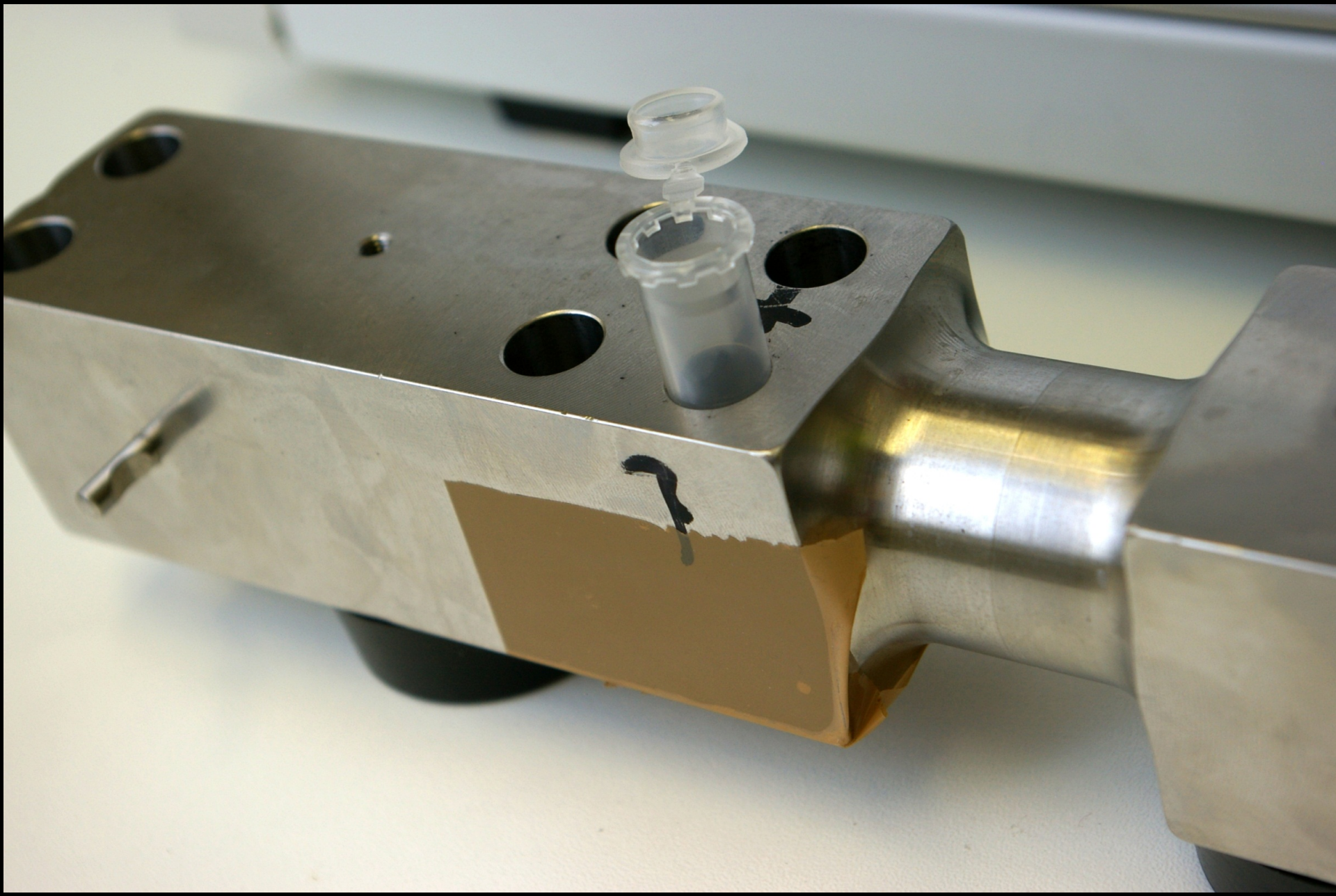
1. Taking a representative sample
2. Homogenisation
3. Recovery
4. Matrix effect

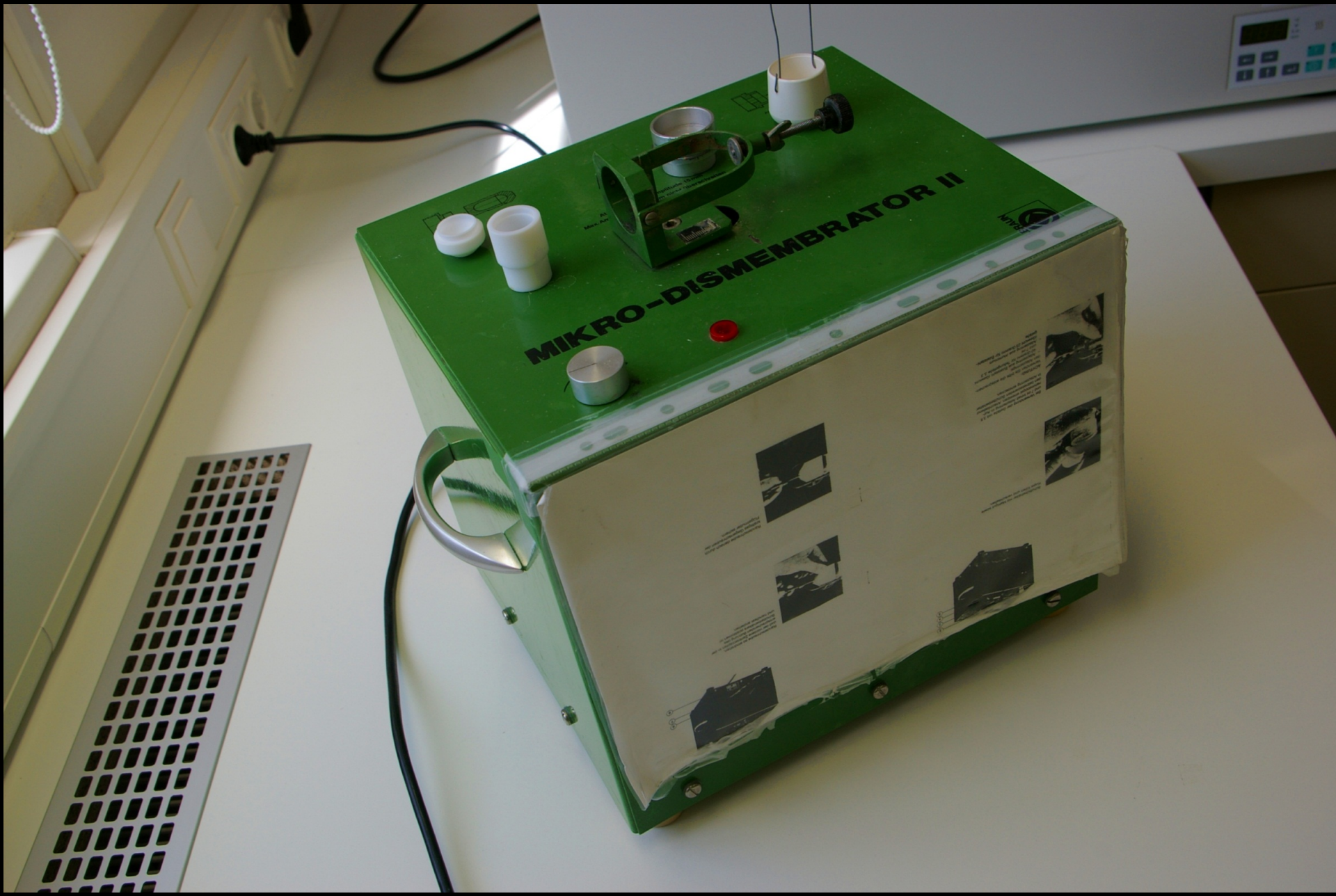



BD
Julabo




AMPLITUDE
ERROR
CYCLE
SONIC
hielscher




MIKRO-DISMEMBRATOR II

Triton™ X-100

CHAPS

Sodium dodecyl sulfate

Valnemulin

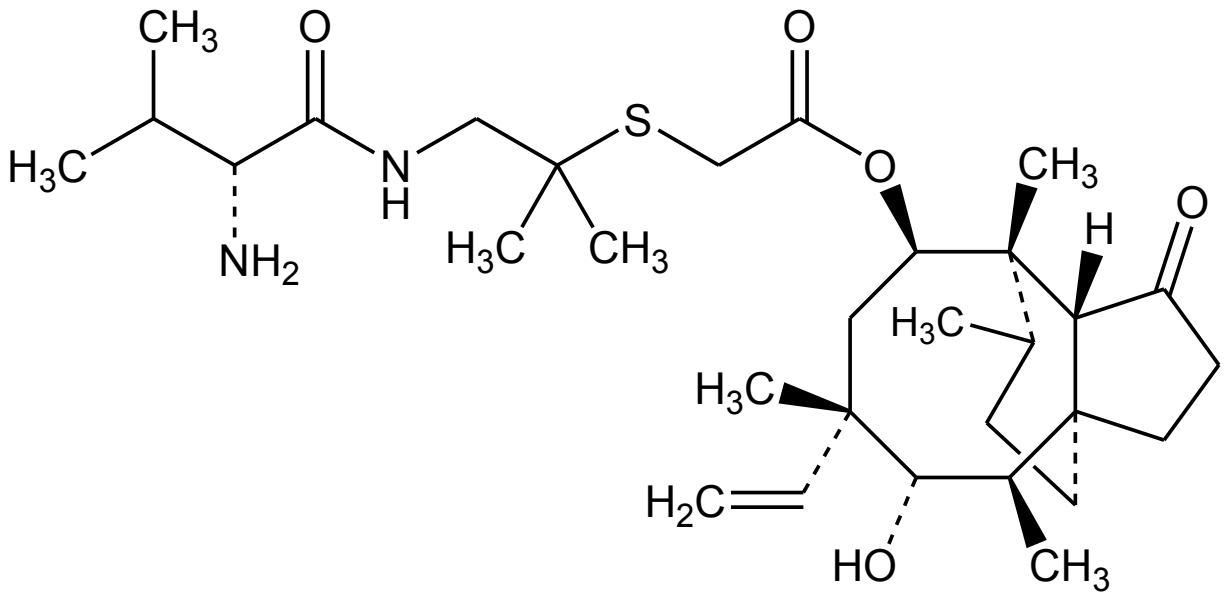


Fig. 2: Calibration sample St 1; 0.023 µg PMD 296 base / g muscle tissue
Retention time PMD 296: 5.21 min
Retention time Internal Standard: 3.85 min

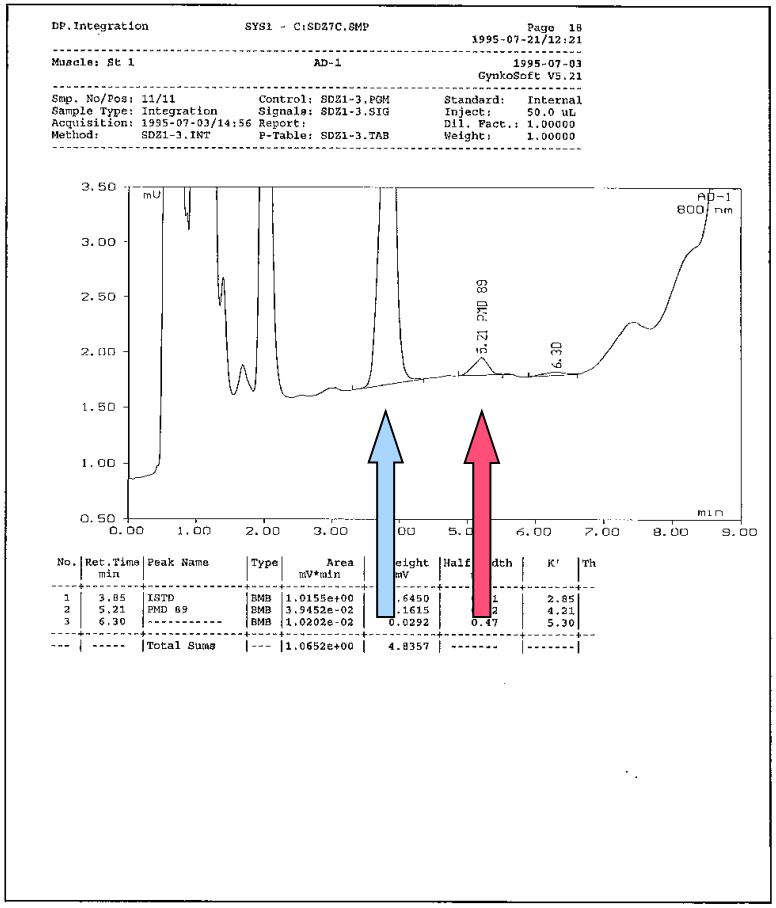


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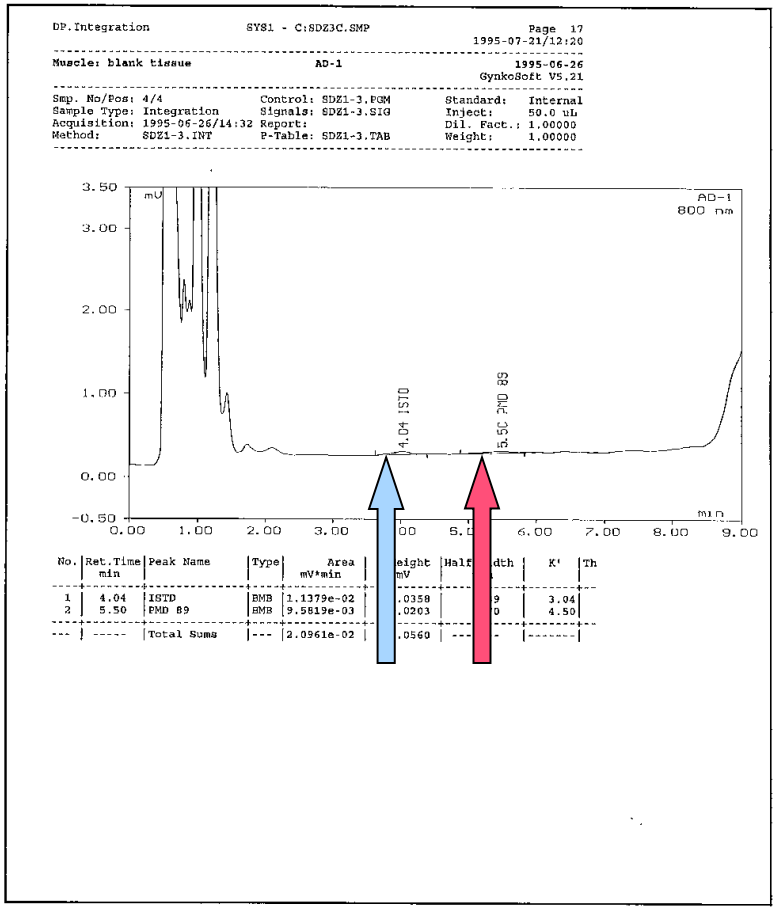
Fig. 1: Blank muscle tissue, extracted without Internal Standard



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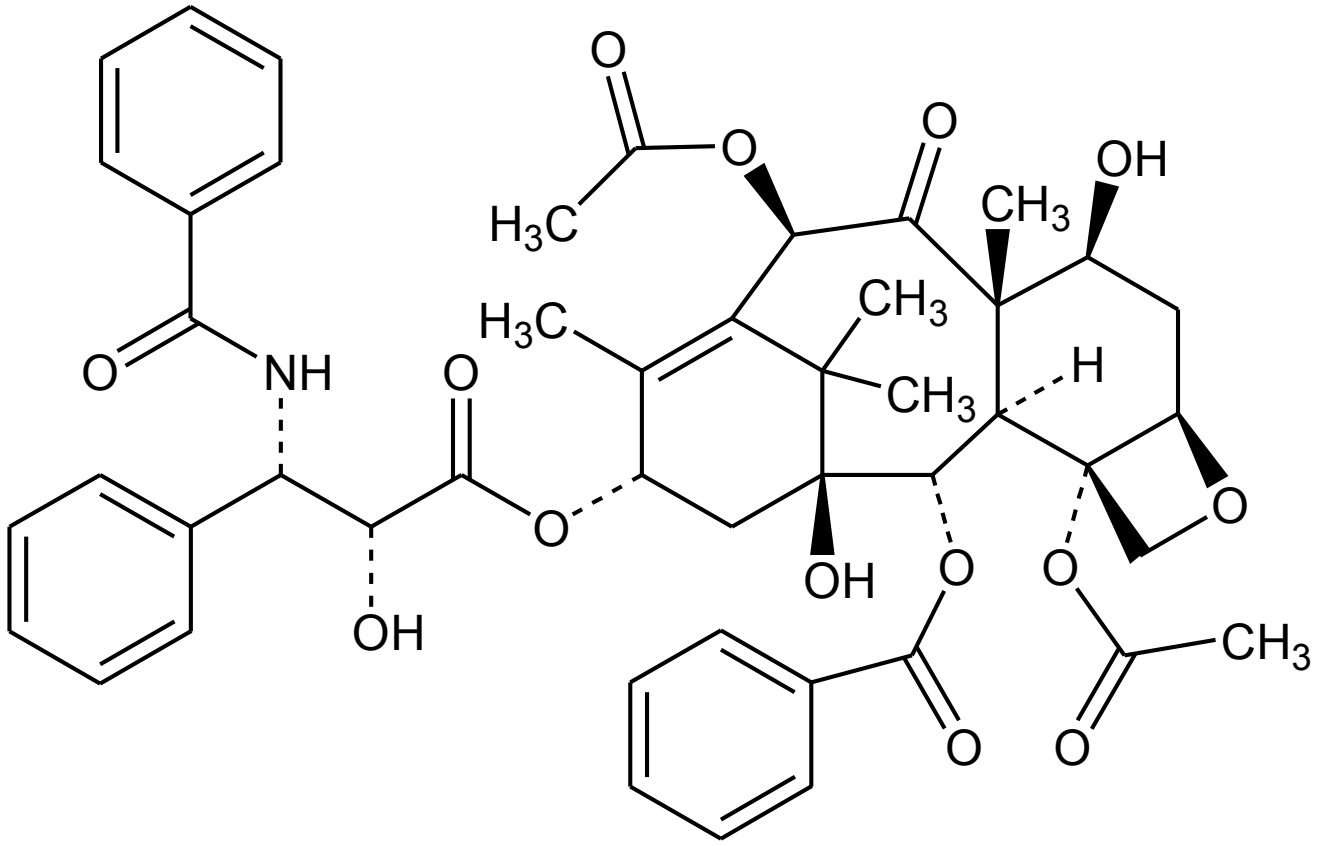
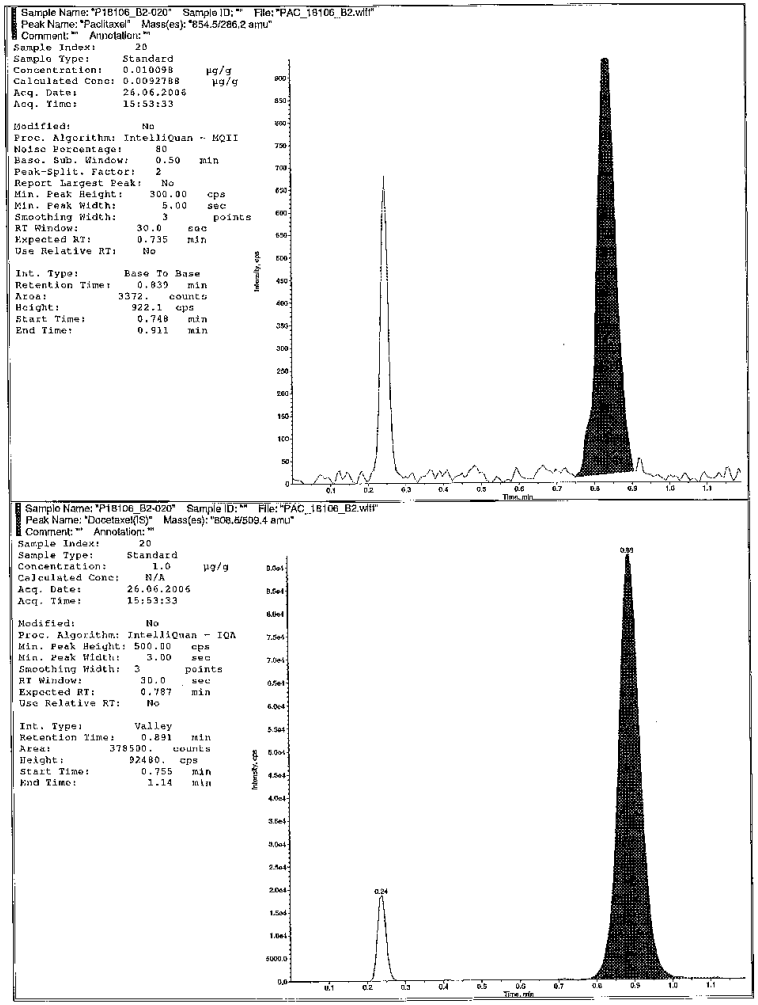
Tested at a concentration of 4 µg/g (n=4)

	Internal Standard	PMD
Liver	99% ±4%	81% ±2%
Kidney	81% ±7%	57% ±5%
Fat/Skin	49% ±2%	41% ±7%
Muscle	62% ±6%	47% ±8%

Paclitaxel



F 4: Calibration Standard Std1 (at Level of LLOQ)



- Paclitaxel
  - 50 pg / 5 mg tissue
- Internal Standard

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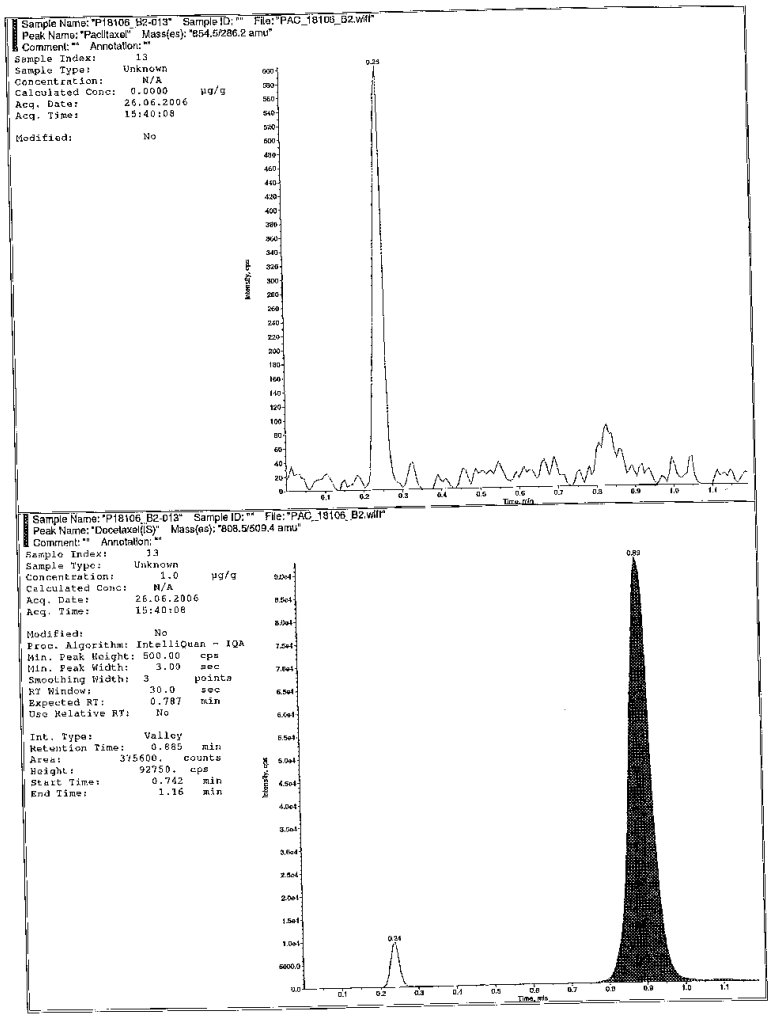
F 3: Chromatogram of Zero Sample



Paclitaxel
blank tissue

Internal
Standard

TT 21: [redacted] in Pig Lung Tissue: Recovery

	filename	area [counts]	calc.conc.dir [µg/g]	mean [µg/g]	CV [%]	exp.conc.dir [µg/g]	norm. mean area dir [counts/(µg/g)]
DIR-A	P18106_B3-073	10620	0.0253	0.0250	2.57	0.0250	420105
	P18106_B3-074	10670	0.0254			0.0250	
	P18106_B3-075	10180	0.0242			0.0250	
DIR-B	P18106_B3-055	188500	0.445	0.449	0.97	0.449	423959
	P18106_B3-056	192200	0.453			0.449	
	P18106_B3-057	190500	0.449			0.449	
DIR-C	P18106_B3-063	3261000	8.22	8.51	3.00	8.51	396833
	P18106_B3-064	3411000	8.60			8.51	
	P18106_B3-065	3454000	8.70			8.51	
DIR-IS	P18106_B3-073	553700	99.7	99.8	0.08	99.8	5551.5
	P18106_B3-074	554500	99.9			99.8	
	P18106_B3-075	554300	99.8			99.8	

	filename	area [counts]	calc.conc.prep [µg/g]	mean [µg/g]	CV [%]	exp.conc.prep. [µg/g]	recovery [%]	mean recovery [%]
QC-A1-L	P18106_B3-014	7804	0.0186	0.0188	10.76	0.0250	74.4	**75.1**
	P18106_B3-015	7432	0.0177			0.0250	70.8	
	P18106_B3-016	7716	0.0184			0.0250	73.6	
	P18106_B3-017	7133	0.0170			0.0250	68.0	
	P18106_B3-018	9324	0.0222			0.0250	88.9	
QC-B1-L	P18106_B3-042	165700	0.391	0.373	7.44	0.449	87.0	**83.1**
	P18106_B3-043	163000	0.384			0.449	85.6	
	P18106_B3-044	162300	0.383			0.449	85.2	
	P18106_B3-045	137300	0.324			0.449	72.1	
	P18106_B3-046	162900	0.384			0.449	85.6	
QC-C1-L	P18106_B3-034	3102000	7.82	7.46	5.35	8.51	91.9	**87.7**
	P18106_B3-035	2774000	6.99			8.51	82.2	
	P18106_B3-036	3012000	7.59			8.51	89.2	
	P18106_B3-037	2809000	7.08			8.51	83.2	
	P18106_B3-038	3102000	7.82			8.51	91.9	
						[redacted]: **Overall recovery:**		**82.0**
IS	P18106_B3-014	430000	77.5	77.8	9.14	99.8	77.6	**77.9**
	P18106_B3-015	443300	79.9			99.8	80.0	
	P18106_B3-016	423900	76.4			99.8	76.5	
	P18106_B3-017	376200	67.8			99.8	67.9	
	P18106_B3-018	486000	87.5			99.8	87.7	

Paclitaxel

Recovery at three concentration levels