VACUUM SEALING FOR A SAFE TRANSFER OF TISSUE FROM OPERATING THEATRE TO LABORATORY USING TISSUE-SAFE© MILESTONE APPARATUS

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Introduction

The pre-fixation "ischemia" time represents a potentially dangerous step affecting preservation tissue components (nucleic acids). We tested Under-Vacuum sealing (UVS) system Tissue-Safe©(Milestone) versus fresh tissue or preserved in RNA later©.

Material y methods

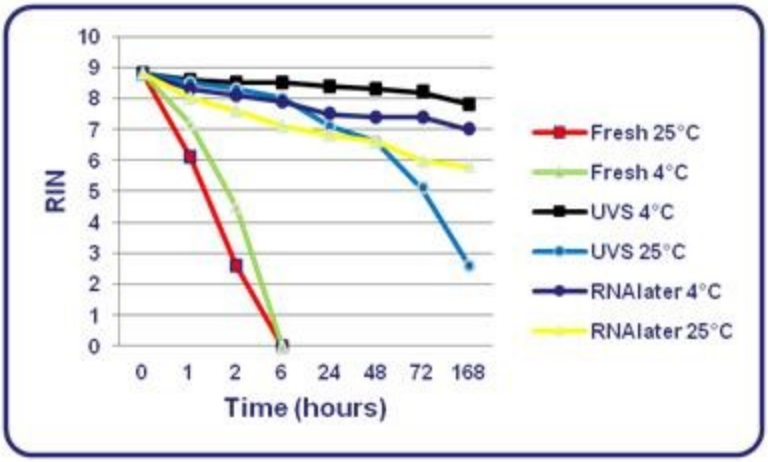
We collected 35 samples of thyroid tissue from the same donor. We stored in fresh, in RNA later© or UVS at 4°C or room temperature (RT) for a time between 1 hour to 168 hour, and then frozen at -80°C.

We extract and purify RNA with Nucleo Spin® RNA XS Macherey-Nagel. RNA Integrity was measured through RNA Integrity Number (RIN) using electrophoresis Bioanalyzer 2100 Agilent Technologies.

Results

RIN is heavily dependent from storing conditions. Optimal values obtained, in UVS cooled specimens. The RIN value remains practically constant (8.8 at 0h; 8.6 at 1h; 8.5 at 2h; 8.5 at 6h; 8.4 at 24h; 8.3 at 48h; 8.2 at 72h and 7.8 at 168h). RIN values UVS at RT down from 8.8 at 0h to 2.6 at 168h. Samples in RNAlater follow the same pattern. Fresh tissue degrades quickly and at 6h (4°C or RT) RIN values are 0.

Time(hours)	RIN Fresh 25°C	RIN Fresh 4°C	RIN UVS 4°C	RIN UVS 25°C	RIN RNAlater 4°C	RIN RNAlater 25°C
0	8,8	8,8	8,8	8,8	8,8	8,8
1	6,1	7,2	8,6	8,5	8,3	8
2	2,6	4,5	8,5	8,3	8,1	7,6
6	0	0	8,5	8	7,9	7,1
24			8,4	7,1	7,5	6,8
48			8,3	6,6	7,4	6,6
72			8,2	5,1	7,4	6
168			7,8	2,6	7	5,8



Conclusion

Tissue transfer in UVS and cooling conditions assured standard quality for nucleic acid analysis.

Acknowledgments

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