Evaluation of tissue preservation of materials stored at 4°C with Tissue-safe ® system after the examination and macroscopic sampling.

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BACKGROUND
Maintenance of tissue features is essential for the evaluation of the biological parameters of neoplasms, for diagnosis and for further immunohistochemical investigations and studies of molecular biology. The use of formalin at 4% has traditionally dominated all phases of the transportation process, of fixation and storage of surgical specimens.

In the last few years a new system allows transportation of refrigerated (4°C) samples, that are put under-vacuum and not-fixed: the system is called Tissue-Safe ® (Milestone, Bergamo, Italy). The advantage of this system is the elimination of part of the formalin required for the transportation/fixation of surgical specimens and it allows the control of the fixation time.

Unlike the majority of other pathological anatomy services, at IEO over 95% of surgical specimens are immediately transferred to the grossing table, sampled fresh and subsequently preserved in formalin, until completion of the diagnostic process.

In order to reduce the use of formalin, we wanted to evaluate the state of preservation of tissues and, in particular, DNA and RNA of specimens stored in refrigerator at 4°C with Tissue-safe ® system.

CONCLUSIONS
1. This study confirms the validity of the Tissue-safe ® system for transportation as well as for a limited storage of surgical samples.
2. This system allows resampling after at least 3 days.
3. This system allows reduction of costs of acquisition of formalin and its disposal, as well as the risks arising from its use.