


Development of ready-to-use adrenaline syringes for emergency use

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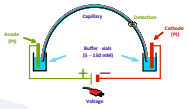
ROUTE CIVAS

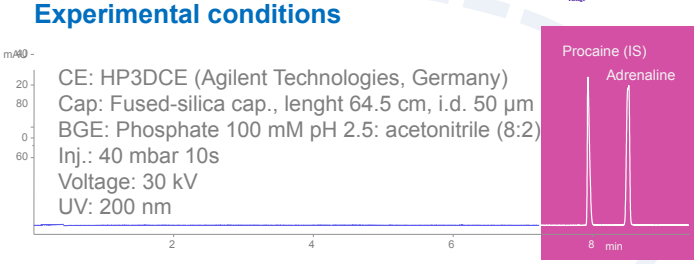
Introduction

Adrenaline (epinephrine) is commonly used in cardiac arrest, bronchospasm and anaphylaxis. In order to secure the process and reduce the preparation time in wards in an emergency, a ready-to-use adrenaline syringe (1mg/mL) is developed.

Method



Experimental conditions



Electropherogram obtained for the CE-UV analysis of RTU adrenaline syringe produced by the HUG pharmacy

Method validation

The validation of the quantitative method was based on ICH recommendations following the guidelines of SFSTP [1] with three series including 2 calibration standards at 3 concentrations of adrenaline in water and 4 validation standards at 3 concentrations of adrenaline in sodium metabisulfite (1 mg/mL) in 0.9% NaCl).

Theoretical conc. (%)	Trueness	Repeatability (CV)	Intermediate precision (CV)
80	100.7%	1.3%	1.4%
100	100.9%	1.3%	1.6%
120	99.0%	1.5%	1.6%

[1] P. Hubert et al., Stp Pharma Pratiques 13 (2003) 101-138

Results

PP syringes

25°C

Time	Adrenaline concentration (%)
T = 0	100%
T = 1 month	101%
T = 3 months	97%
T = 6 months	96%
T = 9 months	94%
T = 1 year	94%

Warning!

At T = 12 months, the solution of adrenaline became yellow

The pH values did not change appreciably and the syringe content remained sterile throughout the study. Each syringe fulfilled all European pharmacopeia criteria in terms of non-visible particles

Conclusion

Adrenaline syringes (5 mL) 1 mg/mL were stable for **9 months at 25°C**

Stored in resuscitation trolleys (one in every ward), these RTU syringes should contribute to **improved safety in resuscitation processes involving adrenaline.**

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http://pharmacie.hug-ge.ch/rd/posters.html