

# Development and stability of a new oral presentation of procarbazine in pediatrics

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## INTRODUCTION

50 mg Procarbazine (PCZ) caps are not labelled for paediatric population

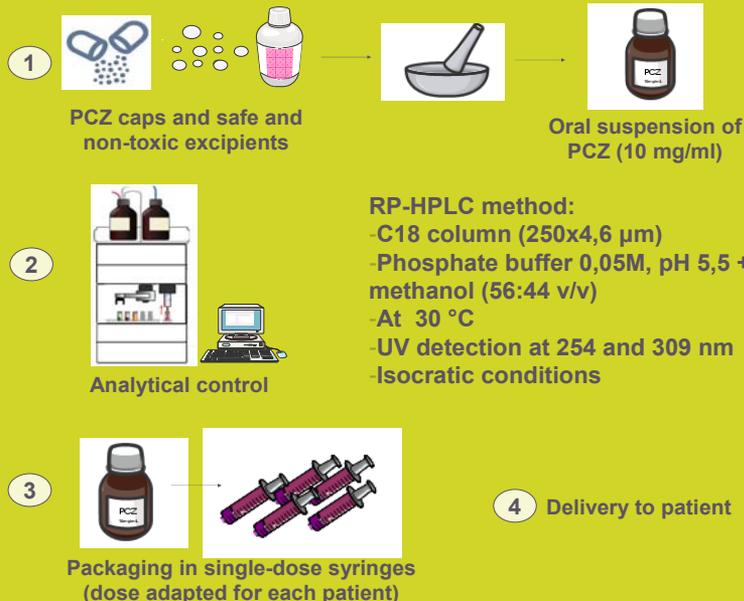
Dosage not adapted for therapeutic protocols  
 - BB-SFOP 4mg/kg/j (brain tumours)  
 - TPCV 50mg/m<sup>2</sup>/prise (glioma of optical pathways)  
 Difficulties to swallow caps

Risk of **cytotoxicity exposure** and **treatment inefficiency**  
 Risk of **observance problem**

Pharmaceutical development of an **oral suspension** of procarbazine

**Objective:** to study the stability of this oral suspension, in order to ensure an **accurate and safe dose** for children administration.

## MATERIAL AND METHODS



## RESULTS AND DISCUSSION

Retention time	4.7 min
Linearity	20-100 μg/mL
Regression curve	Y=53,08*X + 15,08
r <sup>2</sup>	0.9998
%RSD	0.05
Repeatability (%RSD)	< 2.2
Limit of detection	3:1
Limit of quantification	10:1
Accuracy (%RSD)	< 0.9

Table 1: Parameters of the oral suspension stability

✓ Oral suspension developed according to the Paediatric Committee (PDCO) and the **European Paediatric Formulations Initiatives** and the **WHO** recommendations

✓ **Excipients with safety profile** according to the Guideline on pharmaceutical development of medicines for paediatric use

Reagents	Role	Proportions (/100 mL of suspension)
Procarbazine	Drug	1 000 mg
Syrspend	Suspending vehicle	97 mL
Sterile water	Citric acid diluent	3 mL
Citric acid	pH stabilizer	125 mg
Povidonium K30	Suspending agent	1250 mg
Mint Flavour	Taste masking	300 mg
Saccharin sodium	Taste masking	50 mg

Table 2: Role and proportions of the 10 mg/mL oral suspension reagents

✓ Oral suspension of PCZ at 10mg/ml : **best compromise** between the maximum permissible **viscosity** for an oral administration and the **few volume** to take by children

✓ Physical, chemical and bacteriological stabilities for **50 days at 4°C**

✓ Mint is not the favorite aroma in children but it's **the most efficient** to hide PCZ; taste score of the 5-point facial hedonic scale > 3 (n=5)

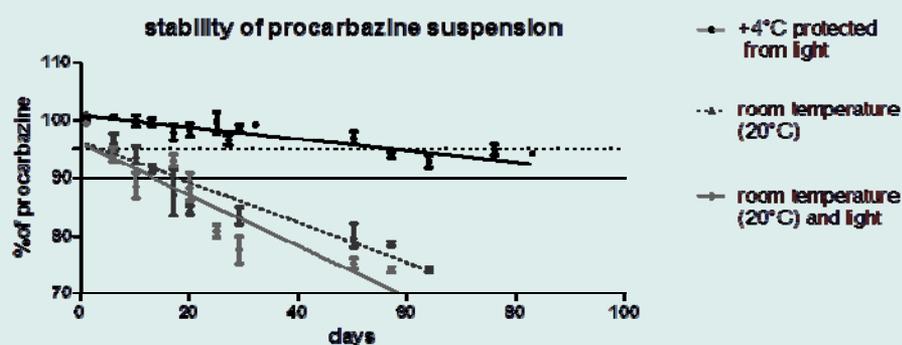


Fig.1: Monitoring of the stability of PCZ and proportions of degradation in % relative to the initial content.

## CONCLUSION

We developed a well-tolerated PCZ suspension, adapted for onco-paediatrics patients which allows to **ensure accurate and safe dose for children administration.**