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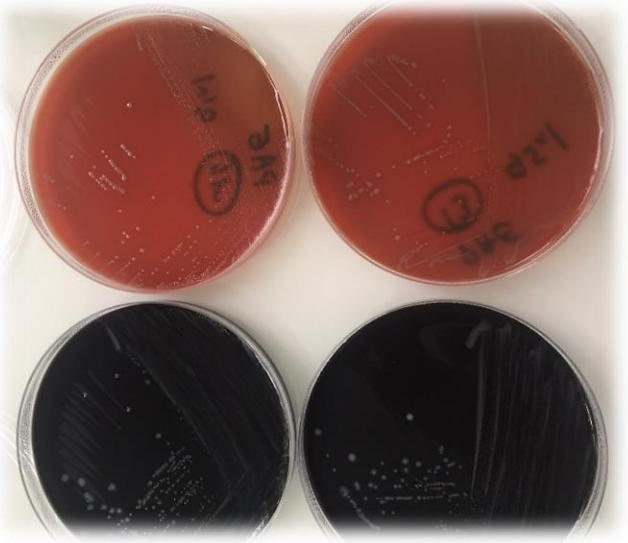

Preston broth : is the performance similar for ready to use medium *vs* home made ?

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NRL for *Campylobacter*
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Introduction

NRL for *Campylobacter* ⟹ annual PT for French labs

ISO 10272 (2017) part 1, protocole B

SPF turkey meat

+ vials contaminated with *Campylobacter* strains

(NFA Uppsala)

All routine laboratories use ready to use media :

-> problem = ready to use Preston broth

commercialized in Spain by Thermo Fisher scientific

Not in France

Introduction

→ **test of the performance of Preston broth, ready to use (PRU) and home made (PHM)**

↪ **quantitative method with serial dilutions considering 2 criteria: productivity and selectivity**

Productivity : the *Campylobacter* reference dilution leading to <100 cfu on blood agar must give at least 10 CFU when streaking 10 µL Preston enriched samples.

Selectivity using *E. coli* : $S_F = D_0 - D_S$ $S_F \geq 2$ for a good result

D_0 = the highest dilution of *E. coli* giving at least 10 cfu

D_S = the highest dilution of *E. coli* after Preston enrichment giving no growth or less than 10 cfu on blood agar.

Results (1)

Preston broth productivity : ready to use (PRU) and home made (PHM)

Dilutions	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}
C. jejuni (ATCC 33560)	>200	33			
PHM 1	>200	>200	>200	11	ND
PHM 2	>200	>200	>200	ND	ND
PRU	>200	>200	>200	10	>200

Results expressed in **cfu** *or ND : no detection*

Productivity was good for the 3 batches tested (RU and HM)

Results (2)

Preston broth selectivity : ready to use (PRU) and home made (PHM)

Dilutions	0	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-6}	10^{-7}
E. coli (ATCC 8739)						37	2
PHM 1	>200	ND	ND	ND	ND	6 – 1 =	5
PHM 2	>200	5	ND	ND	ND	6 – 1 =	5
PRU	>200	>200	>200	>50	ND	6 – 4 =	2

Results expressed in ufc or ND : no detection

$S_F = D_0 - D_S$

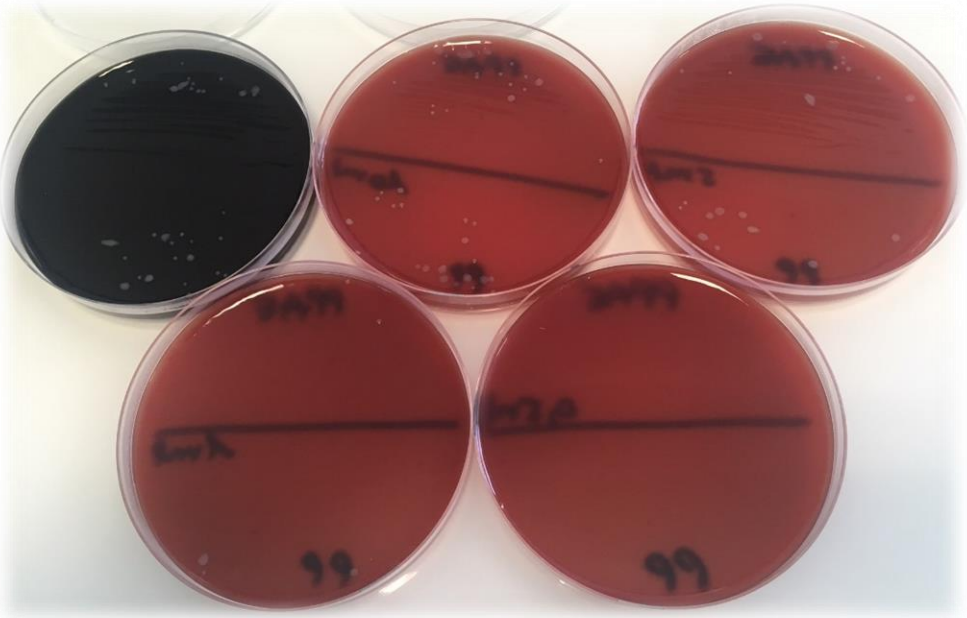
Selectivity was good but different

PHM (S_F= 5) and PRU (S_F= 2)

Conclusion

Productivity and selectivity confirmed the good performance of the 3 batches of Preston broth

PRU less selective for E. coli : ***PHM contains 10mg/L amphotericin B instead of 100 mg/L cycloheximid, which may explain its higher selectivity***



Thank you for your attention