Results:
Oxidation reaction was very reproducible since all batches showed similar results in all quality control tests. Sialic acid content was 97.5 mg/mL, 97.67 mg/mL and 101.04 mg/mL for batches 1, 2 and 3, respectively. SEC-HPLC profiles were similar showing $K_a$ acceptable (0.40-0.55) and residual glycerol was lower than 0.5 g/L according to established specifications for all batches. 1H-NMR spectra showed typical assignments confirming the identity of PSC and the aldehyde moiety relative content (CHO) was around 8% as measured in the range of 5.0 a 5.3 ppm by qNMR. Finally the preliminary molecular weight data obtained by SEC-MALLS were $=12.26$ KDa, $=10.19$ KDa and $=12.59$ KDa for batches 1, 2 and 3, respectively, without significant differences (Mann Whitney test, p>0.05). These results were comparable to a previous one when a batch produced and quenched with the established reaction time was studied ($=10.09$ KDa).

Conclusion:
All results showed that oxidized PSC batches have similar physico-chemical properties and consequently similar CQAs. However, these oxidized PSC must be used to produce conjugates in order to evaluate if they will have appropriate polysaccharide-protein ratios and similar immunogenicity in mice as observed previously. This further improvement in this study is essential to assume a range of oxidation reaction time that could promote flexibility in the production process of meningococcal C conjugate vaccine.

Keywords: Meningococcal conjugate vaccines; Critical Process Parameters (CPPs); Critical Quality Attributes (CQAs)