

**Table 5.1c Summary of percentage of aggregates for mAb2 over time after agitation in 250 mL PO IV bags with controlled 60 mL headspace and headspace removed**

Expected PS20 level (w/v %)	% aggregate after 4 h of agitation at 30 °C			
	Controlled 60 cm <sup>3</sup> headspace		Headspace removed	
	Average % aggregates (n = 2) <sup>a</sup>	% difference <sup>b</sup>	Average % aggregates (n = 2) <sup>a</sup>	% difference <sup>b</sup>
Control (no agitation)	0.7	7.8	0.7	0.1
0%	1.7	16.8	0.7	0.8
0.0001%	1.6	7.6	0.7	0
0.0003%	1.4	14.9	0.7	0.5
0.001%	1.5	27.5	0.7	0.6
0.003%	0.9	2.1	0.6	0.1

<sup>a</sup>Two separate IV bags were evaluated.

<sup>b</sup>% difference =  $[(x_1 - x_2)/(x_1 + x_2)/2] \times 100$  where  $x_1$  and  $x_2$  are measurements from each bag.

Reproduced from Sreedhara et al. (2012).

(Fischer, Hoernschemeyer, & Mahler, 2008), and thus the use of such a diluent probably should be avoided.

Recently admixtures of two monoclonal antibodies for IV administration have been developed (Glover et al., 2013). The physical and chemical stabilities resulting from dilution of Herceptin<sup>®</sup> and Perjeta<sup>®</sup> into IV bags with 0.9% saline were evaluated. This can be challenging since the two antibodies may have different requirements for stabilization. These admixtures were compared to the individual dose preparation for each antibody. The color, appearance and clarity, concentration, and turbidity by ultraviolet spectroscopy, particulate analysis by HIAC Royco light obscuration, size exclusion chromatography, non-gel sieving capillary sodium dodecyl sulfate electrophoresis, analytical ultracentrifugation, and ion exchange chromatography did not show any observable differences between the controls, that is, Perjeta<sup>®</sup> and Herceptin<sup>®</sup> each alone in an IV bag, and the admixtures stored at either 5 or 30 °C for up to 24 h. The biophysical assays did not show any interactions between the two mAbs. These studies support the dilution of these two mAbs for storage for up to 24 h at 5 and 30 °C.

## References

- Ambados, F. (1996). Incompatibility between aminophylline and element zinc injections. *Australian Journal of Hospital Pharmacy*, 26, 370–371.
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