Dissolution of Sodium Oxybate ER Drug Product (LUMRYZ) in Different Reconstitution Liquid Vehicles

ID# ***2018219***

B.J. Schaefer, T. Thorsteinsson and J. Vaughn
Avadel Pharmaceuticals, 16640 Chesterfield Rd, Suite 200, Chesterfield, MO 63005
Contact: bjschaefer@avadel.com

CRS Controlled Release Society

Avadel™

INTRODUCTION

Sodium Oxybate (SO) for Extended-Release (ER) Oral Suspension Drug Product (LUMRYZ™) is a once-nightly formulation of sodium oxybate containing both immediate release (IR) beads and pH-dependent controlled-release (CR) beads, designed to be reconstituted in water and administered orally. A study was conducted to determine the dissolution profile and pH of LUMRYZ at prescribed doses after reconstitution in alternative liquid vehicles.

METHOD

The dissolution and the pH testing were conducted using 4.5 g and 9 g single-dose drug product stick packs reconstituted in Milli-Q water (Control), Crystal Light Raspberry Lemonade (CL), Mio Fruit Punch Concentrate (MF), and alkaline water (AW). CL and MF were prepared with regular local tap water. Dissolution was measured at 0.25, 1, 2, 2.5, 3, 3.5, 4, 5, 6, and 8 hours after 5-minute (AW only) and 30-minute (CL, MF, and AW) rest periods. The pH of each reconstitution solution was measured prior to and then 5 and 30 minutes after addition of the drug product.

RESULTS

LUMRYZ released 49-51% of SO after 15 minutes, 49-51% after 2 hours and 97-101% after 8 hours across all alternative liquid vehicles and strengths.

Time	LUMRYZ (4.5 g)					LUMRYZ (9 g)				
(Hours)	Control	CL	MF	AW-5 min	AW-30 min	Control	Cry. Light	Mio	AW-5 min	AW-30 min
0.25	50	51	51	49	49	50	50	51	51	51
2	50	51	50	49	50	51	51	51	51	51
8	98	101	101	99	99	99	101	101	97	98

Table 1. LUMRYZ Dissolution Data – Alternative Liquid Vehicles.

LUMRYZ dissolution profiles at 0.25, 1, 2, 2.5, 3, 3.5, 4, 5, 6, and 8 hours after 5-minute (AW only) and 30-minute (CL, MF, and AW) rest periods. 49-51% of SO after 15 minutes, 49-51% after 2 hours and 97-101% after 8 hours across all alternative liquid vehicles and strengths.

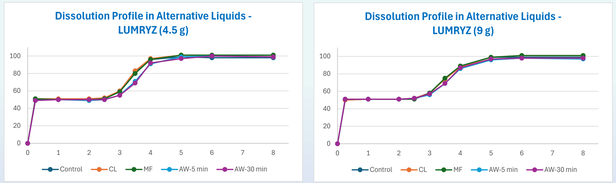

Figure 1. LUMRYZ Dissolution Profile – Alternative Liquid Vehicles.

LUMRYZ pH results were 2.95-9.53 pre-sample and 5.2-5.7 post sample addition across all alternative liquid vehicles and strengths.

LUMRYZ pH Results Summary					
Vehicle	Pre-Sample	4.5 g		9 g	
		5 min	30 min	5 min	30 min
Control	7.03	5.6	5.6	5.7	5.7
CL	3.02	5.3	5.2	5.5	5.6
MF	2.95	5.4	5.3	5.6	5.6
AW	9.53	5.6	5.5	5.7	5.7

Table 2. LUMRYZ pH Results Pre and Post Sample Addition – Alternative Liquid Vehicles.

CONCLUSIONS

The dissolution and pH testing demonstrated consistent and acceptable dissolution and pH results of the sodium oxybate for extended-release drug product (LUMRYZ) in various liquids, which enables patients to safely and effectively use these alternative liquid vehicles for their preparation.