Supporting Information

Simultaneous determination of pinaverium bromide, medazepam, and their related impurities in combined dosage form by UPLC–QDA

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Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.50	3.00	x-xi/√n	0.289

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	1829.20	1834.70	4.90	3.00	2.83	standard error of slope x 100/slope	0.154
Slope2	1838.60						
Slope3	1836.30						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	102.93	103.62	0.48	6.00	0.19	standard error of recovery x 100/recovery	0.187
Recovery2	103.27						
Recovery3	104.18						
Recovery4	103.74						
Recovery5	103.52						
Recovery6	104.06						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	199.83	200,17	0,45	6,00	0,18	standard error of repeatability x 100/repeatability	0.091
Repeatability2	200.47						
Repeatability3	199.62						
Repeatability4	200.38						
Repeatability5	199.91						
Repeatability6	200.79						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.388

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.776

Figure S1: Uncertainty Assessment of Medazepam

Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.00	3.00	x-xi/√n	0.577

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	438.92	443.40	3.95	3.00	2.28	standard error of slope x 100/slope	0.514
Slope2	446.37						
Slope3	444.91						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	102.93	103.84	0.55	6.00	0.22	standard error of recovery x 100/recovery	0.216
Recovery2	104.12						
Recovery3	104.39						
Recovery4	103.96						
Recovery5	104.21						
Recovery6	103.45						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	495.83	497.42	0.98	6.00	0.40	standard error of repeatability x 100/repeatability	0.080
Repeatability2	497.61						
Repeatability3	498.42						
Repeatability4	496.79						
Repeatability5	497.53						
Repeatability6	498.31						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.807

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	1.613

Figure S2: Uncertainty Assessment of Medazepam RS1

Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.90	3.00	x-xi/√n	0.058

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	319.84	322.20	2.37	3.00	1.37	standard error of slope x 100/slope	0.424
Slope2	324.57						
Slope3	322.19						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	101.98	102.30	0.22	6.00	0.09	standard error of recovery x 100/recovery	0.087
Recovery2	102.47						
Recovery3	102.16						
Recovery4	102.34						
Recovery5	102.59						
Recovery6	102.26						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	1006.37	1008.39	1.32	6.00	0.54	standard error of repeatability x 100/repeatability	0.053
Repeatability2	1009.16						
Repeatability3	1008.23						
Repeatability4	1008.91						
Repeatability5	1007.54						
Repeatability6	1010.12						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.440

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.879

Figure S3: Uncertainty Assessment of Pinaverium Bromide

Uncertainty in the Standard Sample (ustd)		x	xi	n	ustd Formula	ustd
		100.00	99.80	3.00	x-xi/√n	0.115

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	361.29	363.40	2.49	3.00	1.44	standard error of slope x 100/slope	0.395
Slope2	366.14						
Slope3	362.77						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	100.43	100.80	0.24	6.00	0.10	standard error of recovery x 100/recovery	0.096
Recovery2	100.76						
Recovery3	101.12						
Recovery4	100.89						
Recovery5	100.67						
Recovery6	100.93						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	1000.26	1001.65	0.87	6.00	0.36	standard error of repeatability x 100/repeatability	0.035
Repeatability2	1002.83						
Repeatability3	1001.46						
Repeatability4	1002.19						
Repeatability5	1001.33						
Repeatability6	1001.83						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.424

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.848

Figure S4: Uncertainty Assessment of Pinaverium Bromide RS3

Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.80	3.00	x-xi/√n	0.115

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	251.93	254.11	1.95	3.00	1.12	standard error of slope x 100/slope	0.442
Slope2	255.68						
Slope3	254.71						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	104.32	104.80	0.35	6.00	0.14	standard error of recovery x 100/recovery	0.136
Recovery2	104.71						
Recovery3	105.03						
Recovery4	104.86						
Recovery5	104.57						
Recovery6	105.31						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	1003.74	1005.22	0.94	6.00	0.38	standard error of repeatability x 100/repeatability	0.038
Repeatability2	1005.92						
Repeatability3	1004.67						
Repeatability4	1006.18						
Repeatability5	1004.96						
Repeatability6	1005.87						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.478

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.957

Figure S5: Uncertainty Assessment of Pinaverium Bromide RS4

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Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.80	3.00	x-xi/√n	0.115

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	335.92	338.40	2.36	3.00	1.36	standard error of slope x 100/slope	0.402
Slope2	340.61						
Slope3	338.67						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	100.83	101.20	0.30	6.00	0.12	standard error of recovery x 100/recovery	0.121
Recovery2	101.27						
Recovery3	101.63						
Recovery4	101.18						
Recovery5	101.39						
Recovery6	100.91						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	997.32	998.50	0.82	6.00	0.34	standard error of repeatability x 100/repeatability	0.034
Repeatability2	999.41						
Repeatability3	998.27						
Repeatability4	999.16						
Repeatability5	997.85						
Repeatability6	998.99						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.437

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.873

Figure S6: Uncertainty Assessment of Pinaverium Bromide RS5

Uncertainty in the Standard Sample (ustd)	x	xi	n	ustd Formula	ustd
	100.00	99.80	3.00	x-xi/√n	0.115

Uncertainty in the Slope of Calibration Plot (ucal)	Slope of Calibration	Mean	ss	n	Standard error	ucal Formula	ucal
Slope1	280.13	282.39	2.32	3.00	1.34	standard error of slope x 100/slope	0.474
Slope2	284.76						
Slope3	282.29						

Uncertainty in Recovery of Sample (urec)	Recovery of Sample	Mean	ss	n	Standard error	urec Formula	urec
Recovery1	99.42	99.90	0.29	6.00	0.12	standard error of recovery x 100/recovery	0.118
Recovery2	99.87						
Recovery3	100.16						
Recovery4	99.73						
Recovery5	100.08						
Recovery6	100.14						

Uncertainty Associated with Repeatability (urep)	Repeatability of Sample	Mean	ss	n	Standard error	urec Formula	urep
Repeatability1	1001.89	1003.13	0.80	6.00	0.33	standard error of repeatability x 100/repeatability	0.033
Repeatability2	1003.64						
Repeatability3	1002.71						
Repeatability4	1004.16						
Repeatability5	1003.47						
Repeatability6	1002.93						

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	0.503

Combined uncertainty (U) Formula	U
$\sqrt{(ustd)^2 + (ucal)^2 + (urec)^2 + (urep)^2}$	1.005

Figure S7: Uncertainty Assessment of Pinaverium Bromide RS6