

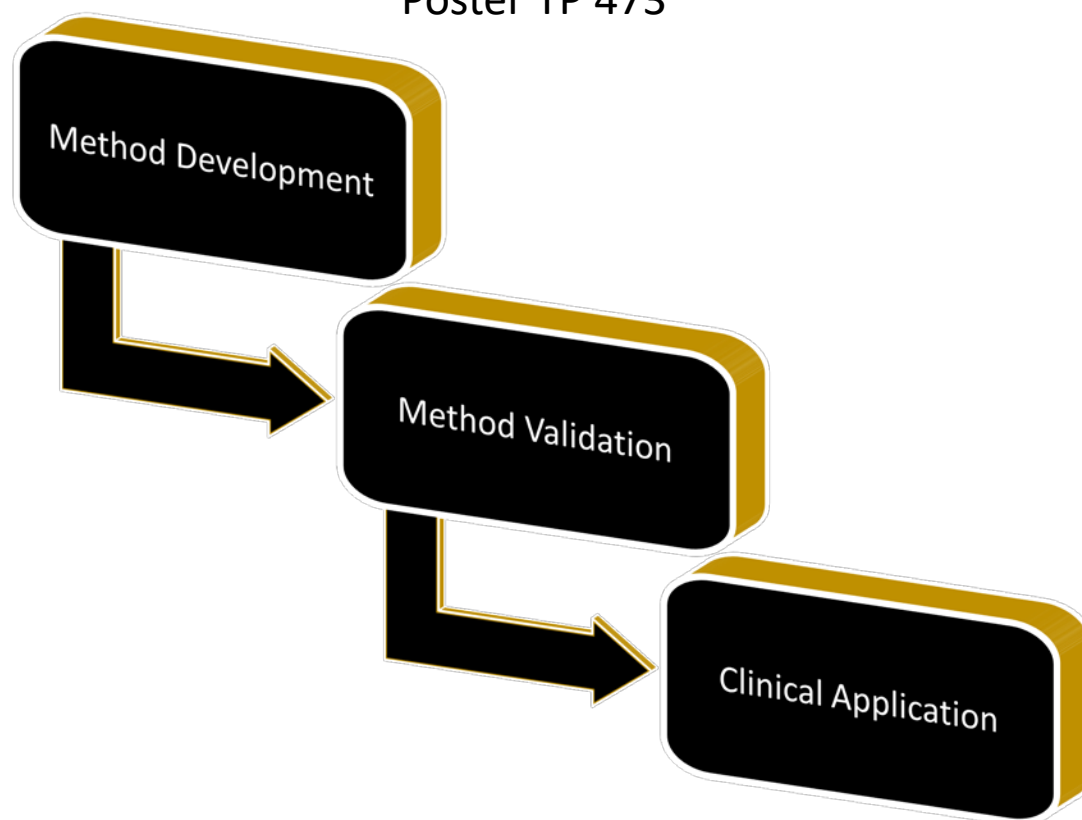
The Development, Validation and Clinical Application of a LC – MS/MS Method for the Absolute Quantification of Anti-Epileptic Drugs (AEDs)

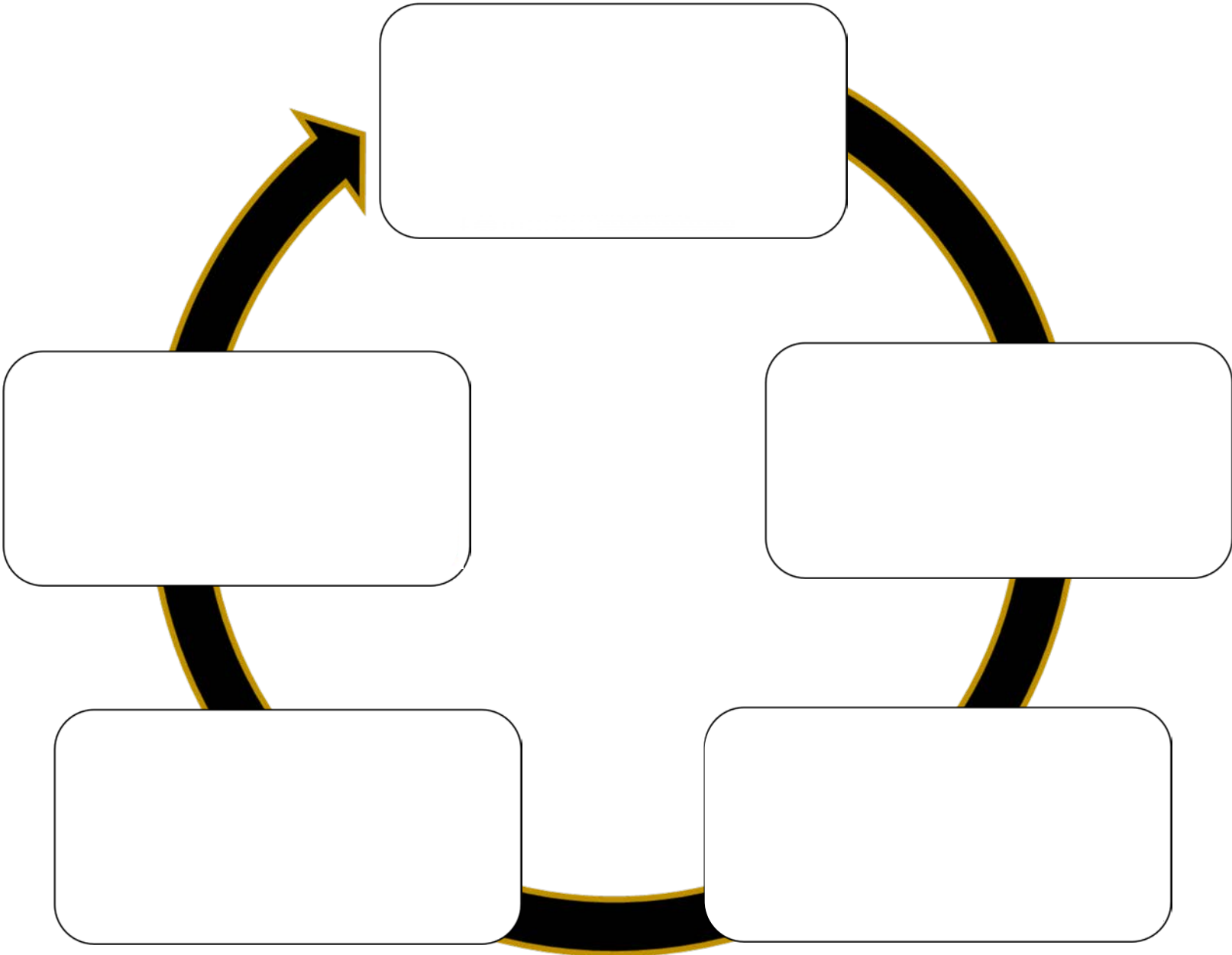
Don E. Davis, Jr., Randi L. Gant-Branum, Stacy D. Sherrod, Jennifer M. Colby and John A. McLean

Skyline User Meeting

June 3, 2018

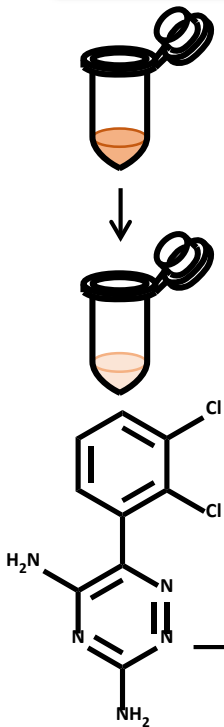
Poster TP 473





LC – MS/MS Absolute Quantification of Lamotrigine

Extraction

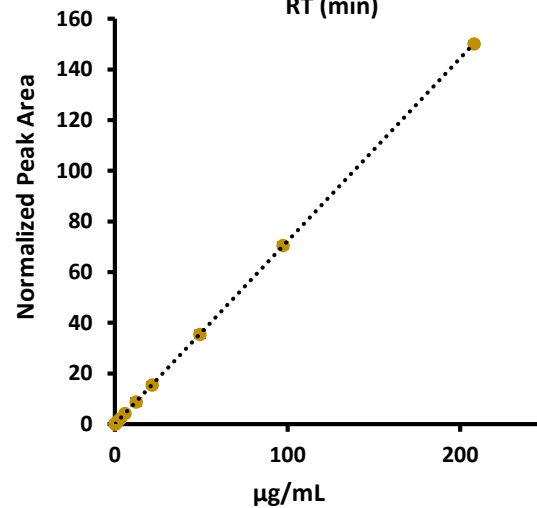
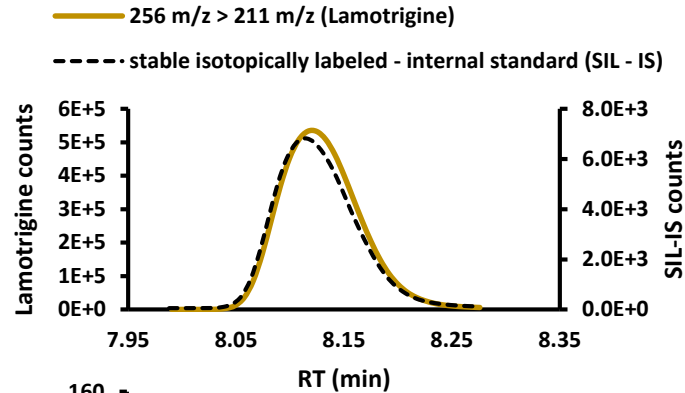


Lamotrigine

RP
LC

MS/MS

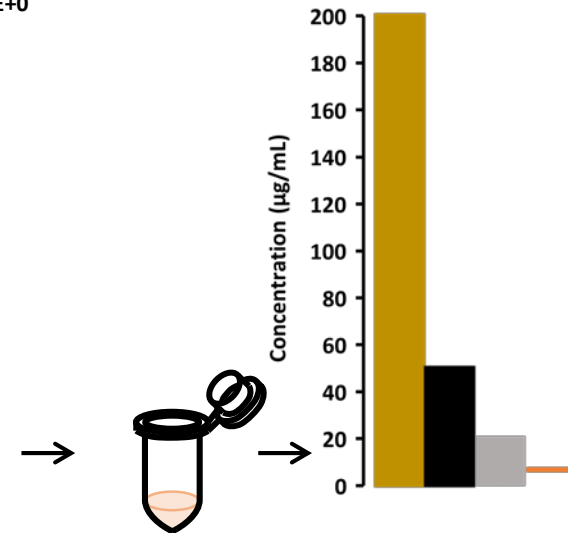
Sample Acquisition
RPLC-MS/MS of AED serum
samples



Data Analysis - Standard curve
generated by extracting peak
areas of Lamotrigine

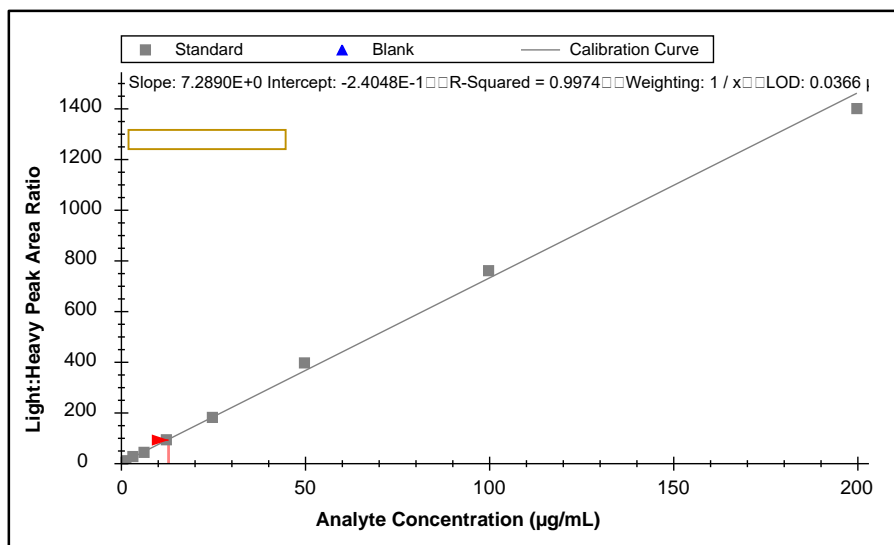
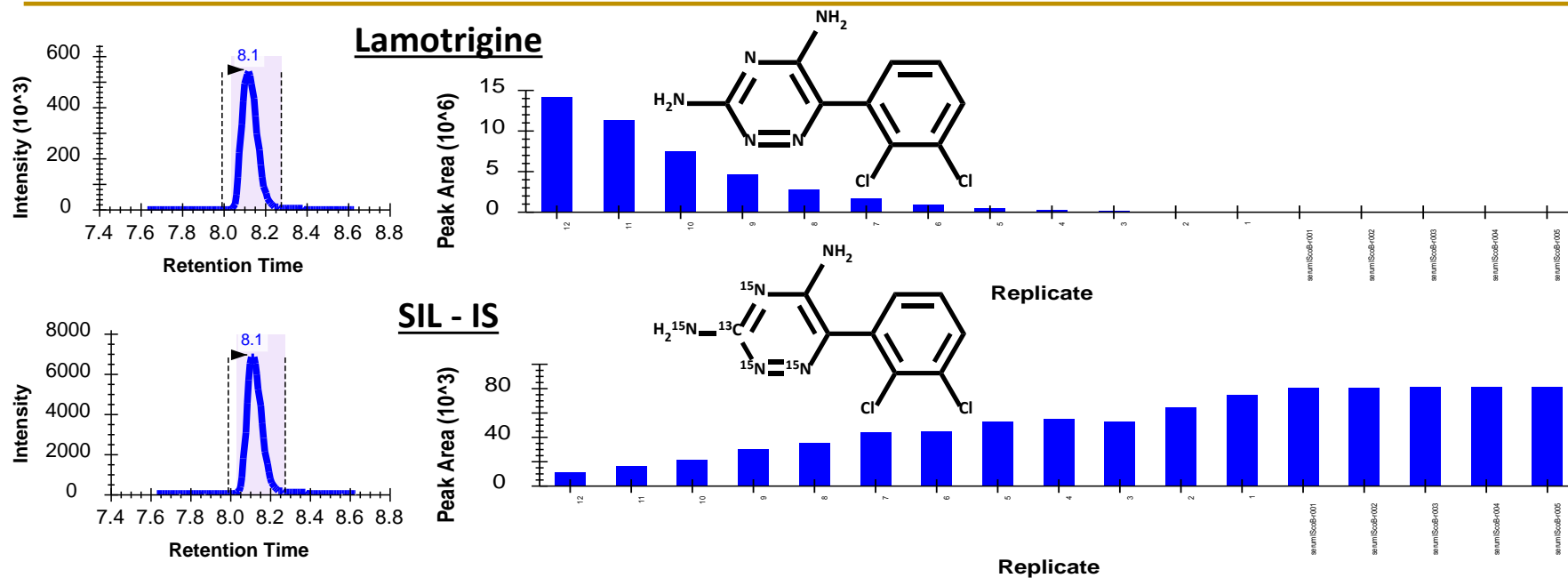
Lamotrigine

- LOQ - ULOQ
- Calibrator Range
- Therapeutic Range
- Patient 1



Using standard curves, calculate
[Lamotrigine] in patient serum
samples

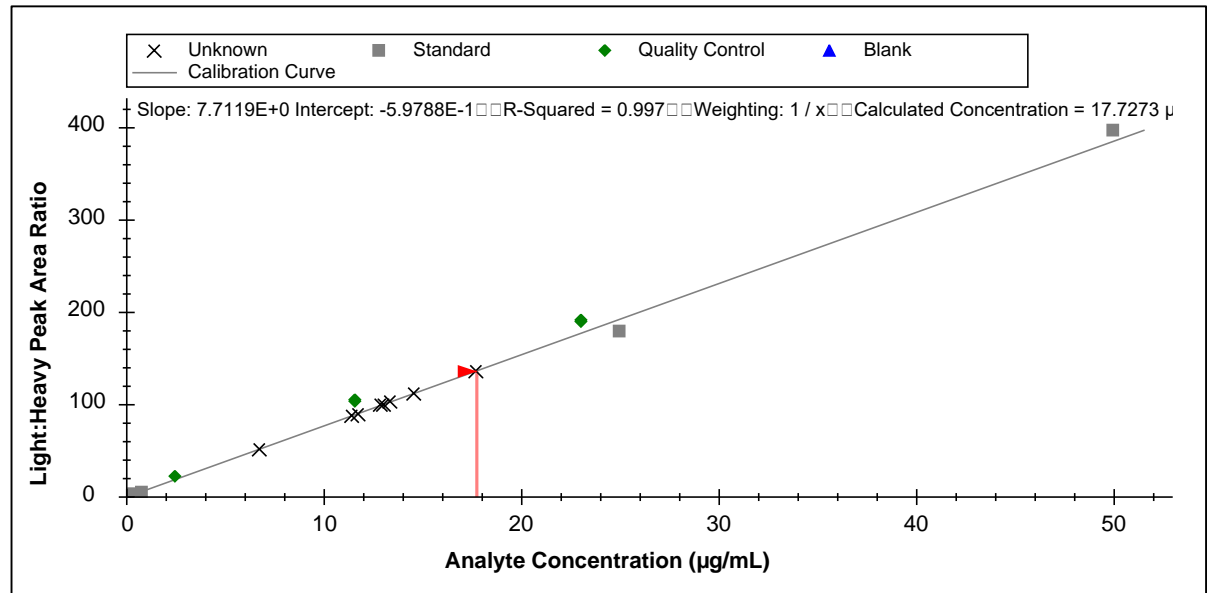
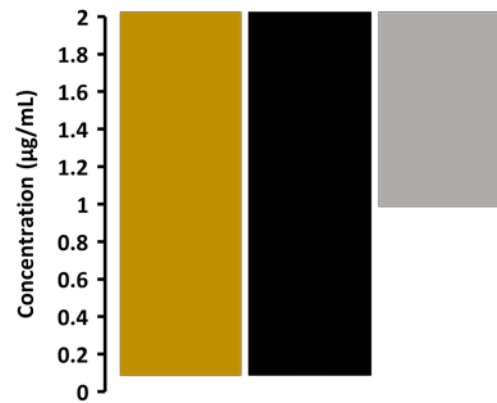
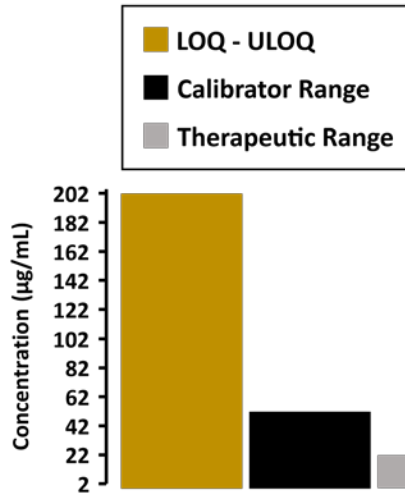
Data Analysis: Skyline (LOD, LOQ & ULOQ)



Cal Level	Expected Concentration	Avg %error	%RSD (Peak Area)	%RSD (RT)
12	200	5.1%	0.8%	0.2%
11	100	-4.9%	0.7%	0.2%
10	50.0	-9.2%	0.9%	0.2%
9	25.0	1.1%	0.7%	0.2%
8	12.5	-3.9%	0.5%	0.2%
7	6.25	1.4%	0.4%	0.2%
6	3.13	-5.3%	0.9%	0.2%
5	1.56	7.9%	0.6%	0.2%
4	0.78	4.2%	0.7%	0.2%
3	0.39	-0.4%	0.5%	0.2%
2	0.20	6.3%	0.9%	0.2%
1	0.10	-1.6%	0.8%	0.2%

Data Analysis: Skyline (Clinical Application)

Lamotrigine



Clinical Application: Patient Samples (Lamotrigine)



Conclusions



Consistent drug concentration measurements are vital for clinical analysis



LC-MS/MS based absolute quantitation provides reliable clinical analysis



We have successfully developed a quantitative method for an AED panel (Poster TP 473)



Acknowledgments

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