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**Supplementary files**

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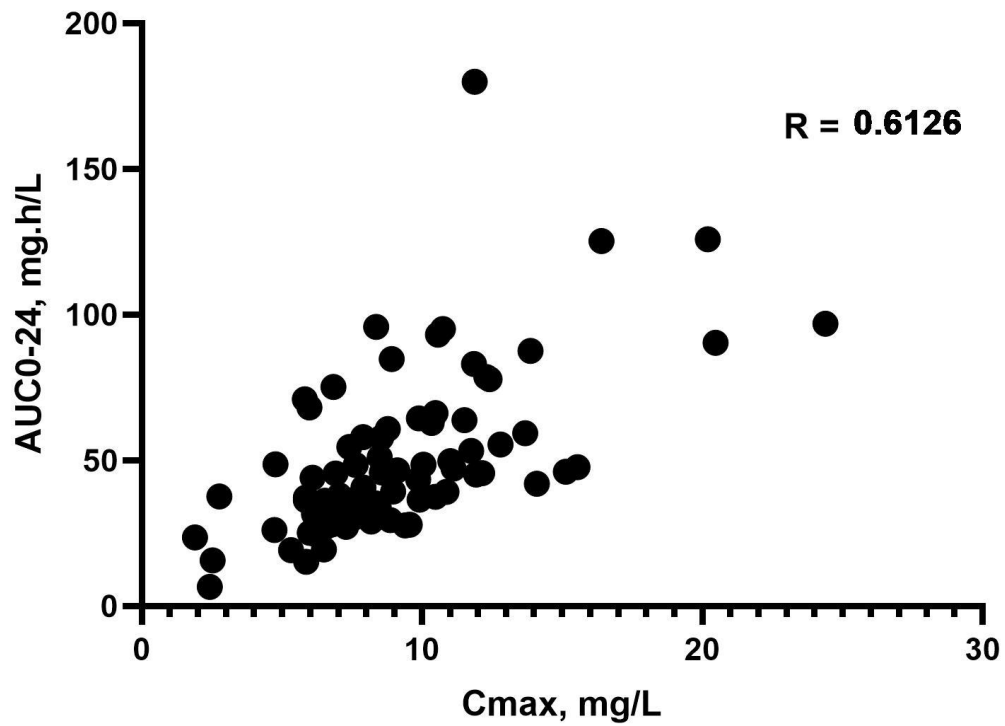
Page 4: Supplementary Figure 3

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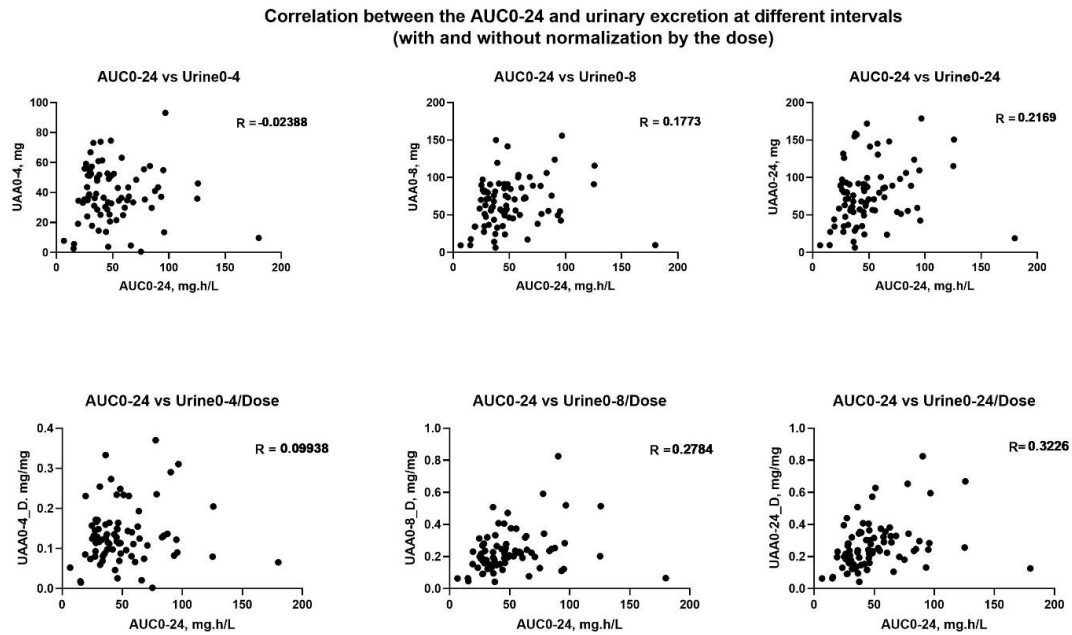
2

### Correlation between Cmax and AUC0-24



**Supplementary Figure 1 legend:** Correlation of serum peak concentration (Cmax) and serum total area under the concentration time curve (AUC0-24). N= 82 with calculable AUC0-24.

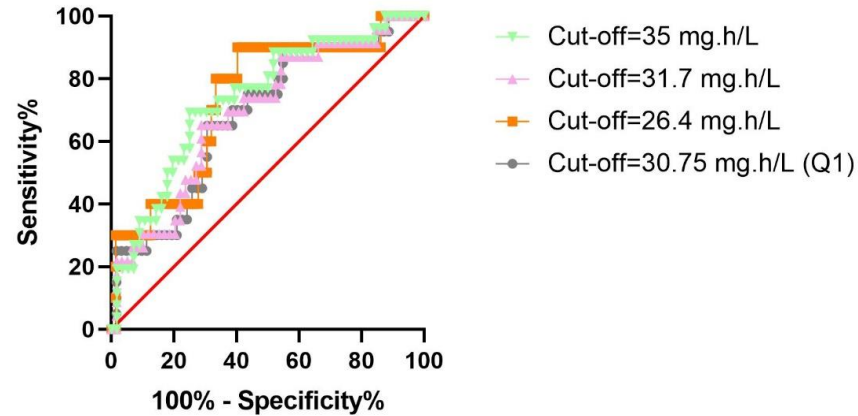
3



**Supplementary Figure 2 legend:** Correlation of rifampin serum area under the concentration time curve over the 24 hour dosing interval (AUC0-24) and urinary excretion of rifampin at different time intervals (0-4 hours, 0-8 hours and 0-24 hours) following dose. Urinary excretion is both unadjusted for dose (top panels) and adjusted (bottom panels).

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### ROC curves with different thresholds for AUC0-24 vs Urine0-24/Dose



cut-off=26.4 mg.h/L

Area under the ROC curve	
Area	0.7333
Std. Error	0.08360
95% confidence interval	0.5695 to 0.8972
P value	0.0173

cut-off=31.7 mg.h/L

Area under the ROC curve	
Area	0.6927
Std. Error	0.06395
95% confidence interval	0.5674 to 0.8180
P value	0.0070

cut-off=35 mg.h/L

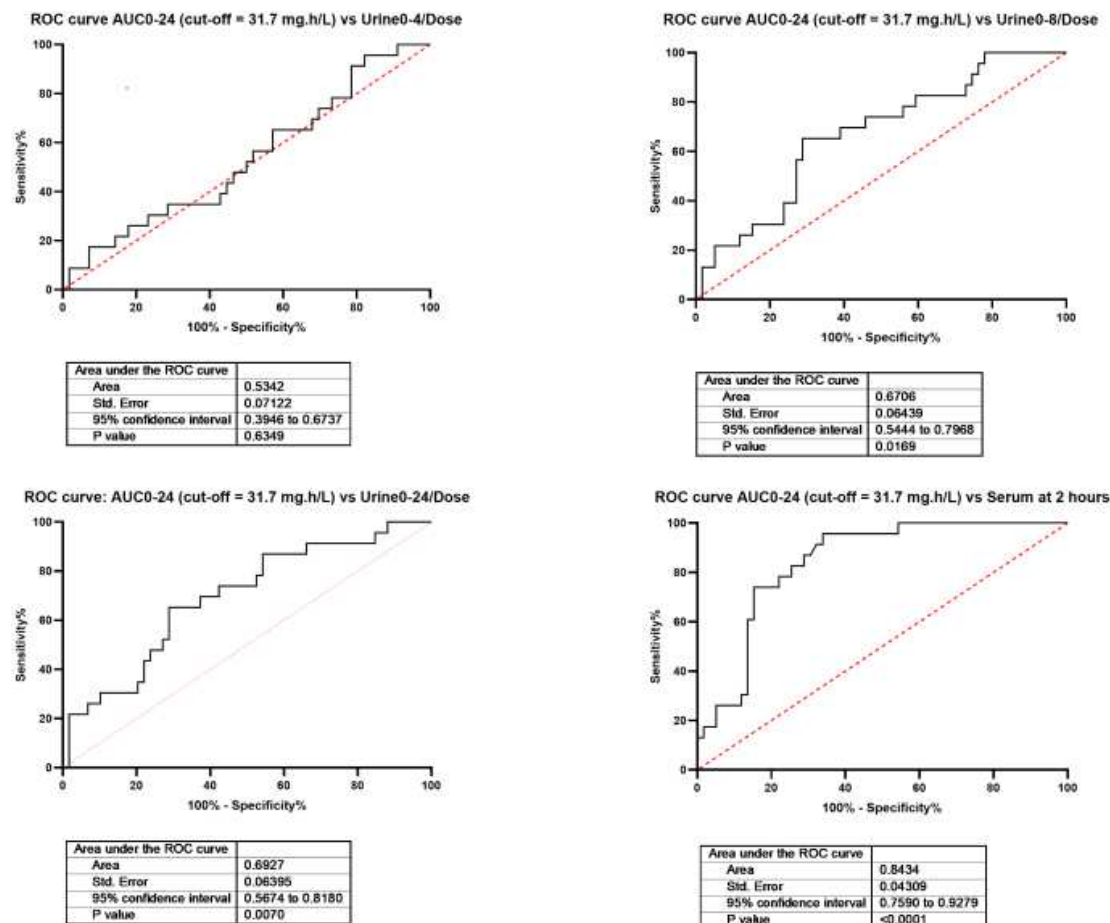
Area under the ROC curve	
Area	0.7356
Std. Error	0.05902
95% confidence interval	0.6199 to 0.8513
P value	0.0006

cut-off=30.75 mg.h/L (Q1)

Area under the ROC curve	
Area	0.6847
Std. Error	0.06738
95% confidence interval	0.5526 to 0.8167
P value	0.0134

**Supplemental Figure 3 legend:** ROC= Receiver Operator Characteristic curves for rifampin urinary dose excretion over 24 hours predicting different serum area under the concentration time curve (AUC0-24) threshold values: cut-off 26.4 mg\*h/L derived from weekly rifampin AUC to achieve <5% treatment failure among population of children from India [supplemental citation 1]; cut-off 31.7 mg\*h/L derived from weekly rifampin AUC to achieve <5% treatment modeled among a multinational population of children [supplemental citation 2 and manuscript citation 22]; 35 mg\*h/L derived from AUC0-24 predictive of treatment failure in an adult cohort from South Africa [supplemental citation 3]; cut-off 30.75 mg\*h/L as first quartile (Q1) of median drug AUC0-24 in Tanzanian cohort of this study.

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**Supplementary Figure 4 legend:** ROC= Receiver Operator Characteristic curves for rifampin urinary dose excretion over 0-4 hours, 0-8 hours, and 0-24 hours, and serum 2hr value (C2hr) to predict calculated serum area under the concentration time curve (AUC0-24) threshold value previously associated with tuberculosis treatment outcome in pediatric cohorts. C2hr has been commonly used estimate of peak concentration when applying therapeutic drug monitoring for rifampin in clinical settings.

**References for Supplementary Files (Supplementary Figure 3)**

1. Guiastrenec B, Ramachandran G, Karlsson MO, Kumar AKH, Bhavani PK, Gangadevi NP, Swaminathan S, Gupta A, Dooley KE, Savic RM. Suboptimal Antituberculosis Drug Concentrations and Outcomes in Small and HIV-Coinfected Children in India: Recommendations for Dose Modifications. *Clin Pharmacol Ther* 2018;104(4):733-741.
2. Radtke K, Dooley K, Dodd P et al. Alternative dosing guidelines to improve outcomes in childhood tuberculosis: a mathematical modelling study. *Lancet Child Adolescent Health* 2019; 3(9):636-645.  
(reference #22 in manuscript)
3. Pasipanodya JG, McIlleron H, Burger A, Wash PA, Smith P, Gumbo T. Serum drug concentrations predictive of pulmonary tuberculosis outcomes. *J Infect Dis* 2013; 208(9):1464-73.