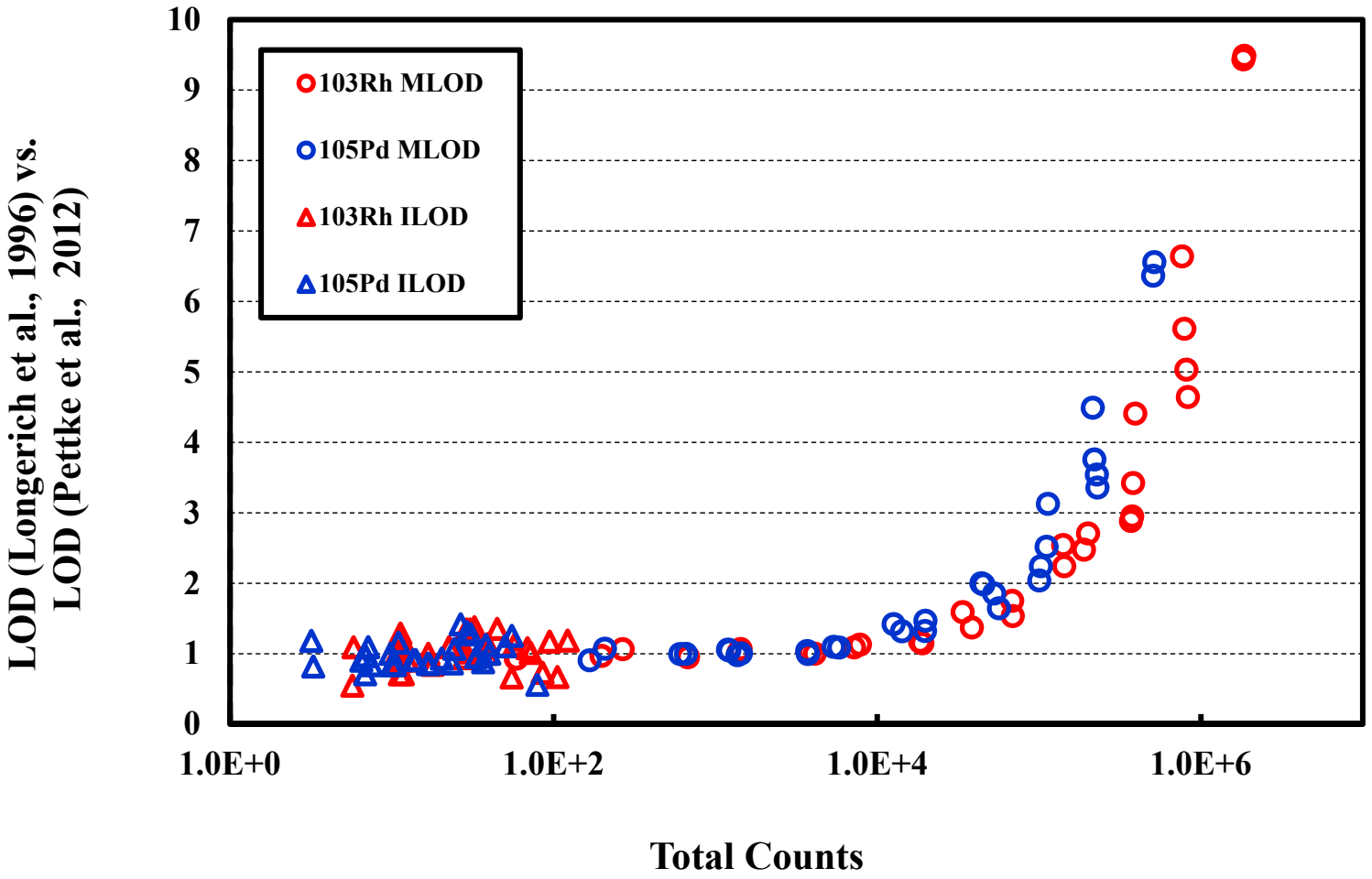
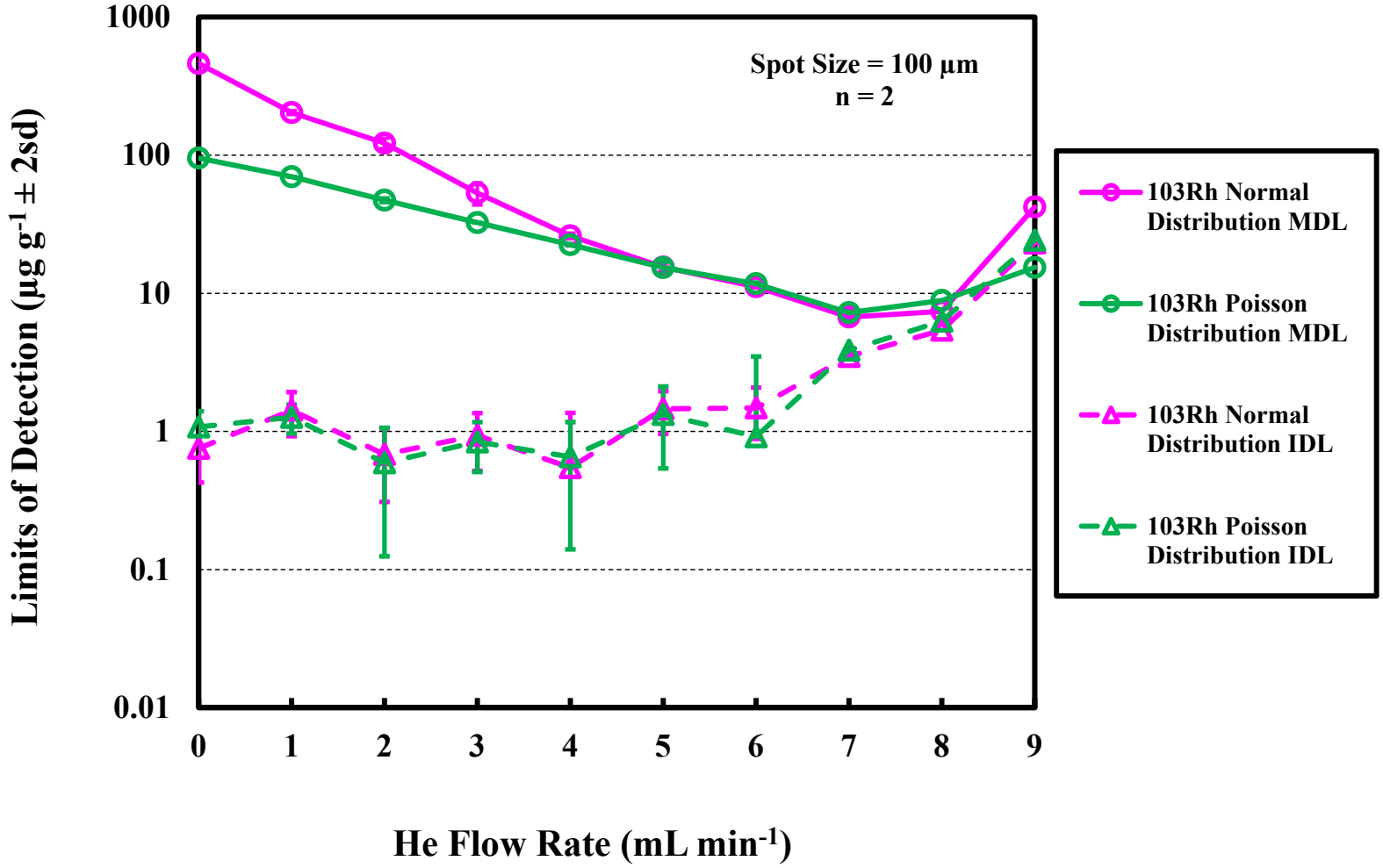
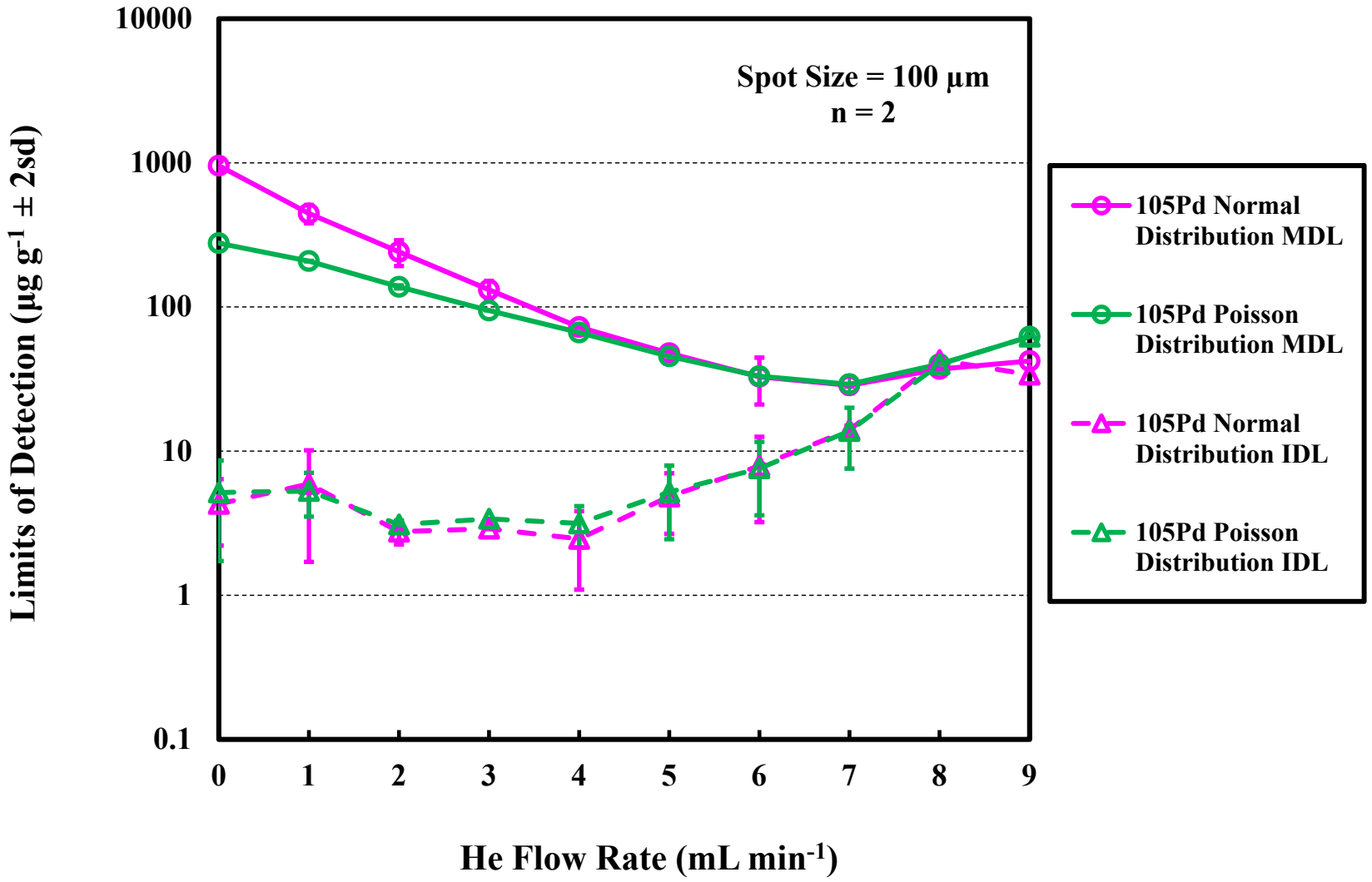


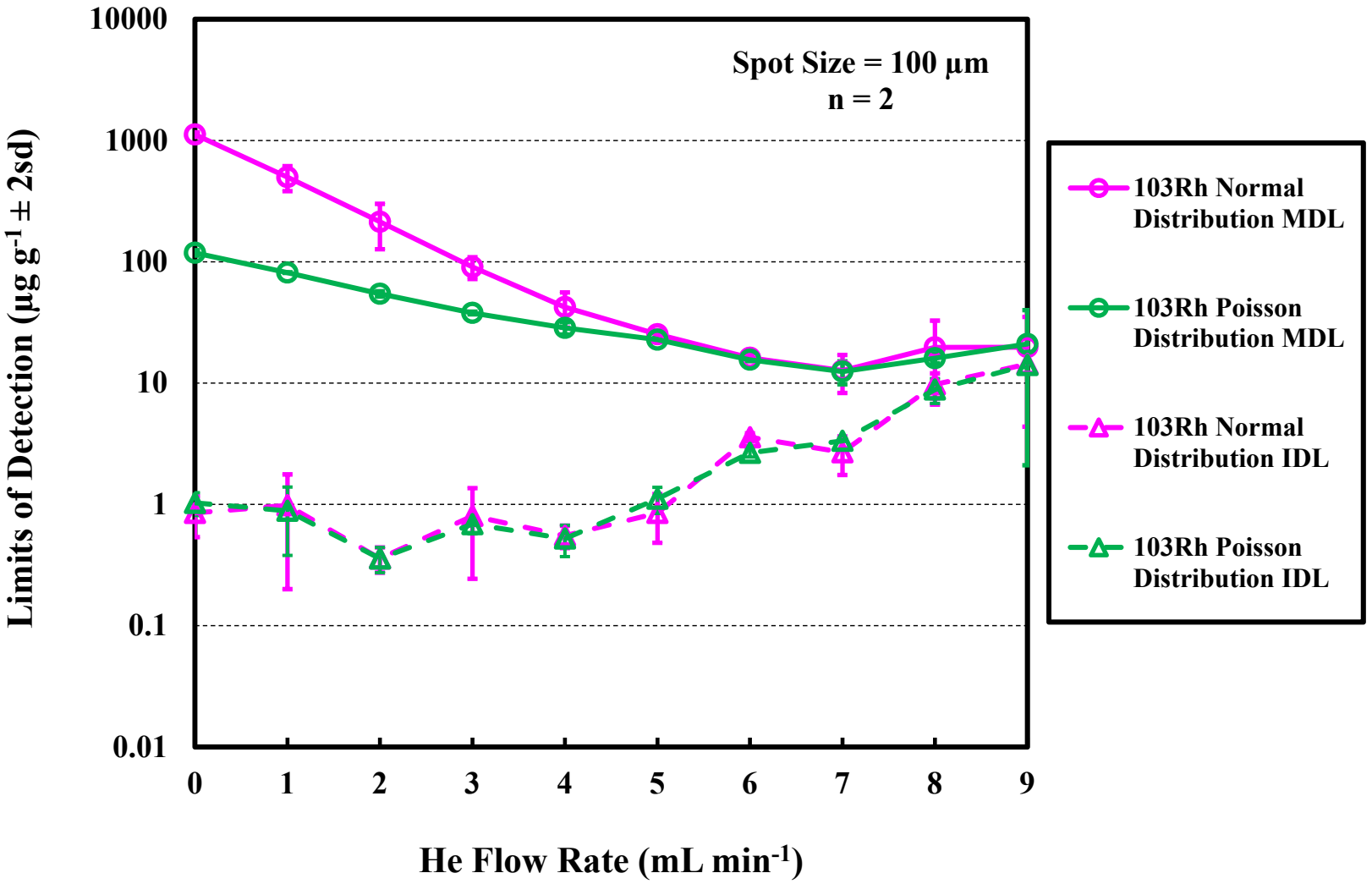
Supplementary Fig. 1† The instrument and method limits of detection (ILOD and MLOD) for ^{103}Rh and ^{105}Pd determined using the equations of Longerich et al. (1996)[62] and Pettke et al. (2012)[64] as a function of the total measured counts for Agilent 7700x LA-ICP-MS analysis of chalcopyrite and bornite.



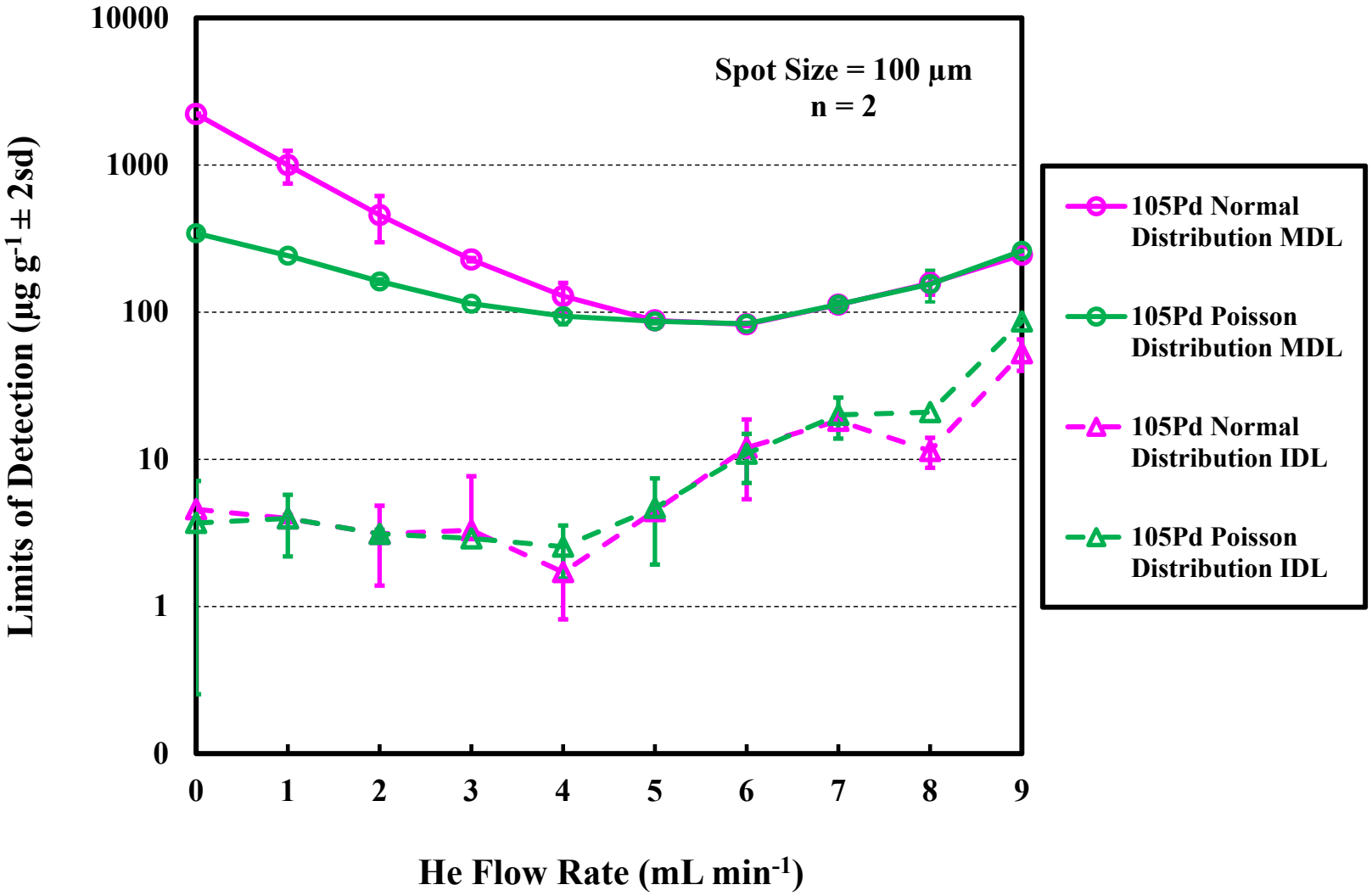
Supplementary Fig. 2-1† Method and instrument limits of detection (MLOD and ILOD) for ^{103}Rh determined using the equations of Longerich et al. (1996)[62] (normal distribution) and Pettke et al. (2012)[64] (Poisson distribution) for Agilent 7700x LA-ICP-MS analysis of chalcopyrite CRG-1902 (34.52% Cu).



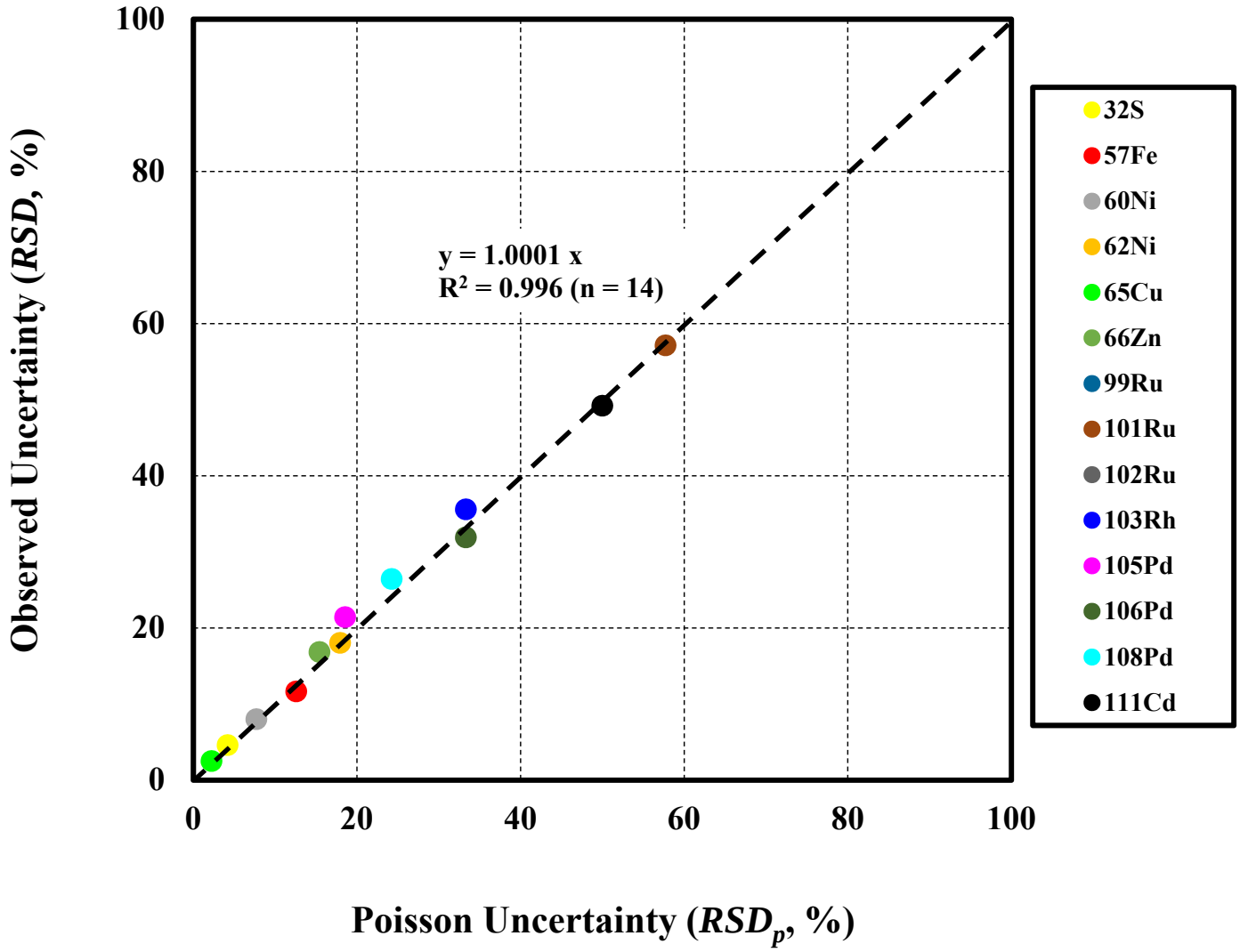
Supplementary Fig. 2-2† Method and instrument limits of detection (MLOD and ILOD) for ^{105}Pd determined using the equations of Longerich et al. (1996)[62] (normal distribution) and Pettke et al. (2012)[64] (Poisson distribution) for Agilent 7700x LA-ICP-MS analysis of chalcopyrite CRG-1902 (34.52% Cu).



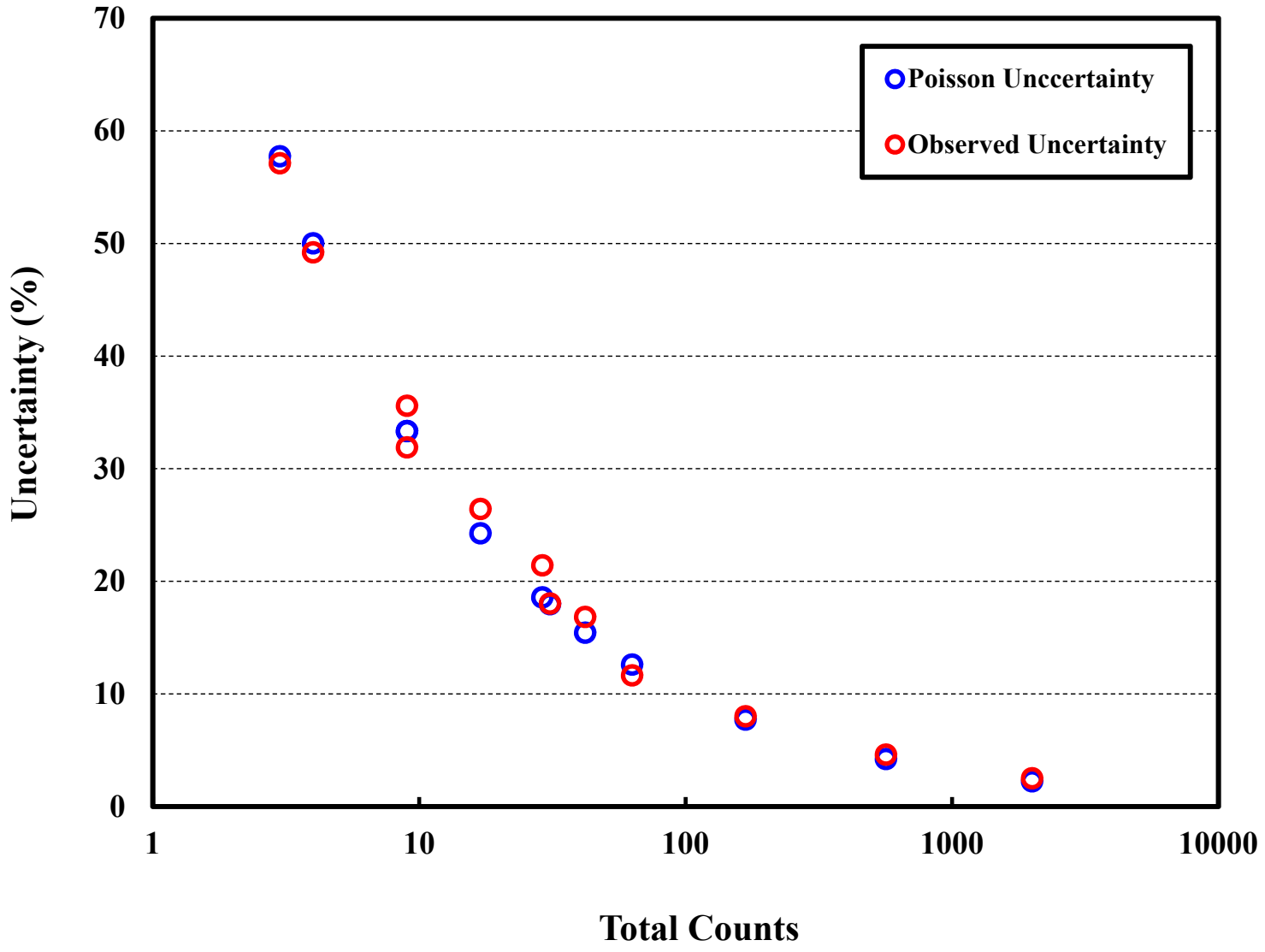
Supplementary Fig. 3-1† Method and instrument limits of detection (MLOD and ILOD) for ^{103}Rh determined using the equations of Longerich et al. (1996)[62] (normal distribution) and Pettke et al. (2012)[64] (Poisson distribution) for Agilent 7700x LA-ICP-MS analysis of bornite OSP9 (62.19% Cu).



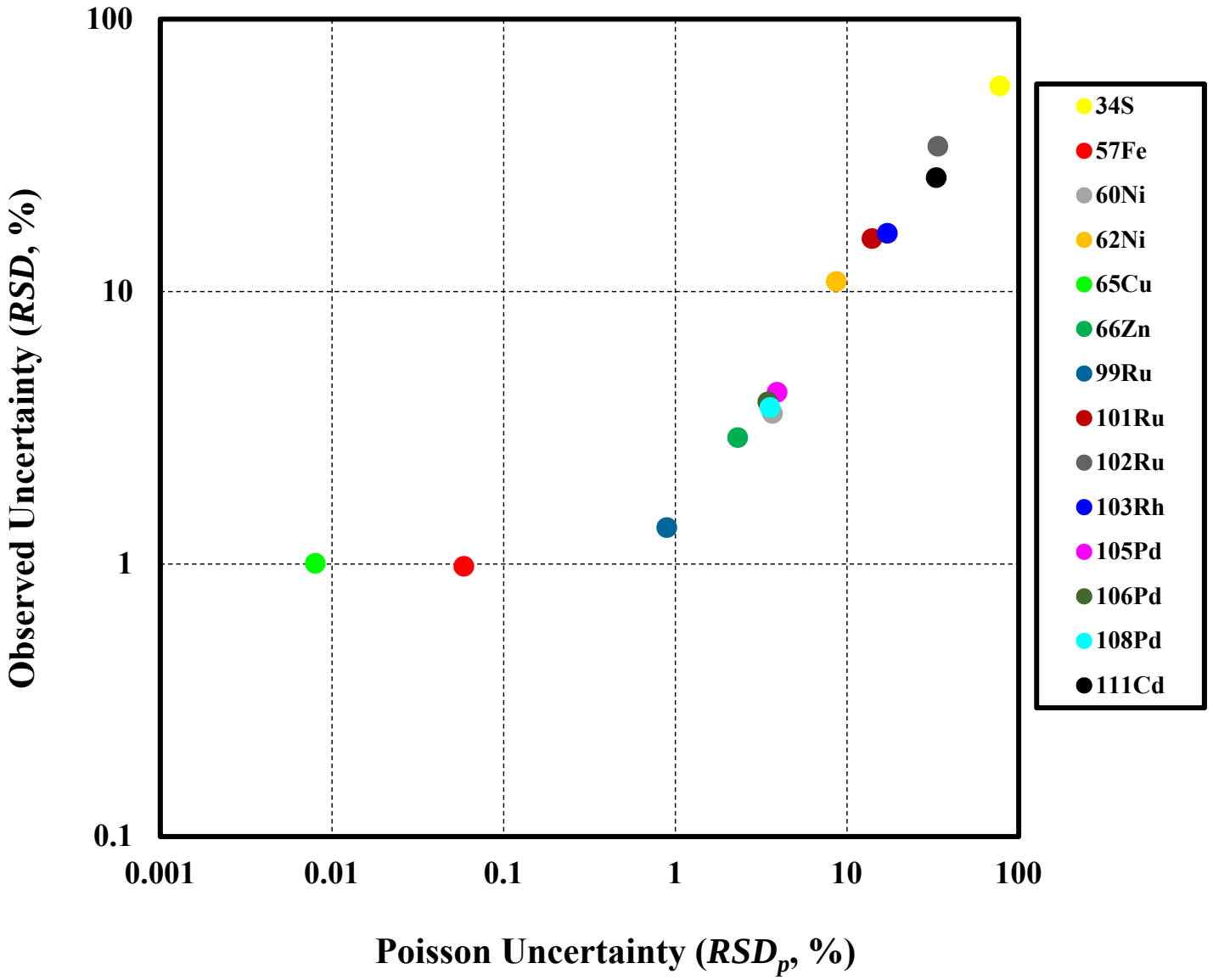
Supplementary Fig. 3-2† Method and instrument limits of detection (MLOD and ILOD) for ^{105}Pd determined using the equations of Longerich et al. (1996)[62] (normal distribution) and Pettke et al. (2012)[64] (Poisson distribution) for Agilent 7700x LA-ICP-MS analysis of bornite OSP9 (62.19% Cu).



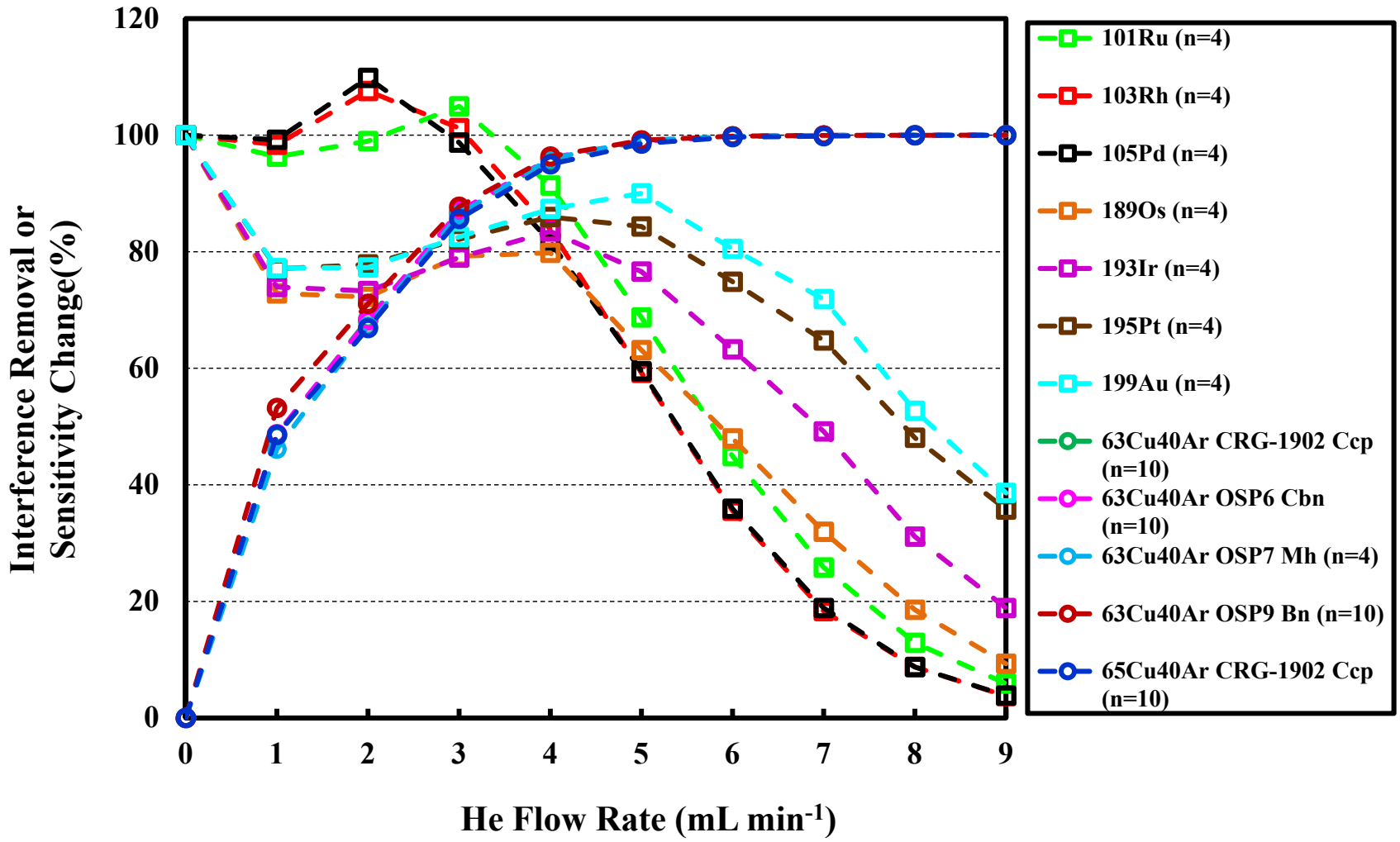
Supplementary Fig. 4-1† Observed uncertainty versus Poisson uncertainty for gas blank signals for 8900x LA-ICP-MS/MS PGE analysis of Cu-rich mineral bornite OSP9 (AU21A17 experiment).



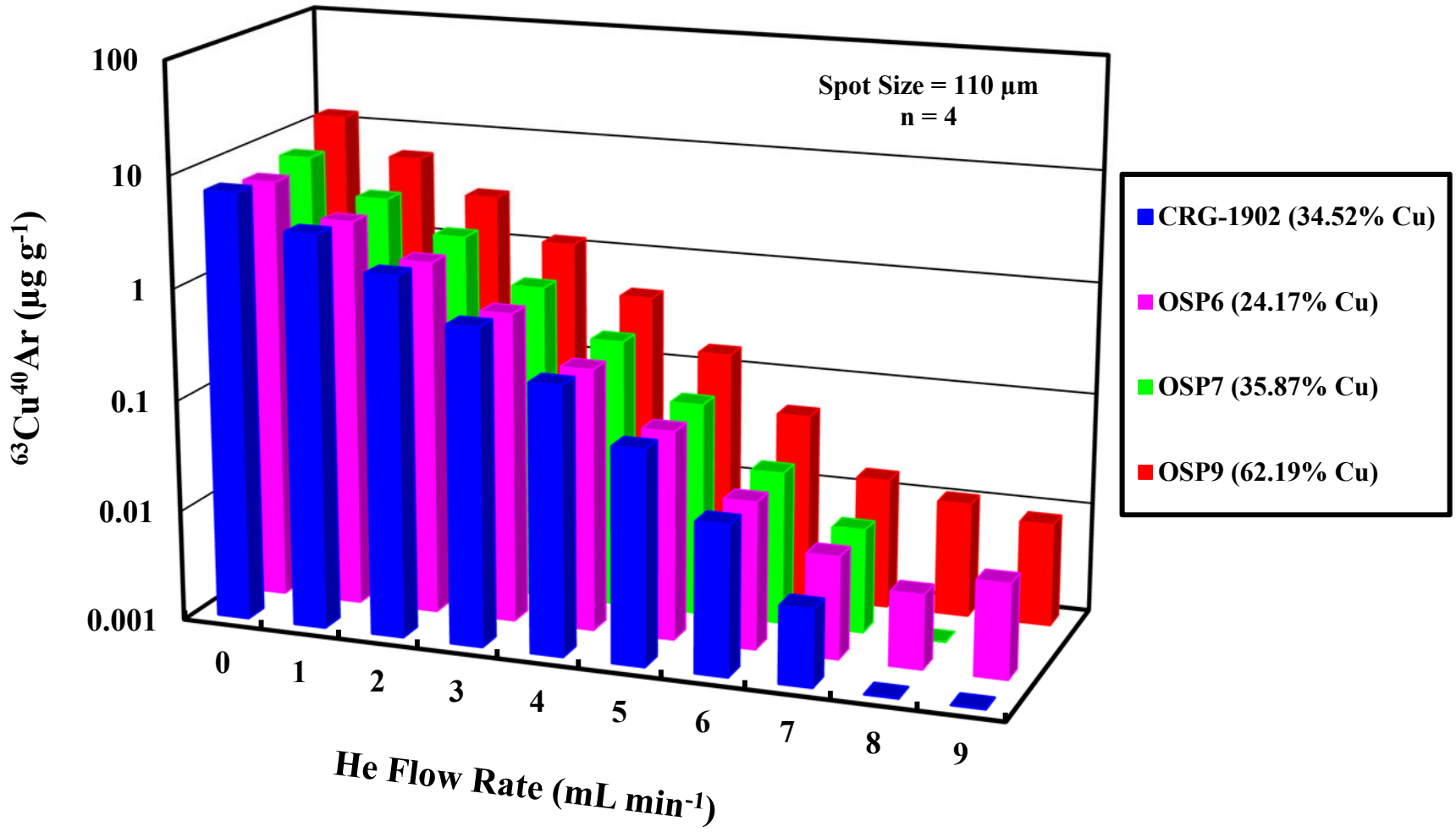
Supplementary Fig. 4-2† Poisson and observed measurement uncertainties versus total counts for the gas blank signals in 8900x LA-ICP-MS/MS PGE analysis of Cu-rich mineral bornite (AU21A17 experiment).



Supplementary Fig. 5† Observed uncertainty versus Poisson uncertainty of gas blank corrected sample signal in 8900x LA-ICP-MS/MS PGE analysis of Cu-rich mineral bornite OSP9 (AU21A17 experiment).



Supplementary Fig. 6-1† $^{63}Cu^{40}Ar^{+}$ and $^{65}Cu^{40}Ar^{+}$ interference removal and sensitivity change of $^{103}Rh^{+}$ and $^{105}Pd^{+}$, as well as other PGE, with change of He collision gas flow rate using 7700x LA-ICP-MS.



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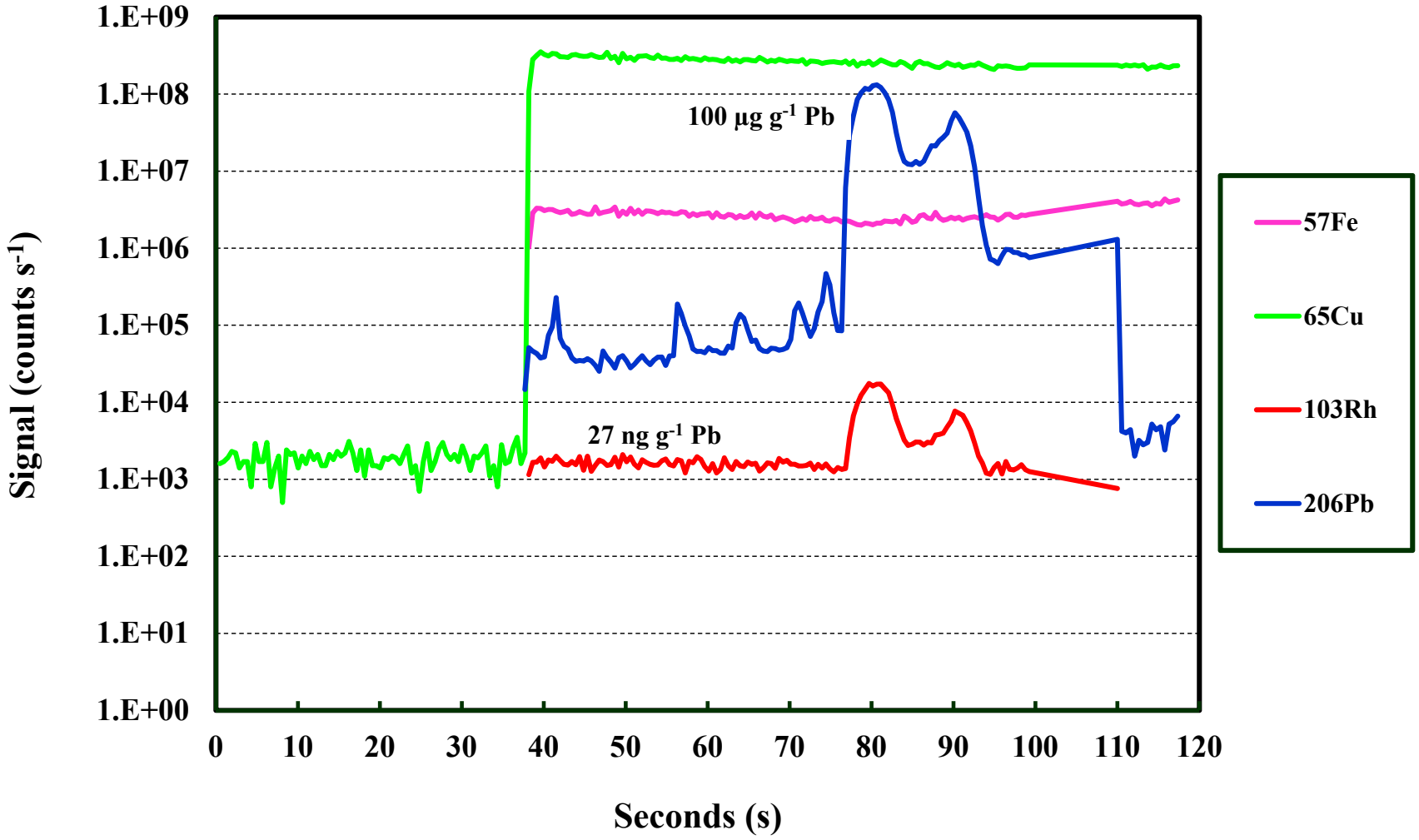
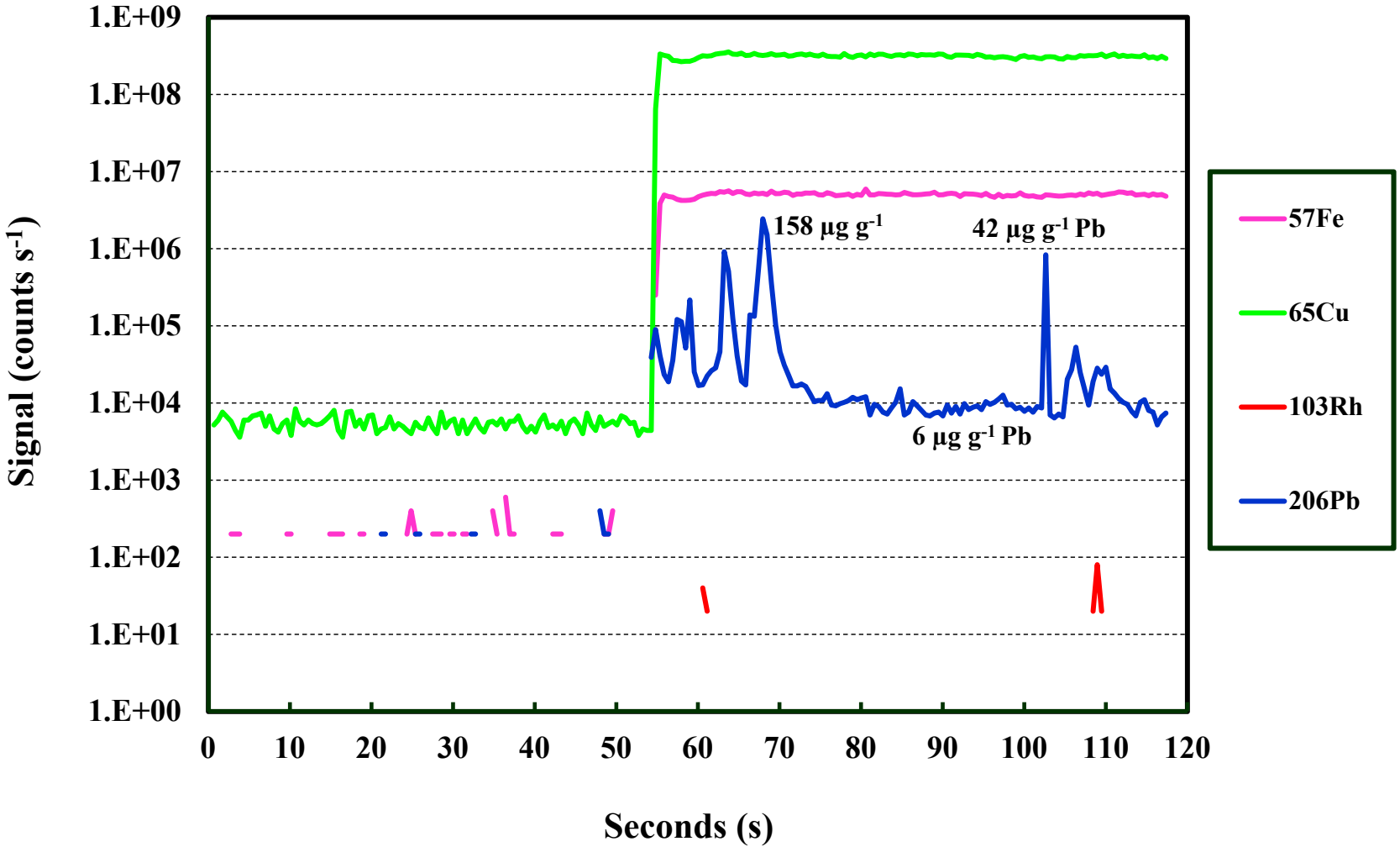
34 Supplementary Fig. 6-2† $^{63}Cu^{40}Ar^{+}$ contribution on $^{103}Rh^{+}$ in 7700x LA-ICP-MS analysis of Cu-rich materials with He collision gas flow

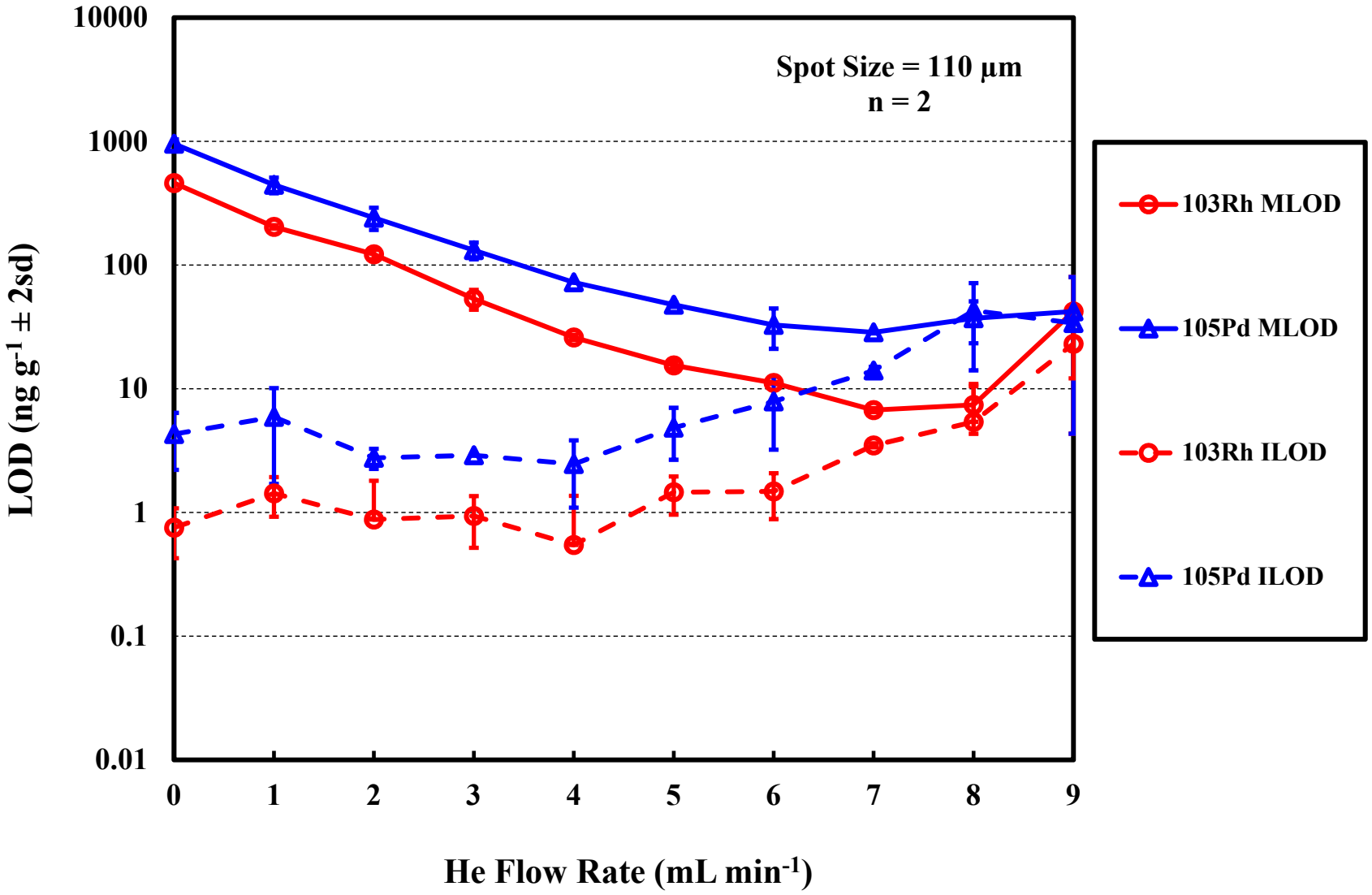
35 rates of 0 to 9 mL min^{-1}.



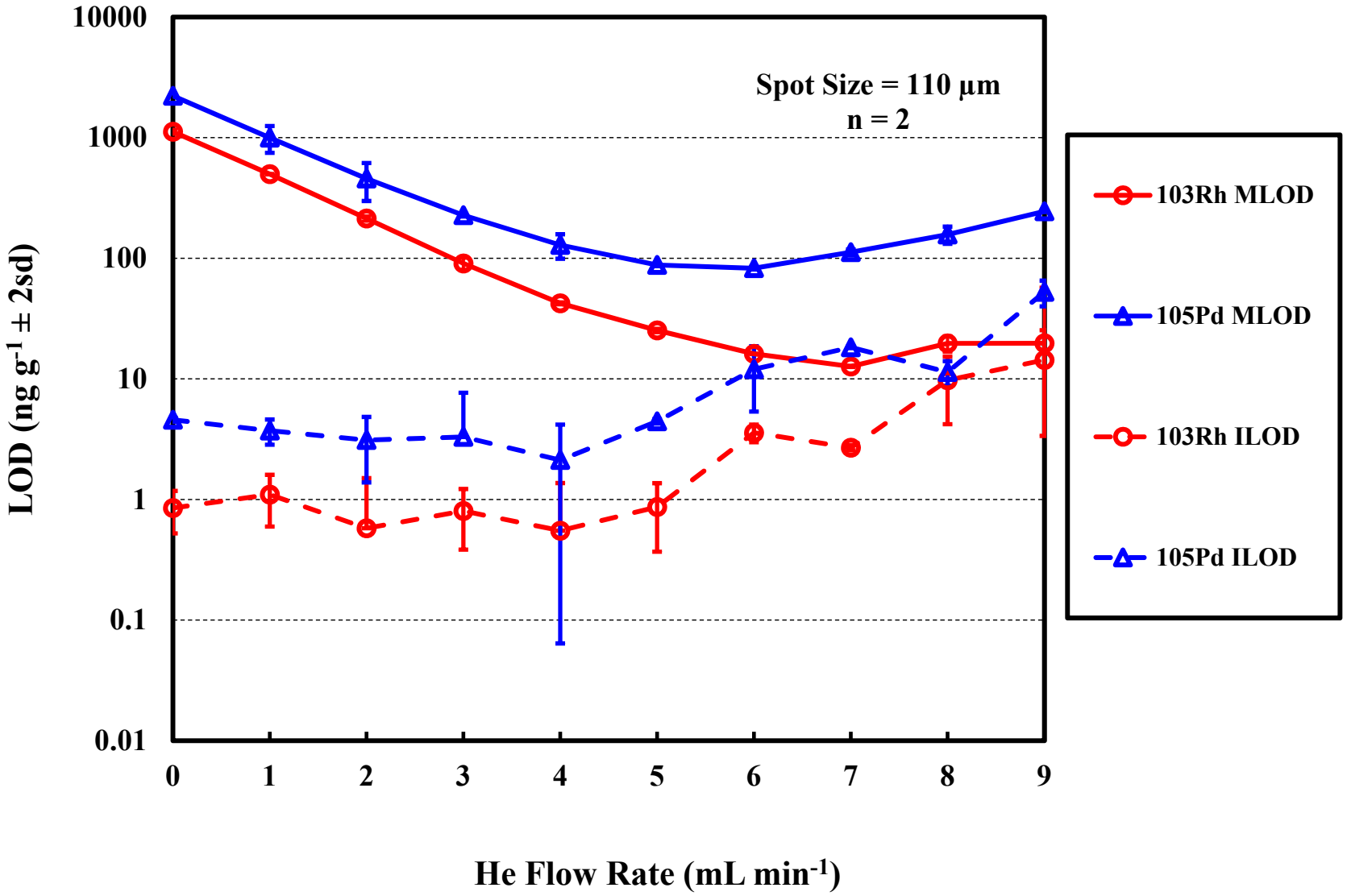
Supplementary Fig. 7-1† Time resolved signals for analysis of bornite CMNMC 42116 (analysis JN09F07) containing 27 ng g^{-1} to 100 µg g^{-1} Pb by 7700x LA-ICP-MS.



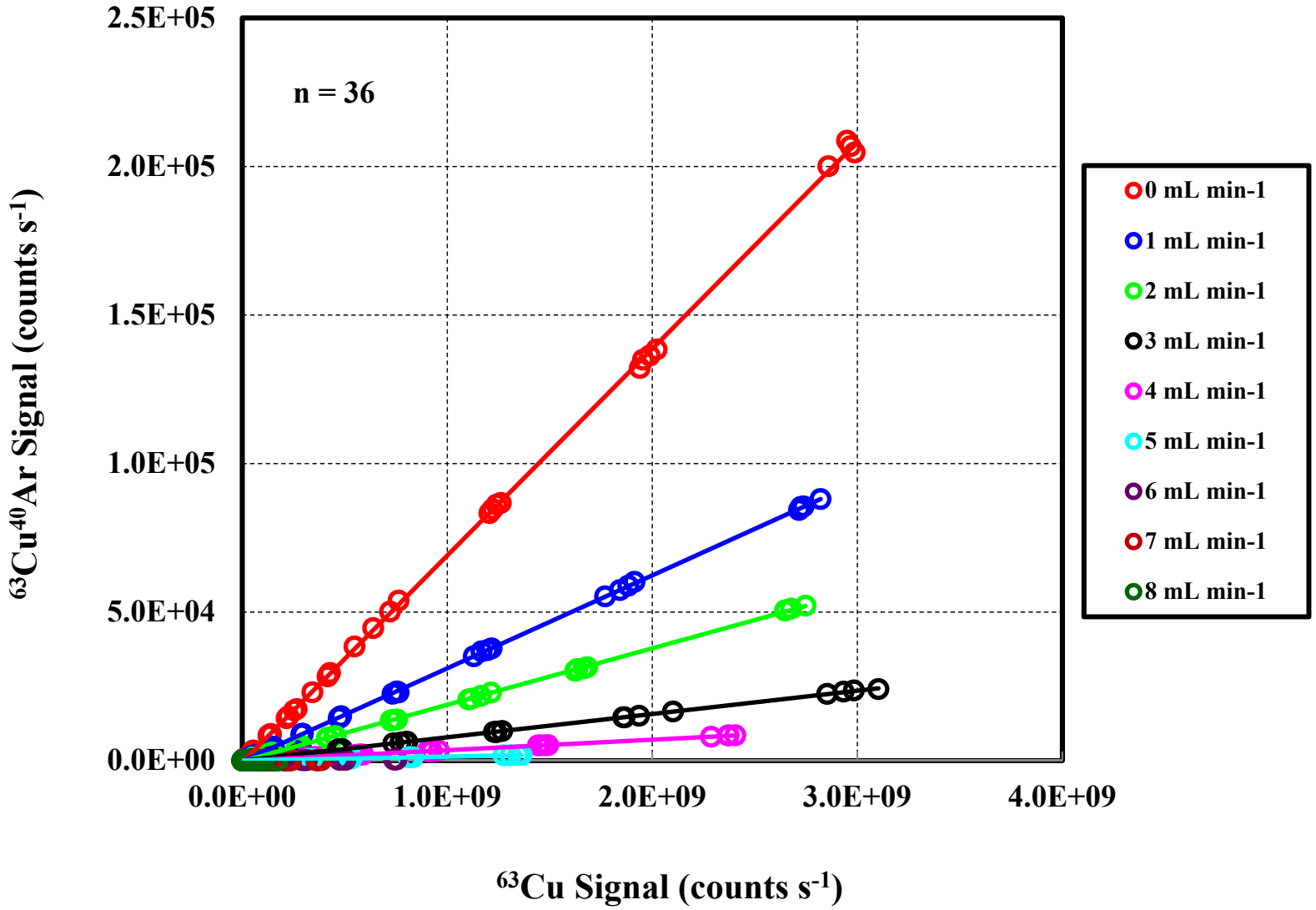
Supplementary Fig. 7-2† Time resolved signals for analysis of bornite CMNMC 42116 (analysis AU22D15) containing 6 to 158 µg g^{-1} Pb by 8900x LA-ICP-MS/MS.



Supplementary Fig. 8-1† Method and instrument limits of detection (MLOD and ILOD) for ^{103}Rh and ^{105}Pd for Agilent 7700x LA-ICP-MS analysis of chalcopyrite CRG-1902 (34.52% Cu).



Supplementary Fig. 8-2† Method and instrument limits of detection (MLOD and ILOD) for ^{103}Rh and ^{105}Pd for Agilent 7700x LA-ICP-MS analysis of bornite OSP9 (62.19%).



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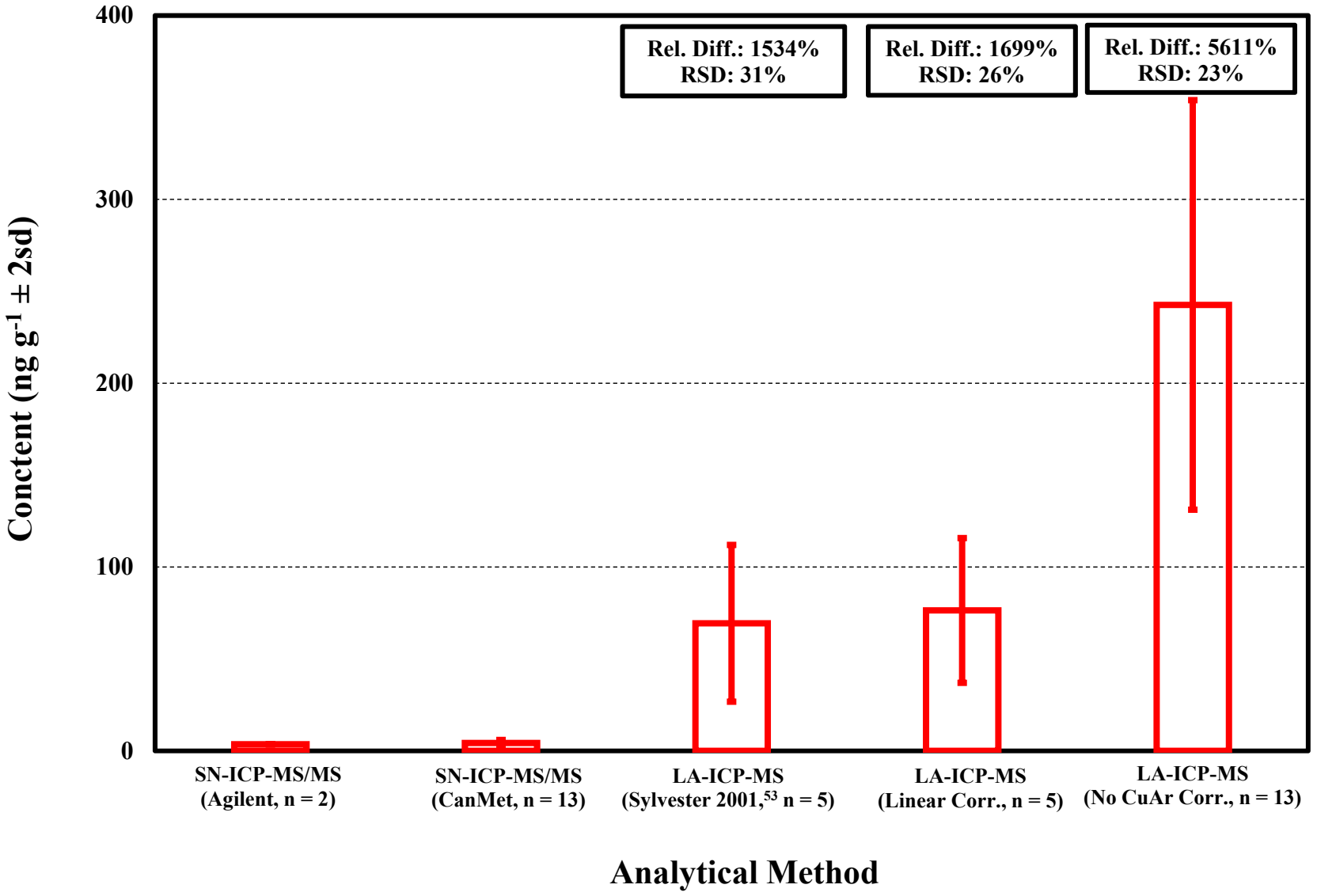
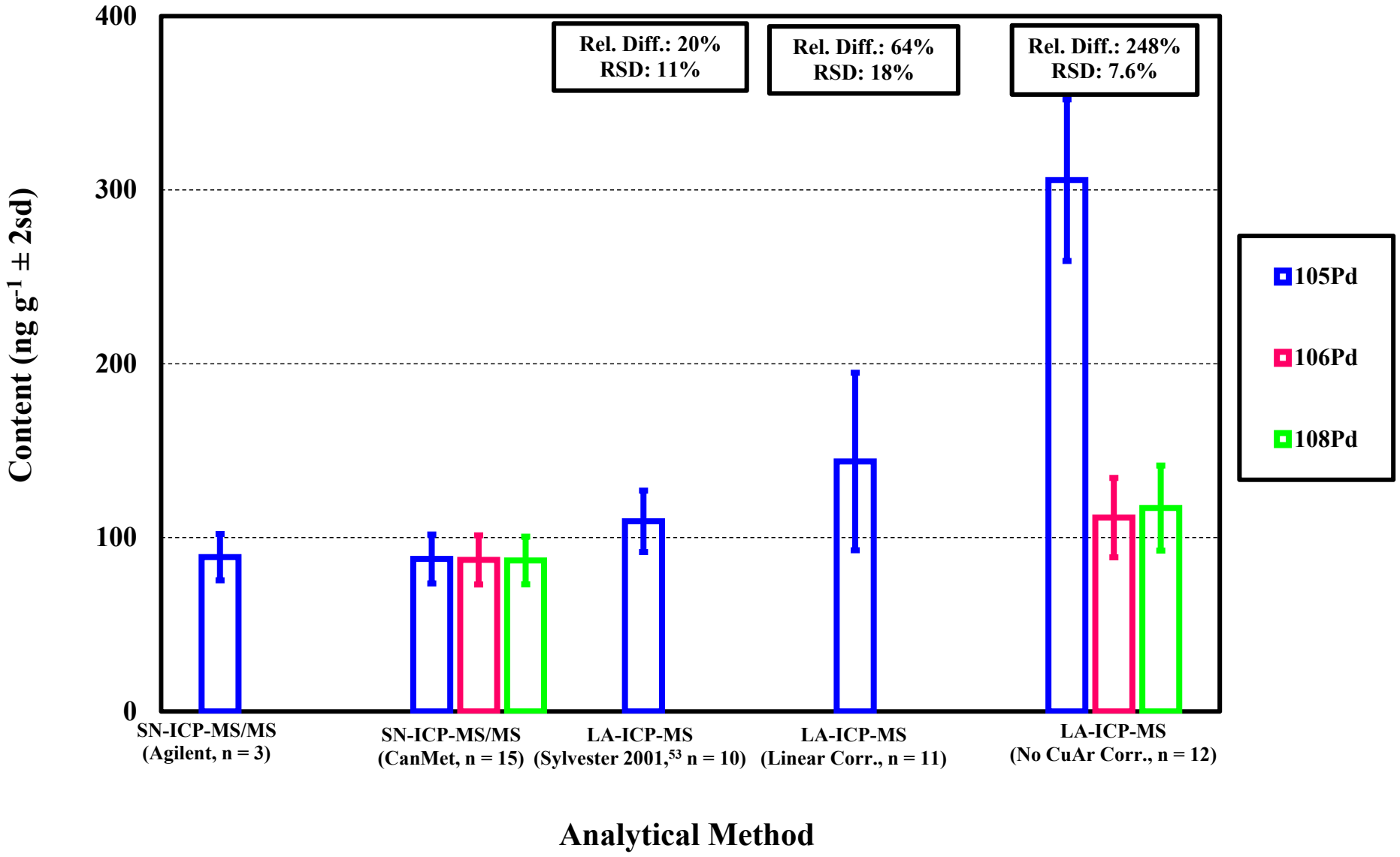
49 Supplementary Fig. 9† Signals (counts s^{-1}) of $^{63}Cu^{40}Ar^{+}$ vs. $^{63}Cu^{+}$ in 7700x LA-ICP-MS analyses of chalcopyrite CRG-1902 (34.52% Cu)

50 at He collision gas flow rate of 0 to 8 mL min^{-1}.



Supplementary Fig. 10-1† Rh content determination with and without using the Sylvester (2001)[53] and linear CuAr interference correction procedures for 7700x LA-ICP-MS PGE analysis of bornite OSP9 (62.19% Cu).



Supplementary Fig. 10-2† Pd content determination with and without the Sylvester (2001)[53] and linear CuAr interference correction procedures for 7700x LA-ICP-MS PGE analysis of cubanite OSP6 (24.17% Cu).