Figure 3: Empirical type I error observed when self-reported ethnicity (assuming no misclassification error) and individual ancestry proportion are respectively used as control variables in the association test.

Figure 3a shows the effect of the gap in the distribution of individual admixture on type I error rate when controlling for admixture and ethnicity when the effect size is equal to 0.5. One can observe on figure 3a that there is a slight type I error inflation even when true ethnicity is used instead of the true ancestry proportion. This inflation decreases as the gap in the admixture distribution increases. The admixture distribution in this case is univariate as would be observed for an admixed population derived from intermating between exactly 2 ancestral populations. Figure 3b shows higher type I error inflation rate when the effect size is equal to 1.