DIGITAL SUPPLEMENT A[†]

Power vs. sample size curves for hotspot/coldspot tests of non-zero mean counts.

Figures A1-A6. Power vs. sample size curves for hotspot/coldspot tests of non-zero mean counts (i.e., case 1 described in section 1.2). Curves are presented for the six distributions in Table 1 for which a finite mean exists for realistic parameter values (Poisson, Negative Binomial, Geometric, Logarithmic, Discretized Lognormal, and Zeta with exponential cutoff). For each distribution, six panels show curves for different values of the reference mean, and within each panel lines of different colors show curves for different effect sizes, represented as multiples of the reference mean (e.g., an effect size of 0.33 for a reference mean of 10 corresponds to power to detect a coldspot with a mean of 3.3 or smaller). Note that the number of curves per panel varies, because some combinations of the reference mean and effect size do not make sense (for example, with a reference mean of 2, a 0.33 effect size would correspond to a mean of 0.66, which is not possible given that non-zero counts must be greater than or equal to 1). For distributions with more than one parameter, the first parameter is adjusted to produce the desired reference mean, and additional ("nuisance") parameters are held constant. Curves shown are examples for the value(s) of the nuisance parameter(s) given in the figure heading. [Pages 2-7]

Conditional (Non-zero) Model – Positive Poisson
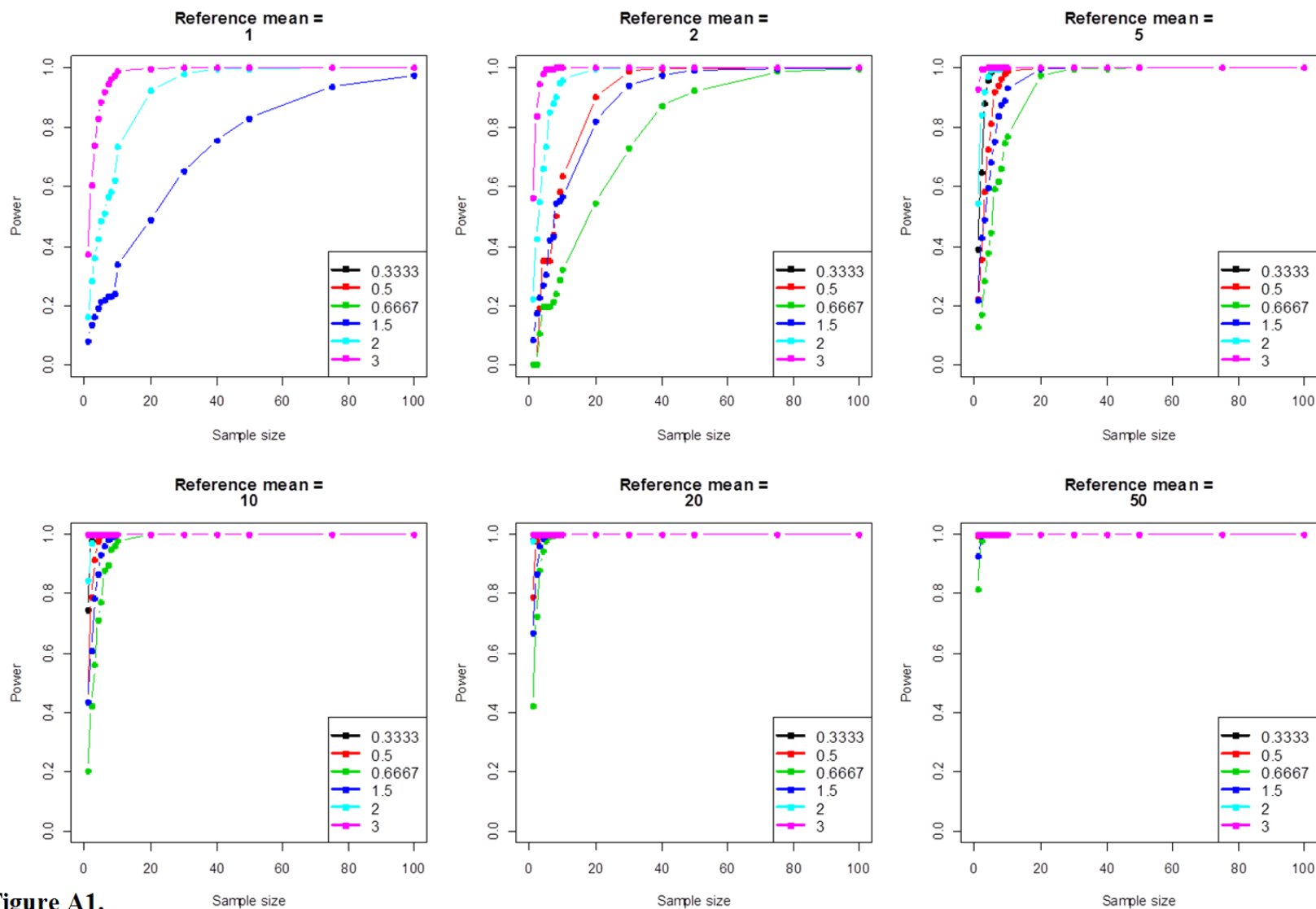# Monte Carlo test – one sided – alpha=0.05

Figure A1.

Conditional (Non-zero) Model – Positive Negative Binomial – r=2
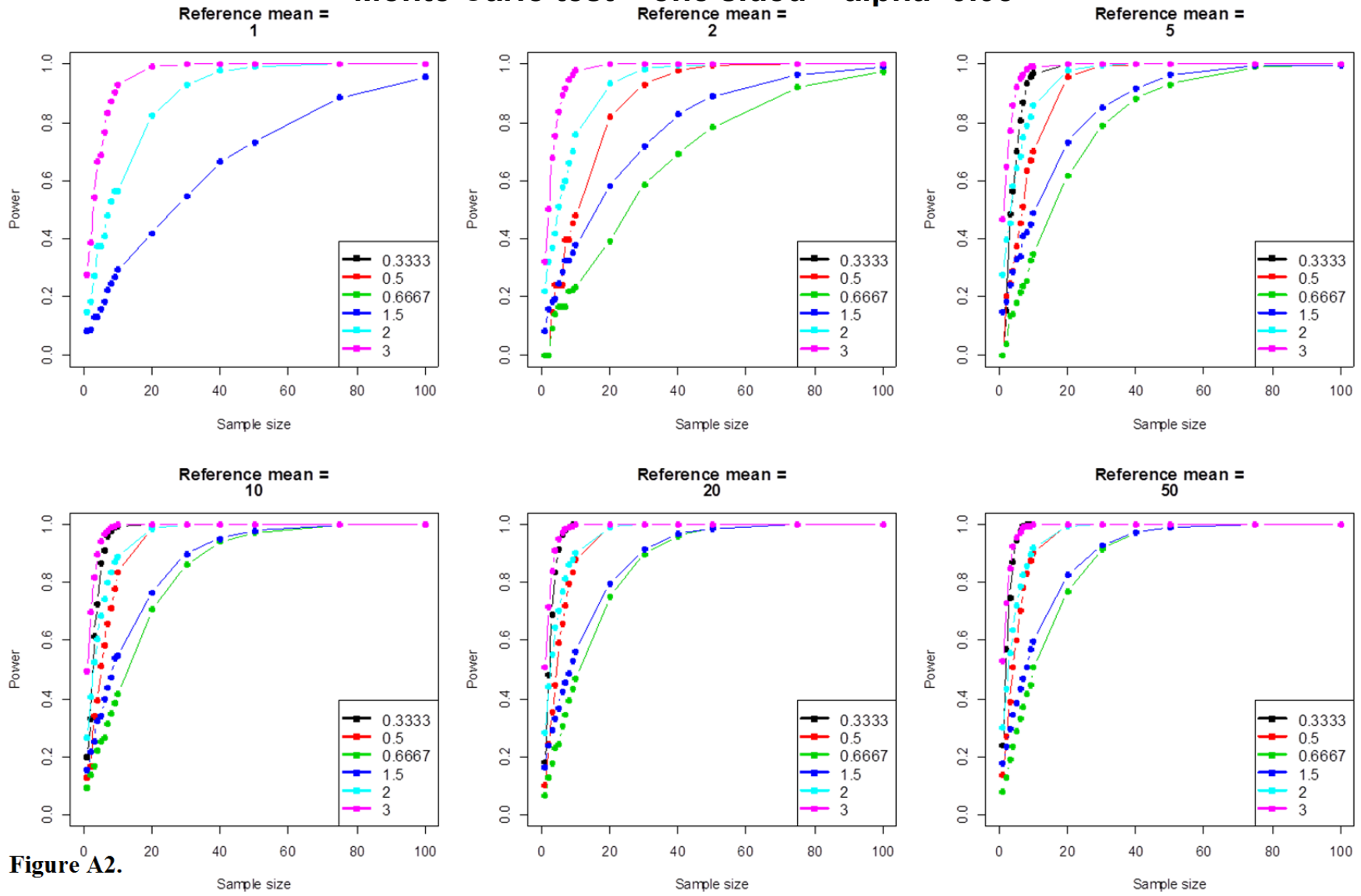## Monte Carlo test – one sided – alpha=0.05

Figure A2.

Conditional (Non-zero) Model – Geometric
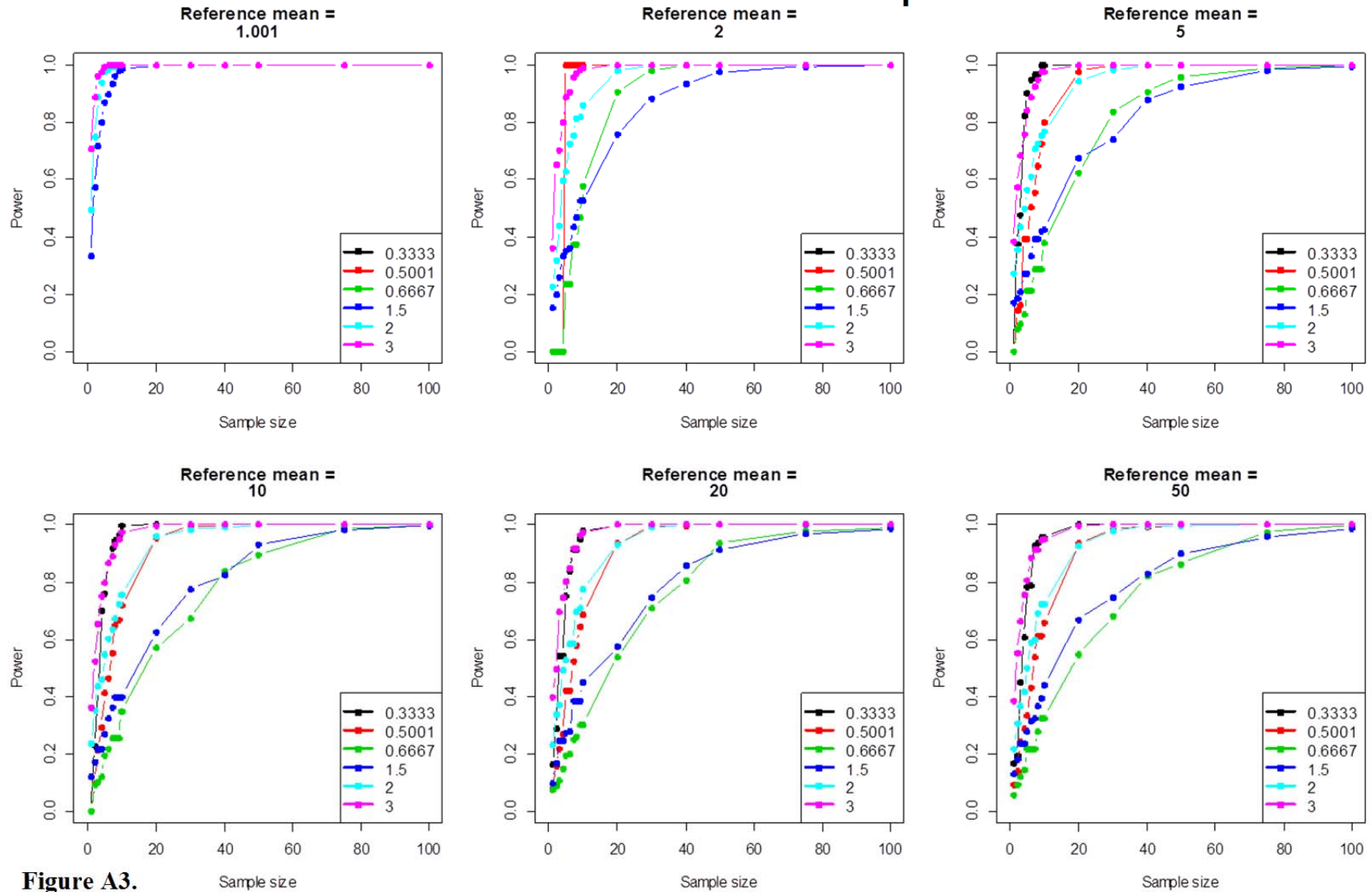# Monte Carlo test – one sided – alpha=0.05

Figure A3.

Conditional (Non-zero) Model – Logarithmic
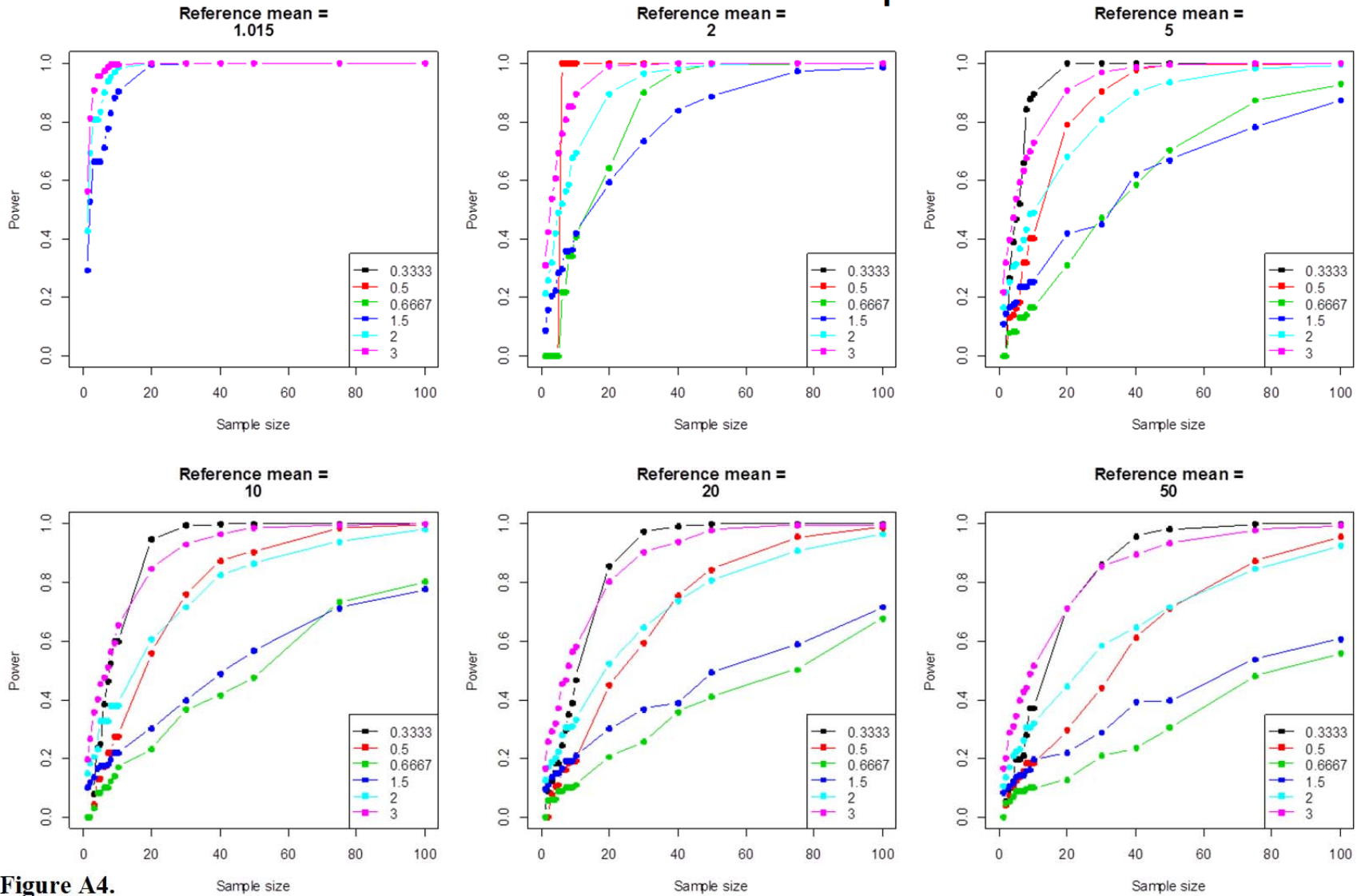# Monte Carlo test – one sided – alpha=0.05

Figure A4.

Conditional (Non-zero) Model – Truncated Discretized Lognormal – σ=1.8
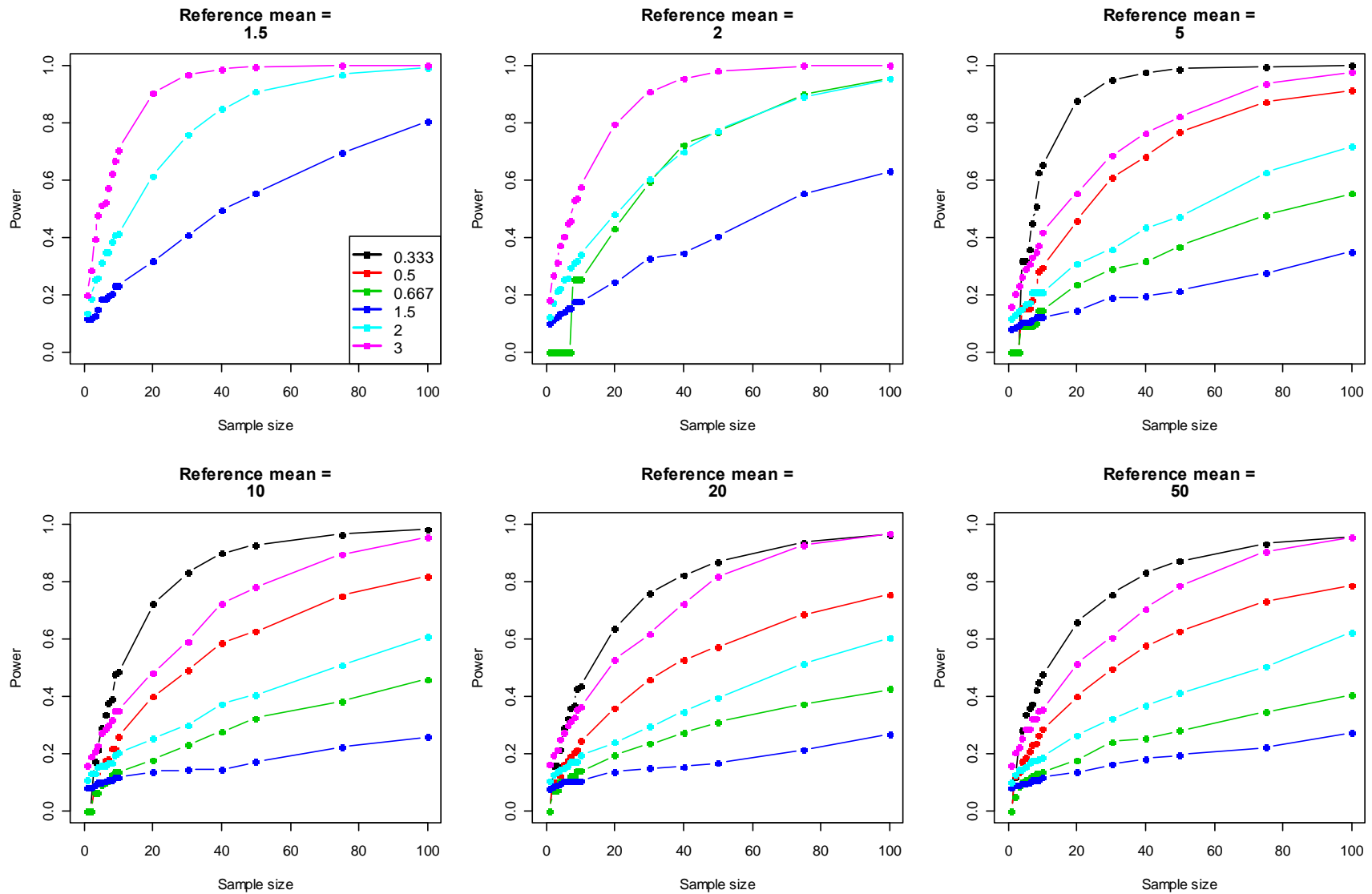## Monte Carlo test – one sided – alpha=0.05

Figure A5.

Conditional (Non-zero) Model – Zeta with exponential cutoff – λ=0.0005
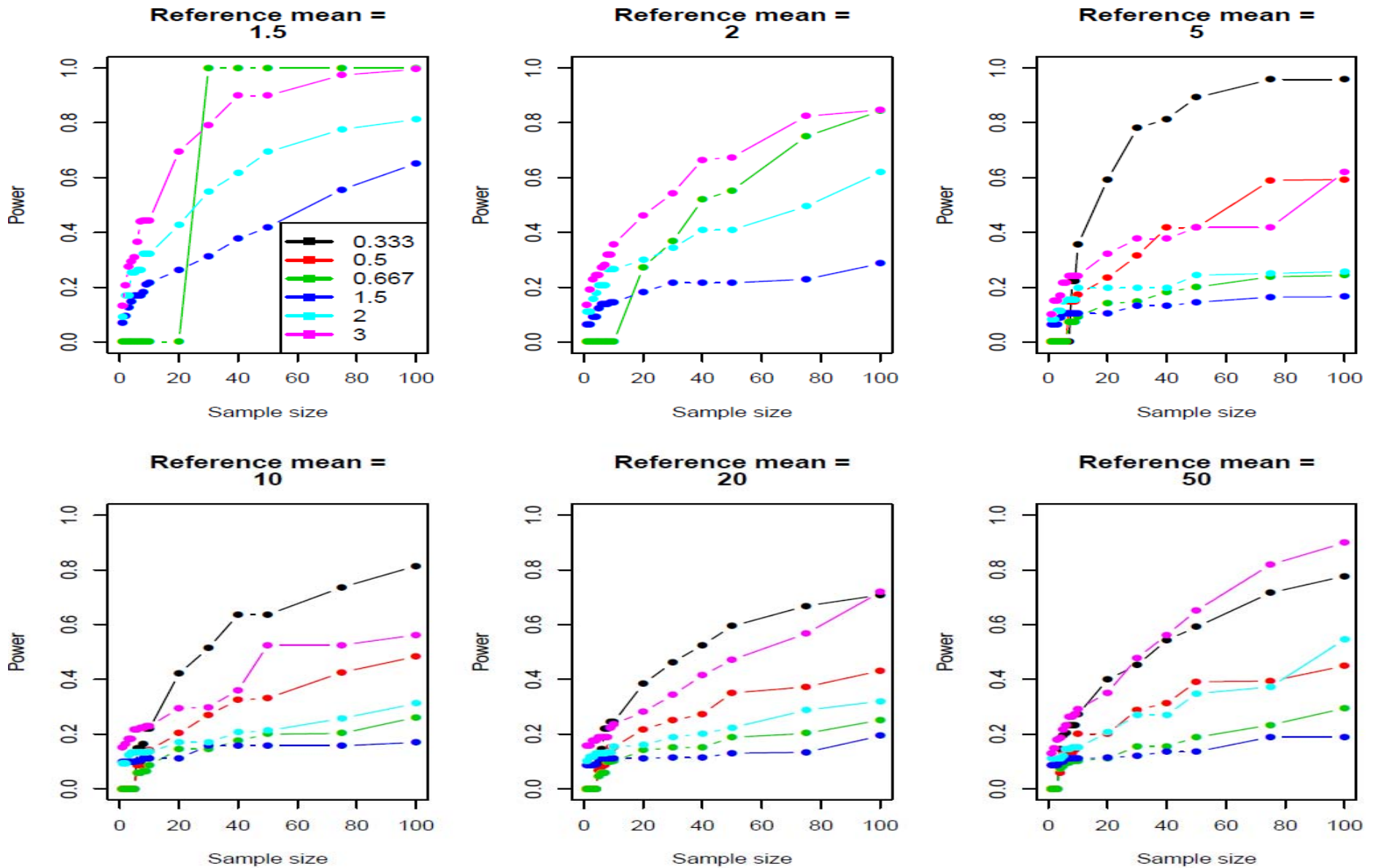## Monte Carlo test – one sided – alpha=0.05

Figure A6.