Prevalent Defects in Preclinical Research

RESEARCH PHASE AND TYPE OF DEFECT	PREVALENCE (% [CI])
Design deficiencies	
Sample/power calculation error	82 [70, 95]
Eligibility criteria not mentioned or inappropriate	50 [32, 68]
Randomization error	29 [8, 50]
Cell line defects	
Mixed contamination of cell lines	20 [9, 31]
Mycoplasma cell line contamination	18 [12, 23]
Cell line cross contamination	17 [12, 23]
Misidentified cell lines	14 [9, 19]
Viral contamination of cell lines	8 [−15, 30]
Cell line bacterial contamination	1 [0, 2]
Statistical analysis deficiencies	
Chi-square used when expected cells frequency<5	14 [−1, 30]
Parametric test for nonparametric data	13 [−3, 22]
Related data independent test & vice versa	12 [0, 24]