

Prevalent Defects in Preclinical Research

RESEARCH PHASE AND TYPE OF DEFECT	PREVALENCE (% [CI])	
Design deficiencies		Mansour, N. M.,
Sample/power calculation error	82 [70, 95]	Balas, E. A., Yang,
Eligibility criteria not mentioned or inappropriate	50 [32, 68]	F. M., & Vernon,
Randomization error	29 [8, 50]	M. M. (2020).
		Prevalence and
Cell line defects		prevention of
Mixed contamination of cell lines	20 [9, 31]	reproducibility
Mycoplasma cell line contamination	18 [12, 23]	deficiencies in life
Cell line cross contamination	17 [12, 23]	sciences research:
Misidentified cell lines	14 [9, 19]	Large-scale meta-
Viral contamination of cell lines	8 [-15, 30]	analyses. Medical
Cell line bacterial contamination	1 [0, 2]	Science Monitor:
		International
Statistical analysis deficiencies		Medical Journal of
Chi-square used when expected cells frequency < 5	14 [-1, 30]	Experimental and
Parametric test for nonparametric data	13 [-3, 22]	Clinical Research,
Related data independent test & vice versa	12 [0, 24]	26, e922016-1.