Supplement 1. Comparison of evaluation metrics for different batching methods.

Method	Bio conservation					Batch correction					Aggregate score		
	Isolated labels	KMeans NMI	Kmeans ARI	Silhouette lable	CLISI	Silhouette batch	ILISI	KBET	Graph connectivity	PCR comparision	Batch correction	Bio conservation	Total
X_combat	0.58	0.30	0.14	0.44	0.93	0.81	0.23	0.03	0.48	0.99	0.51	0.48	0.49
X_scVI	0.57	0.24	0.08	0.49	0.86	0.90	0.40	0.10	0.52	0.73	0.53	0.45	0.48
X_harmony	0.57	0.29	0.14	0.44	0.91	0.83	0.29	0.10	0.36	0.87	0.49	0.47	0.48
X_pca	0.56	0.26	0.10	0.46	0.88	0.85	0.333	0.17	0.43	0	0.36	0.45	0.41