

Appendix

Reference to Table 6

Table 6: BERT Base Test SL

Beginning of Table 6				
label	precision	recall	f1-score	support
O	0.791	0.986	0.878	1,476
R-7-50	0.369	0.152	0.176	107
R-1-50	0.223	0.527	0.304	83
R-3-50	0.041	0.017	0.023	83
R-1-3	0.143	0.002	0.005	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.022	0.015	0.0179	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3

Continuation of Table 6				
label	precision	recall	f1-score	support
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0

R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0

Continuation of Table 6

label	precision	recall	f1-score	support
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.017	0.018	0.0146	2,270
micro avg	0.729	0.669	0.698	2,270
samples avg	0.729	0.722	0.724	2,270
weighted avg	0.545	0.669	0.591	2,270
adj F1 macro	0.03	0.032	0.027	0
nonO F1 macro	0.015	0.014	0.010	0
nonO F1 micro	0.261	0.077	0.113	0

End of Table 6

Reference to Table 7

Table 7: BERT Base Test ML

Beginning of Table 7				
label	precision	recall	f1-score	support
O	0.935	0.894	0.914	1,476
R-7-50	0.0	0.0	0.0	107
R-1-50	0.0	0.0	0.0	83
R-3-50	0.0	0.0	0.0	83
R-1-3	0.0	0.0	0.0	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22

Continuation of Table 7				
label	precision	recall	f1-score	support
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2

R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0

Continuation of Table 7

label	precision	recall	f1-score	support
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0

R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.01	0.009	0.01	2,270
micro avg	0.935	0.581	0.717	2,270
samples avg	0.634	0.634	0.634	2,270
weighted avg	0.608	0.581	0.594	2,270
adj F1 macro	0.018	0.017	0.017	0
nonO F1 macro	0.0	0.0	0.0	0
nonO F1 micro	0.0	0.0	0.0	0

End of Table 7

Reference to Table 8 Table 8: Pre Trined Test SL

Beginning of Table 8

label	precision	recall	f1-score	support
O	0.719	0.999	0.836	1,476
R-7-50	0.054	0.033	0.04	107
R-1-50	0.0	0.0	0.0	83
R-3-50	0.067	0.038	0.048	83
R-1-3	0.0	0.0	0.0	58

R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1

Continuation of Table 8				
label	precision	recall	f1-score	support
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0

R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0

Continuation of Table 8

label	precision	recall	f1-score	support
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.011	0.011	0.01	2,270
micro avg	0.713	0.654	0.682	2,270
samples avg	0.713	0.711	0.712	2,270
weighted avg	0.479	0.654	0.548	2,270
adj F1 macro	0.019	0.021	0.018	0
nonO F1 macro	0.006	0.002	0.002	0
nonO F1 micro	0.099	0.011	0.02	0

End of Table 8

Reference to Table 9

Table 9: Pre Trined Test ML

Beginning of Table 9				
label	precision	recall	f1-score	support
O	0.822	0.920	0.864	1,476
R-7-50	0.0	0.0	0.0	107
R-1-50	0.0	0.0	0.0	83
R-3-50	0.0	0.0	0.0	83
R-1-3	0.0	0.0	0.0	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24

R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7

Continuation of Table 9

label	precision	recall	f1-score	support
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1

R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0

Continuation of Table 9

label	precision	recall	f1-score	support
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0

R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.009	0.01	0.009	2,270
micro avg	0.822	0.599	0.689	2,270
samples avg	0.654	0.654	0.654	2,270
weighted avg	0.534	0.599	0.562	2,270
adj F1 macro	0.016	0.017	0.016	0
nonO F1 macro	0.0	0.0	0.0	0
nonO F1 micro	0.0	0.0	0.0	0

End of Table 9

Reference to Table 10

Table 10: BioBERT Test SL

Beginning of Table 10

label	precision	recall	f1-score	support
O	0.733	0.996	0.844	1,476
R-7-50	0.018	0.023	0.02	107
R-1-50	0.071	0.002	0.003	83
R-3-50	0.055	0.119	0.075	83
R-1-3	0.0	0.0	0.0	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24

Continuation of Table 10

label	precision	recall	f1-score	support
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24

R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1

R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0

Continuation of Table 10

label	precision	recall	f1-score	support
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0

R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.009	0.012	0.01	2,270
micro avg	0.713	0.653	0.682	2,270
samples avg	0.713	0.710	0.711	2,270
weighted avg	0.482	0.653	0.552	2,270
adj F1 macro	0.017	0.021	0.018	0
nonO F1 macro	0.003	0.003	0.002	0
nonO F1 micro	0.074	0.015	0.025	0

Continuation of Table 10

label	precision	recall	f1-score	support
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End of Table 10

Reference to Table 11

Table 11: BioBERT Test ML

Beginning of Table 11

label	precision	recall	f1-score	support
O	0.828	0.9229	0.865	1,476
R-7-50	0.0	0.0	0.0	107
R-1-50	0.0	0.0	0.0	83
R-3-50	0.0	0.0	0.0	83
R-1-3	0.0	0.0	0.0	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19

R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1

Continuation of Table 11

label	precision	recall	f1-score	support
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0

R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0

Continuation of Table 11

label	precision	recall	f1-score	support
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0

R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.009	0.01	0.009	2,270
micro avg	0.828	0.6	0.689	2,270
samples avg	0.655	0.655	0.655	2,270
weighted avg	0.539	0.6	0.562	2,270
adj F1 macro	0.016	0.017	0.016	0
nonO F1 macro	0.0	0.0	0.0	0
nonO F1 micro	0.0	0.0	0.0	0

End of Table 11

Reference to Table 12

Table 12: SciBERT Base Test SL

Beginning of Table 12

label	precision	recall	f1-score	support
O	0.790	0.985	0.875	1,476
R-7-50	0.367	0.243	0.212	107
R-1-50	0.299	0.499	0.35	83
R-3-50	0.106	0.067	0.076	83
R-1-3	0.143	0.002	0.005	58
R-3-4	0.143	0.0139	0.025	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12

Continuation of Table 12				
label	precision	recall	f1-score	support
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0

R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0

Continuation of Table 12

label	precision	recall	f1-score	support
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.019	0.019	0.016	2,270
micro avg	0.734	0.672	0.702	2,270

samples avg	0.734	0.726	0.729	2,270
weighted avg	0.552	0.672	0.596	2,270
adj F1 macro	0.035	0.034	0.0289	0
nonO F1 macro	0.02	0.016	0.0130	0
nonO F1 micro	0.262	0.089	0.13	0

End of Table 12

Reference to Table 13

Table 13: SciBERT Base Test ML

Beginning of Table 13

label	precision	recall	f1-score	support
O	0.903	0.915	0.905	1,476
R-7-50	0.0	0.0	0.0	107
R-1-50	0.0	0.0	0.0	83
R-3-50	0.0	0.0	0.0	83
R-1-3	0.0	0.0	0.0	58

Continuation of Table 13

label	precision	recall	f1-score	support
R-3-4	0.0	0.0	0.0	41
R-6-7	0.0	0.0	0.0	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8

R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1

Continuation of Table 13

label	precision	recall	f1-score	support
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0

R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.009	0.01	0.009	2,270
micro avg	0.903	0.595	0.714	2,270
samples avg	0.649	0.649	0.649	2,270

Continuation of Table 13				
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label	precision	recall	f1-score	support
weighted avg	0.587	0.595	0.589	2,270

adj F1 macro	0.017	0.017	0.017	0
nonO F1 macro	0.0	0.0	0.0	0
nonO F1 micro	0.0	0.0	0.0	0

End of Table 13

Reference to Table 14

Table 14: SciBERT Custom Test SL

Beginning of Table 14				
label	precision	recall	f1-score	support
O	0.858	0.968	0.91	1,476
R-7-50	0.551	0.69	0.61	107
R-1-50	0.649	0.752	0.693	83
R-3-50	0.508	0.306	0.372	83
R-1-3	0.444	0.293	0.348	58
R-3-4	0.704	0.624	0.643	41
R-6-7	0.333	0.338	0.336	32
R-11-12	0.561	0.457	0.473	24
R-1-2	0.114	0.048	0.067	24
R-13-14	0.585	0.321	0.36	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.521	0.268	0.35	24
R-12-13	0.327	0.175	0.211	22
R-4-5	0.143	0.026	0.044	22
R-4-14	0.375	0.136	0.188	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.387	0.218	0.271	19
R-14-50	0.0	0.0	0.0	19
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3

R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2

Continuation of Table 14

label	precision	recall	f1-score	support
R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0

R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0
R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0

Continuation of Table 14

label	precision	recall	f1-score	support
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.074	0.059	0.061	2,270
micro avg	0.807	0.741	0.773	2,270
samples avg	0.807	0.785	0.792	2,270
weighted avg	0.685	0.741	0.704	2,270
adj F1 macro	0.133	0.106	0.111	0
nonO F1 macro	0.119	0.09	0.096	0
nonO F1 micro	0.598	0.3	0.397	0

End of Table 14

Reference to Table 15

Table 15: SciBERT Custom Test ML

Beginning of Table 15				
label	precision	recall	f1-score	support
O	0.935	0.907	0.920	1476
R-7-50	0.473	0.354	0.402	107
R-1-50	0.642	0.368	0.452	83
R-3-50	0.231	0.022	0.04	83
R-1-3	0.0	0.0	0.0	58
R-3-4	0.0	0.0	0.0	41
R-6-7	0.286	0.08	0.123	32
R-11-12	0.0	0.0	0.0	24
R-1-2	0.0	0.0	0.0	24
R-13-14	0.0	0.0	0.0	24
R-13-50	0.0	0.0	0.0	24
R-3-5	0.0	0.0	0.0	24
R-12-13	0.0	0.0	0.0	22
R-4-5	0.0	0.0	0.0	22
R-4-14	0.0	0.0	0.0	20
R-4-50	0.0	0.0	0.0	20
R-11-13	0.0	0.0	0.0	19
R-14-50	0.0	0.0	0.0	19

Continuation of Table 15				
label	precision	recall	f1-score	support
R-11-50	0.0	0.0	0.0	18
R-5-50	0.0	0.0	0.0	14
R-6-50	0.0	0.0	0.0	13
R-6-14	0.0	0.0	0.0	12
R-5-5B	0.0	0.0	0.0	11
R-5B-50	0.0	0.0	0.0	9
R-2-3	0.0	0.0	0.0	8
R-11-14	0.0	0.0	0.0	7
R-3-7	0.0	0.0	0.0	7
R-4-5B	0.0	0.0	0.0	7
R-3-1	0.0	0.0	0.0	4
R-1-5	0.0	0.0	0.0	3
R-1-7	0.0	0.0	0.0	3
R-3-6	0.0	0.0	0.0	3
R-5-7	0.0	0.0	0.0	3
R-7-14	0.0	0.0	0.0	3
R-1-14	0.0	0.0	0.0	2

R-12-50	0.0	0.0	0.0	2
R-7-5B	0.0	0.0	0.0	2
R-7-6	0.0	0.0	0.0	2
R-11-3	0.0	0.0	0.0	1
R-11-6	0.0	0.0	0.0	1
R-12-14	0.0	0.0	0.0	1
R-12-7	0.0	0.0	0.0	1
R-13-11	0.0	0.0	0.0	1
R-14-7	0.0	0.0	0.0	1
R-2-50	0.0	0.0	0.0	1
R-3-14	0.0	0.0	0.0	1
R-4-7	0.0	0.0	0.0	1
R-50-50	0.0	0.0	0.0	1
R-50-7	0.0	0.0	0.0	1
R-5-3	0.0	0.0	0.0	1
R-5B-7	0.0	0.0	0.0	1
R-6-5	0.0	0.0	0.0	1
R-7-4	0.0	0.0	0.0	1
R-11-1	0.0	0.0	0.0	0
R-1-11	0.0	0.0	0.0	0
R-11-11	0.0	0.0	0.0	0
R-1-13	0.0	0.0	0.0	0
R-11-4	0.0	0.0	0.0	0
R-11-OTHER	0.0	0.0	0.0	0
R-12-11	0.0	0.0	0.0	0
R-12-5B	0.0	0.0	0.0	0
R-13-12	0.0	0.0	0.0	0
R-13-4	0.0	0.0	0.0	0
R-13-5	0.0	0.0	0.0	0
R-13-6	0.0	0.0	0.0	0

Continuation of Table 15

label	precision	recall	f1-score	support
R-13-7	0.0	0.0	0.0	0
R-1-4	0.0	0.0	0.0	0
R-14-11	0.0	0.0	0.0	0
R-14-6	0.0	0.0	0.0	0
R-1-6	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-4	0.0	0.0	0.0	0
R-2-6	0.0	0.0	0.0	0

R-2-7	0.0	0.0	0.0	0
R-3-13	0.0	0.0	0.0	0
R-3-2	0.0	0.0	0.0	0
R-3-5B	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-4-13	0.0	0.0	0.0	0
R-4-3	0.0	0.0	0.0	0
R-4-6	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-3	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-13	0.0	0.0	0.0	0
R-5-14	0.0	0.0	0.0	0
R-5-4	0.0	0.0	0.0	0
R-5-6	0.0	0.0	0.0	0
R-5B-14	0.0	0.0	0.0	0
R-5B-5	0.0	0.0	0.0	0
R-6-5B	0.0	0.0	0.0	0
R-7-1	0.0	0.0	0.0	0
R-7-13	0.0	0.0	0.0	0
R-7-5	0.0	0.0	0.0	0
R-OTHER-13	0.0	0.0	0.0	0
R-OTHER-6	0.0	0.0	0.0	0
macro avg	0.027	0.018	0.02	2,270
micro avg	0.932	0.622	0.745	2,270
samples avg	0.677	0.672	0.675	2,270
weighted avg	0.667	0.622	0.638	2,270
adj F1 macro	0.048	0.033	0.037	0
nonO F1 macro	0.031	0.016	0.02	0
nonO F1 micro	0.622	0.078	0.136	0

End of Table 15

Reference to Table 16 Table 16: Summary of Skin Cancer by Labels

Beginning of Table 16

label	precision	recall	f1-score	support
O	0.910	0.93	0.92	1,207
R-5-50	0.795	0.782	0.789	207
R-2-50	0.752	0.517	0.611	170
R-1-2	0.782	0.782	0.780	133
R-5-6	0.712	0.758	0.723	115

R-1-50	0.694	0.561	0.619	112
R-3-50	0.770	0.526	0.624	98
R-6-50	0.585	0.26	0.325	94
R-12-3	0.853	0.861	0.852	66
R-2-3	0.828	0.442	0.572	58
R-3-4	0.702	0.804	0.747	56
R-4-5	0.731	0.764	0.743	55
R-11-12	0.427	0.107	0.15	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0

Continuation of Table 16

label	precision	recall	f1-score	support
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.177	0.15	0.157	2,619
micro avg	0.844	0.717	0.775	2,619
samples avg	0.844	0.78	0.8	2,619
weighted avg	0.760	0.717	0.728	2,619
adj F1 macro	0.258	0.218	0.228	0
nonO F1 macro	0.24	0.198	0.209	0
nonO F1 micro	0.76	0.505	0.607	0

End of Table 16

Reference to Table 17

Table 17: Skin Cancer - BERT Base Test ML

Beginning of Table 17

label	precision	recall	f1-score	support
O	0.94	0.893	0.915	1,207
R-5-50	0.872	0.782	0.825	207
R-2-50	0.827	0.534	0.640	170
R-1-2	0.855	0.807	0.829	133
R-5-6	0.778	0.800	0.789	115
R-1-50	0.779	0.529	0.625	112
R-3-50	0.844	0.509	0.621	98
R-6-50	0.941	0.78	0.852	94
R-12-3	0.902	0.708	0.790	66
R-2-3	0.79	0.148	0.24	58
R-3-4	0.963	0.387	0.495	56
R-4-5	0.473	0.345	0.392	55
R-11-12	0.939	0.632	0.736	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19

R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8

Continuation of Table 17

label	precision	recall	f1-score	support
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0

macro avg	0.201	0.145	0.162	2619
micro avg	0.900	0.703	0.789	2619
samples avg	0.765	0.74	0.747	2619
weighted avg	0.822	0.703	0.745	2619
zz adj F1 macro	0.295	0.212	0.237	0
zz nonO F1 macro	0.276	0.193	0.218	0
zz nonO F1 micro	0.851	0.495	0.625	0

End of Table 17

Reference to Table 18 Table 18: Skin Cancer - PreTrained Test SL

Beginning of Table 18

label	precision	recall	f1-score	support
O	0.871	0.943	0.905	1,207
R-5-50	0.75	0.758	0.747	207
R-2-50	0.75	0.461	0.568	170
R-1-2	0.696	0.723	0.705	133
R-5-6	0.624	0.516	0.55	115
R-1-50	0.604	0.411	0.484	112
R-3-50	0.711	0.515	0.592	98
R-6-50	0.764	0.433	0.528	94
R-12-3	0.759	0.61	0.672	66
R-2-3	0.564	0.31	0.398	58
R-3-4	0.639	0.638	0.628	56
R-4-5	0.7	0.608	0.596	55
R-11-12	0.499	0.17	0.242	52
R-2-5	0.155	0.0180	0.032	31
R-4-50	0.405	0.077	0.126	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.143	0.008	0.015	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2

R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
Continuation of Table 18				
label	precision	recall	f1-score	support
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.178	0.133	0.144	2,619
micro avg	0.810	0.689	0.745	2,619
samples avg	0.810	0.754	0.772	2,619
weighted avg	0.729	0.689	0.693	2,619
adj F1 macro	0.26	0.195	0.211	0
nonO F1 macro	0.243	0.174	0.191	0
nonO F1 micro	0.721	0.45	0.552	0
End of Table 18				

Reference to Table 19

Table 19: Skin Cancer - PreTrained Test ML

Beginning of Table 19

label	precision	recall	f1-score	support
O	0.924	0.897	0.91	1,207
R-5-50	0.805	0.655	0.718	207
R-2-50	0.611	0.358	0.442	170
R-1-2	0.750	0.568	0.629	133
R-5-6	0.813	0.652	0.68	115
R-1-50	0.54	0.335	0.403	112
R-3-50	0.734	0.385	0.462	98
R-6-50	0.795	0.655	0.718	94
R-12-3	0.758	0.481	0.544	66
R-2-3	0.457	0.223	0.299	58
R-3-4	0.639	0.406	0.449	56
R-4-5	0.626	0.486	0.535	55
R-11-12	0.807	0.489	0.542	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8

Continuation of Table 19

label	precision	recall	f1-score	support
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1

R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.172	0.122	0.136	2,619
micro avg	0.897	0.644	0.743	2,619
samples avg	0.713	0.69	0.697	2,619
weighted avg	0.754	0.644	0.679	2,619
adj F1 macro	0.25	0.178	0.198	0
nonO F1 macro	0.231	0.158	0.178	0
nonO F1 micro	0.787	0.392	0.504	0

End of Table 19

Reference to Table 20 Table 20: Skin Cancer - BioBERT Test SL

Beginning of Table 20

label	precision	recall	f1-score	support
O	0.817	0.952	0.872	1,207
R-5-50	0.584	0.637	0.604	207
R-2-50	0.494	0.366	0.416	170
R-1-2	0.522	0.56	0.537	133
R-5-6	0.5	0.645	0.555	115
R-1-50	0.437	0.176	0.226	112
R-3-50	0.402	0.372	0.381	98
R-6-50	0.4	0.195	0.233	94
R-12-3	0.451	0.424	0.434	66

R-2-3	0.262	0.081	0.118	58
R-3-4	0.397	0.367	0.369	56
R-4-5	0.403	0.395	0.397	55
R-11-12	0.143	0.003	0.005	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0

Continuation of Table 20

label	precision	recall	f1-score	support
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0

R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.108	0.096	0.095	2,619
micro avg	0.738	0.627	0.677	2,619
samples avg	0.738	0.694	0.707	2,619
weighted avg	0.588	0.627	0.591	2,619
adj F1 macro	0.157	0.14	0.139	0
nonO F1 macro	0.139	0.116	0.119	0
nonO F1 micro	0.539	0.332	0.411	0

End of Table 20

Reference to Table 21

Table 21: Skin Cancer - BioBERT Test ML

Beginning of Table 21

label	precision	recall	f1-score	support
O	0.874	0.900	0.877	1,207
R-5-50	0.498	0.393	0.437	207
R-2-50	0.252	0.099	0.129	170
R-1-2	0.265	0.111	0.121	133
R-5-6	0.433	0.358	0.39	115
R-1-50	0.115	0.069	0.086	112
R-3-50	0.195	0.067	0.089	98
R-6-50	0.684	0.393	0.466	94
R-12-3	0.127	0.119	0.123	66
R-2-3	0.071	0.002	0.005	58
R-3-4	0.136	0.054	0.077	56
R-4-5	0.134	0.078	0.099	55
R-11-12	0.138	0.077	0.099	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14

R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
Continuation of Table 21				
label	precision	recall	f1-score	support
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.073	0.05	0.055	2,619
micro avg	0.861	0.501	0.626	2,619
samples avg	0.572	0.564	0.566	2,619
weighted avg	0.541	0.501	0.503	2,619

adj F1 macro	0.106	0.074	0.081	0
nonO F1 macro	0.085	0.051	0.059	0
nonO F1 micro	0.632	0.145	0.214	0

End of Table 21

Reference to Table 22 Table 22: Skin Cancer - SciBERT Base Test SL

Beginning of Table 22

label	precision	recall	f1-score	support
O	0.907	0.935	0.922	1,207
R-5-50	0.745	0.79	0.758	207
R-2-50	0.71	0.564	0.621	170
R-1-2	0.697	0.632	0.662	133
R-5-6	0.672	0.774	0.702	115
R-1-50	0.696	0.51	0.57	112
R-3-50	0.657	0.457	0.537	98
R-6-50	0.815	0.243	0.311	94
R-12-3	0.75	0.792	0.77	66
R-2-3	0.677	0.332	0.442	58
R-3-4	0.62	0.670	0.643	56
R-4-5	0.563	0.662	0.608	55
R-11-12	0.396	0.044	0.078	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1

R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
Continuation of Table 22				
label	precision	recall	f1-score	support
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.165	0.136	0.141	2,619
micro avg	0.824	0.700	0.757	2,619
samples avg	0.824	0.765	0.782	2,619
weighted avg	0.739	0.700	0.702	2,619
adj F1 macro	0.241	0.200	0.206	0
nonO F1 macro	0.222	0.180	0.186	0
nonO F1 micro	0.716	0.473	0.570	0
End of Table 22				

Reference to Table 23

Table 23: Skin Cancer - SciBERT Base Test ML

Beginning of Table 23				
label	precision	recall	f1-score	support
O	0.939	0.899	0.919	1,207
R-5-50	0.750	0.687	0.717	207

R-2-50	0.703	0.511	0.589	170
R-1-2	0.747	0.664	0.702	133
R-5-6	0.795	0.689	0.692	115
R-1-50	0.677	0.5	0.57	112
R-3-50	0.737	0.442	0.542	98
R-6-50	0.951	0.675	0.737	94
R-12-3	0.784	0.640	0.703	66
R-2-3	0.547	0.108	0.172	58
R-3-4	0.675	0.237	0.31	56
R-4-5	0.770	0.483	0.583	55
R-11-12	0.824	0.508	0.591	52
R-2-5	0.0	0.0	0.0	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8

Continuation of Table 23

label	precision	recall	f1-score	support
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0

R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.183	0.13	0.145	2,619
micro avg	0.909	0.672	0.765	2,619
samples avg	0.738	0.714	0.721	2,619
weighted avg	0.78	0.672	0.708	2,619
adj F1 macro	0.268	0.19	0.212	0
nonO F1 macro	0.249	0.171	0.192	0
nonO F1 micro	0.856	0.441	0.551	0

End of Table 23

Reference to Table 24 Table 24: Skin Cancer - SciBERT Custom Test SL

Beginning of Table 24

label	precision	recall	f1-score	support
O	0.912	0.932	0.922	1,207
R-5-50	0.833	0.765	0.797	207
R-2-50	0.775	0.564	0.652	170
R-1-2	0.832	0.750	0.789	133
R-5-6	0.797	0.573	0.665	115
R-1-50	0.755	0.607	0.672	112
R-3-50	0.824	0.519	0.636	98
R-6-50	0.929	0.617	0.737	94
R-12-3	0.929	0.844	0.884	66
R-2-3	0.758	0.547	0.634	58
R-3-4	0.765	0.834	0.797	56
R-4-5	0.691	0.792	0.737	55
R-11-12	0.664	0.239	0.346	52
R-2-5	0.716	0.166	0.263	31

R-4-50	0.65	0.093	0.162	26
R-2-4	0.728	0.173	0.266	19
R-1-3	0.143	0.008	0.015	18
R-5-4	0.095	0.017	0.029	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.685	0.133	0.212	14
R-3-5	0.0	0.0	0.0	12
R-3-6	0.0	0.0	0.0	8
R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0

Continuation of Table 24

label	precision	recall	f1-score	support
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0

R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.25	0.17	0.188	2,619
micro avg	0.865	0.735	0.795	2,619
samples avg	0.865	0.797	0.819	2,619
weighted avg	0.82	0.735	0.763	2,619
adj F1 macro	0.364	0.248	0.276	0
nonO F1 macro	0.349	0.228	0.258	0
nonO F1 micro	0.805	0.536	0.644	0

End of Table 24

Skin Cancer, SciBERT Custom Test, Multi-Label Table 25 Table 25:

Skin Cancer - SciBERT Custom Test ML

Beginning of Table 25

label	precision	recall	f1-score	support
O	0.934	0.9	0.917	1,207
R-5-50	0.883	0.807	0.844	207
R-2-50	0.841	0.68	0.752	170
R-1-2	0.865	0.84	0.852	133
R-5-6	0.864	0.857	0.86	115
R-1-50	0.794	0.670	0.727	112
R-3-50	0.835	0.670	0.743	98
R-6-50	0.953	0.816	0.879	94
R-12-3	0.907	0.915	0.912	66
R-2-3	0.858	0.635	0.729	58
R-3-4	0.910	0.778	0.839	56
R-4-5	0.879	0.779	0.825	55
R-11-12	0.893	0.846	0.869	52
R-2-5	0.071	0.005	0.009	31
R-4-50	0.0	0.0	0.0	26
R-2-4	0.0	0.0	0.0	19
R-1-3	0.0	0.0	0.0	18
R-5-4	0.0	0.0	0.0	17
R-4-6	0.0	0.0	0.0	16
R-11-50	0.0	0.0	0.0	14
R-3-5	0.0	0.0	0.0	12

Continuation of Table 25

label	precision	recall	f1-score	support
R-3-6	0.0	0.0	0.0	8

R-12-50	0.0	0.0	0.0	7
R-1-5	0.0	0.0	0.0	6
R-6-5	0.0	0.0	0.0	4
R-12-2	0.0	0.0	0.0	3
R-11-3	0.0	0.0	0.0	2
R-3-12	0.0	0.0	0.0	2
R-4-RHETORICAL	0.0	0.0	0.0	2
R-5-5	0.0	0.0	0.0	2
R-1-4	0.0	0.0	0.0	1
R-2-6	0.0	0.0	0.0	1
R-3-2	0.0	0.0	0.0	1
R-4-12	0.0	0.0	0.0	1
R-4-4	0.0	0.0	0.0	1
R-50-2	0.0	0.0	0.0	1
R-50-3	0.0	0.0	0.0	1
R-11-4	0.0	0.0	0.0	0
R-11-5	0.0	0.0	0.0	0
R-12-12	0.0	0.0	0.0	0
R-12-4	0.0	0.0	0.0	0
R-12-5	0.0	0.0	0.0	0
R-2-1	0.0	0.0	0.0	0
R-2-11	0.0	0.0	0.0	0
R-2-2	0.0	0.0	0.0	0
R-3-11	0.0	0.0	0.0	0
R-4-11	0.0	0.0	0.0	0
R-50-1	0.0	0.0	0.0	0
R-50-4	0.0	0.0	0.0	0
R-50-5	0.0	0.0	0.0	0
R-5-11	0.0	0.0	0.0	0
R-5-12	0.0	0.0	0.0	0
R-6-3	0.0	0.0	0.0	0
R-6-4	0.0	0.0	0.0	0
macro avg	0.213	0.189	0.199	2,619
micro avg	0.903	0.773	0.833	2,619
samples avg	0.829	0.802	0.810	2,619
weighted avg	0.835	0.773	0.800	2,619
adj F1 macro	0.311	0.276	0.291	0
nonO F1 macro	0.293	0.258	0.273	0
nonO F1 micro	0.869	0.613	0.718	0

End of Table 25
