

Supplementary Information

Highlighted in blue are all active, relatively ‘non-toxic’, organoselenium compounds embedded in the paper that have MICs $\leq 16 \mu\text{g mL}^{-1}$ against at least one or more strains. Highlighted in yellow are active organoselenium compounds found within the CO-ADD database with MICs $\leq 16 \mu\text{g mL}^{-1}$ against one or more of the tested strains but flagged as toxic in the cytotoxicity and haemolytic assays (**Figure 1**). Non-highlighted compounds are inactive organoselenium compounds embedded within the CO-ADD database i.e. MICs $>16 \mu\text{g mL}^{-1}$ against all strains (**Figure 2**). Cytotoxicity and haemolysis data is summarized in **Table 1** for all 233 organoselenium compounds embedded within the CO-ADD database.

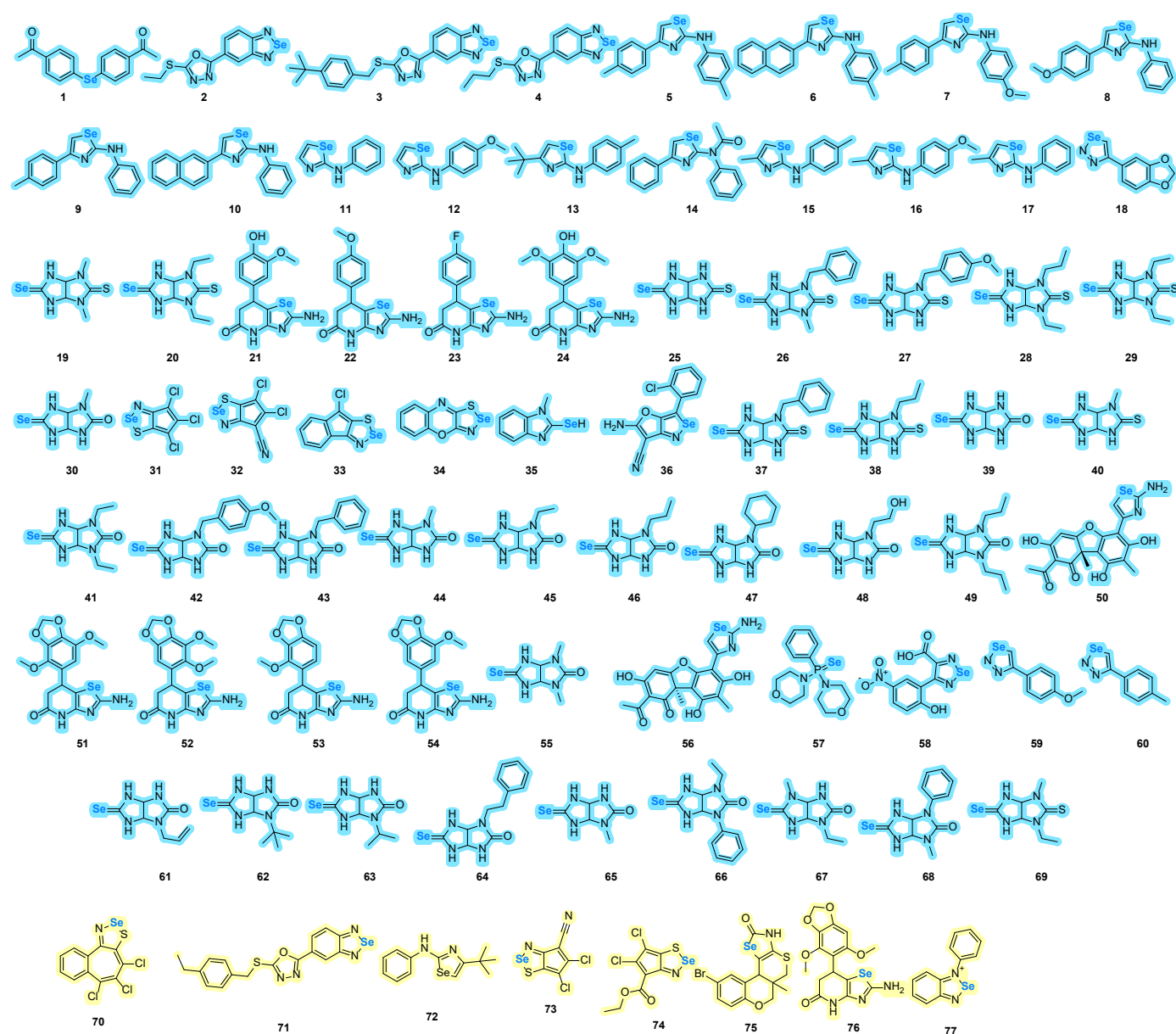


Figure 1 Chemical structure of the 77 organoselenium compounds endowed with antimicrobial activity within the CO-ADD database.

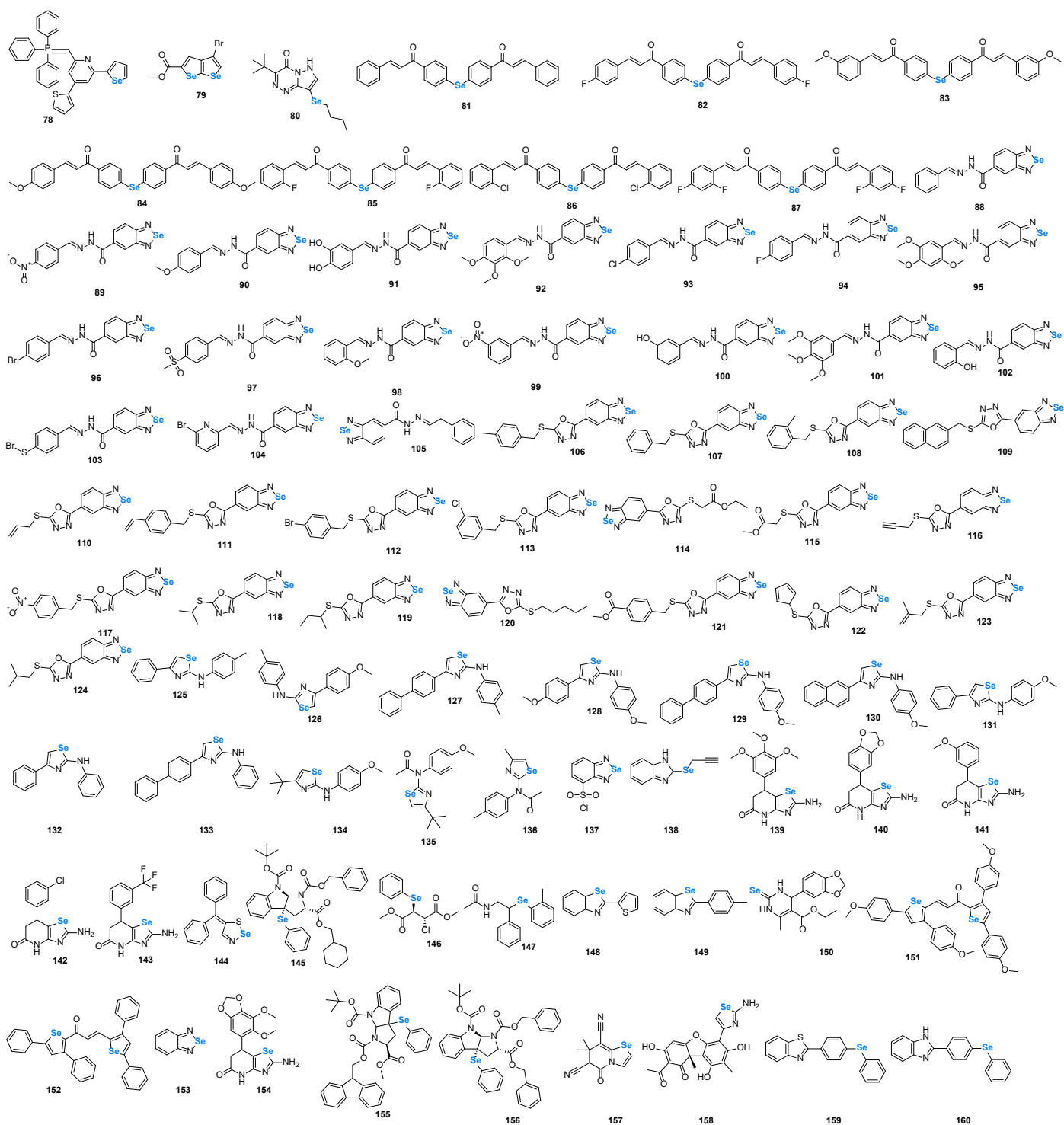


Figure 2 Chemical structures of compound 78 – 160 that lack antimicrobial activity against the standard CO-ADD panel of pathogens

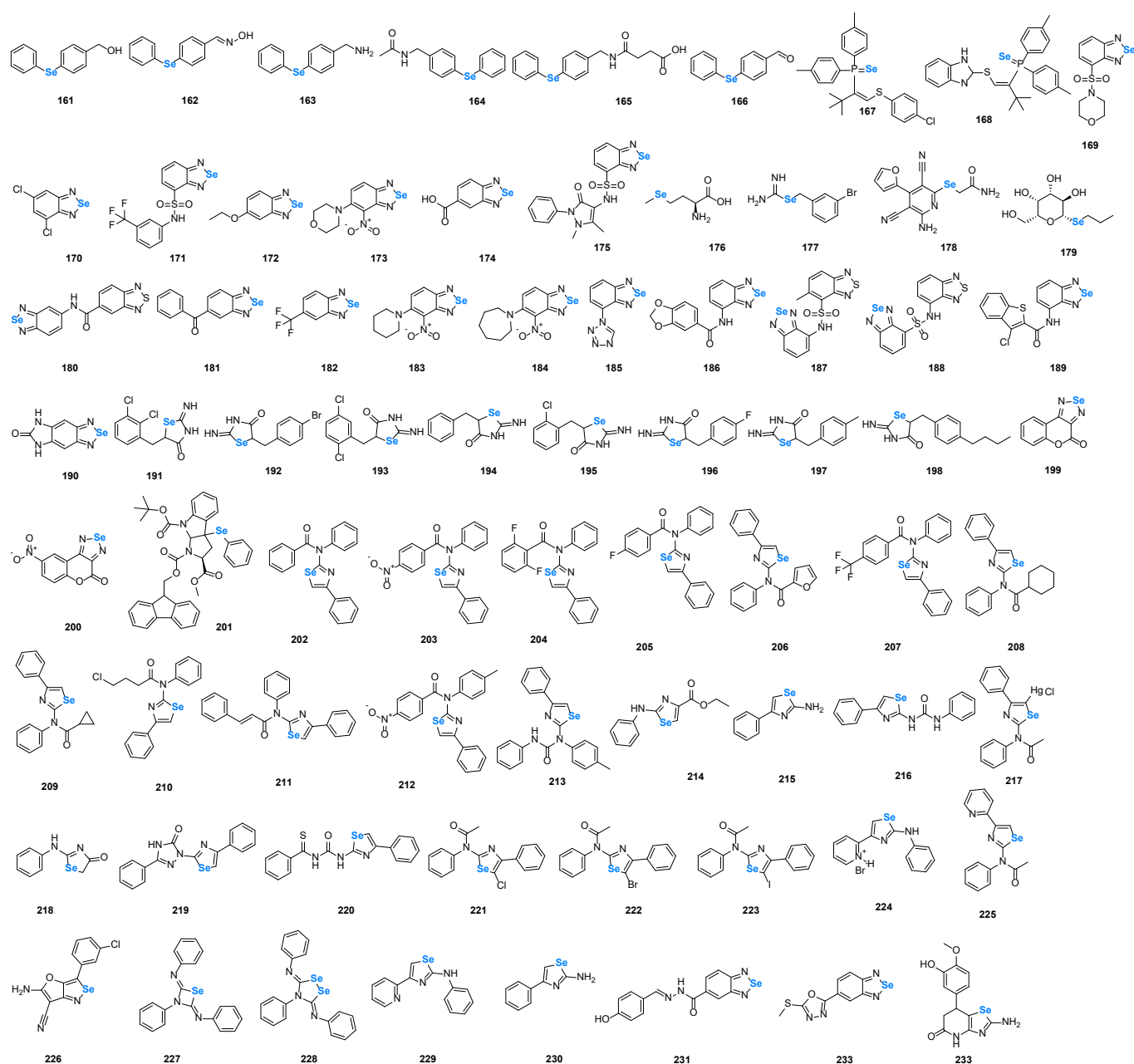


Figure 3 Chemical structures of compound 161-233 that lack antimicrobial activity against the standard CO-ADD panel of pathogens

Table 1 Cytotoxicity and haemolysis values of the 77 organoselenium compounds endowed with antimicrobial activity in the CO-ADD data base.

Compound	Cytotoxicity CC ₅₀	Haemolysis HC ₁₀
1	>32	>32
2	>32	>32
3	>32	>32
4	>32	>32
5	>32	>32
6	>32	>32
7	>32	>32
8	>32	>32
9	>32	>32
10	>32	>32
11	>32	>32
12	>32	>32
13	>32	>32
14	>32	>32
15	>32	>32
16	>32	>32
17	>32	>32
18	>32	>32
19	>32	>32
20	>32	>32
21	>32	>32
22	>32	>32
23	>32	>32
24	>32	>32
25	>32	>32
26	>32	>32
27	>32	>32
28	>32	>32
29	>32	>32
30	>32	>32
31	>32	>32
32	>32	>32
33	>32	>32
34	>32	>32
35	>32	>32
36	>32	>32
37	>32	>32
38	>32	>32
39	>32	>32
40	>32	>32
41	>32	>32
42	>32	>32
43	>32	>32
44	>32	>32
45	>32	>32

46	>32	>32
47	>32	>32
48	>32	>32
49	>32	>32
50	>32	>32
51	>32	>32
52	>32	>32
53	>32	>32
54	>32	>32
55	>32	>32
56	>32	>32
57	>32	>32
58	>32	>32
59	>32	>32
60	>32	>32
61	>32	>32
62	>32	>32
63	>32	>32
64	>32	>32
65	>32	>32
66	>32	>32
67	>32	>32
68	>32	>32
69	>32	>32
70	0.477	>32
71	26.9	>32
72	1.47	>32
73	0.519	>32
74	6.968	>32
75	9.29	>32
76	12.7	>32
77	0.353	>32

Table 2 Antibacterial activity of compound 70-77

Compound	<i>S. aureus</i>	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>A. baumannii</i>	<i>K. pneumoniae</i>
70	8	>32	>32	>32	>32
71	>32	>32	>32	>32	>32
72	16	>32	>32	>32	>32
73	≤0.25	>32	>32	>32	>32
74	≤0.25	>32	>32	>32	>32
75	16	>32	>32	>32	>32
76	32	>32	>32	>32	>32
77	2	8	>32	16	>32

Table 3 Antifungal activity of compound 70-77

Compound	<i>C. albicans</i>	<i>C. neoformans</i>
70	≤0.25	≤0.25
71	4	4
72	≤0.25	>32
73	≤0.25	≤0.25
74	≤0.25	≤0.25
75	8	>32
76	16	16
77	1	1