

Figure S1. Macroscopic morphology of *P. aeruginosa* and *A. baumannii* colonies in co-culture ratio 1:1000. A) Particular colony of *P. aeruginosa* with circular, punctate, small and whitish morphology. B) Particular colony of *A. baumannii* with circular, creamy, large and whitish morphology. C) Growing patterns in different ratios of *A. baumannii* and *P. aeruginosa*.

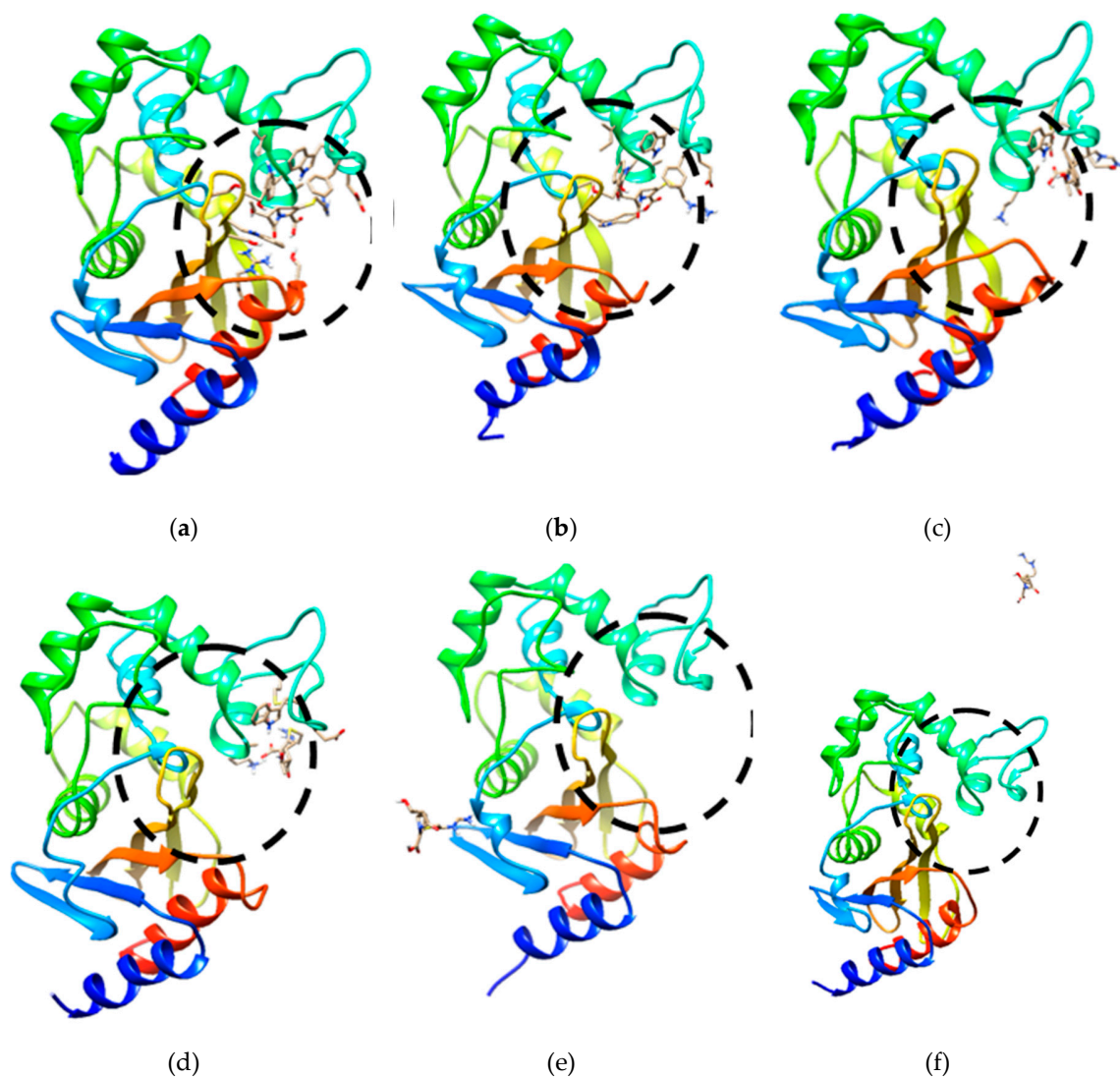


Figure S2. Dynamic interaction of Imipenem and OXA-51 (4ZDX) enzyme over time (in nanoseconds). a) 0 ns, b) 3 ns, c) 10 ns, d) 20 ns, e) 40 ns, f) 50 ns.

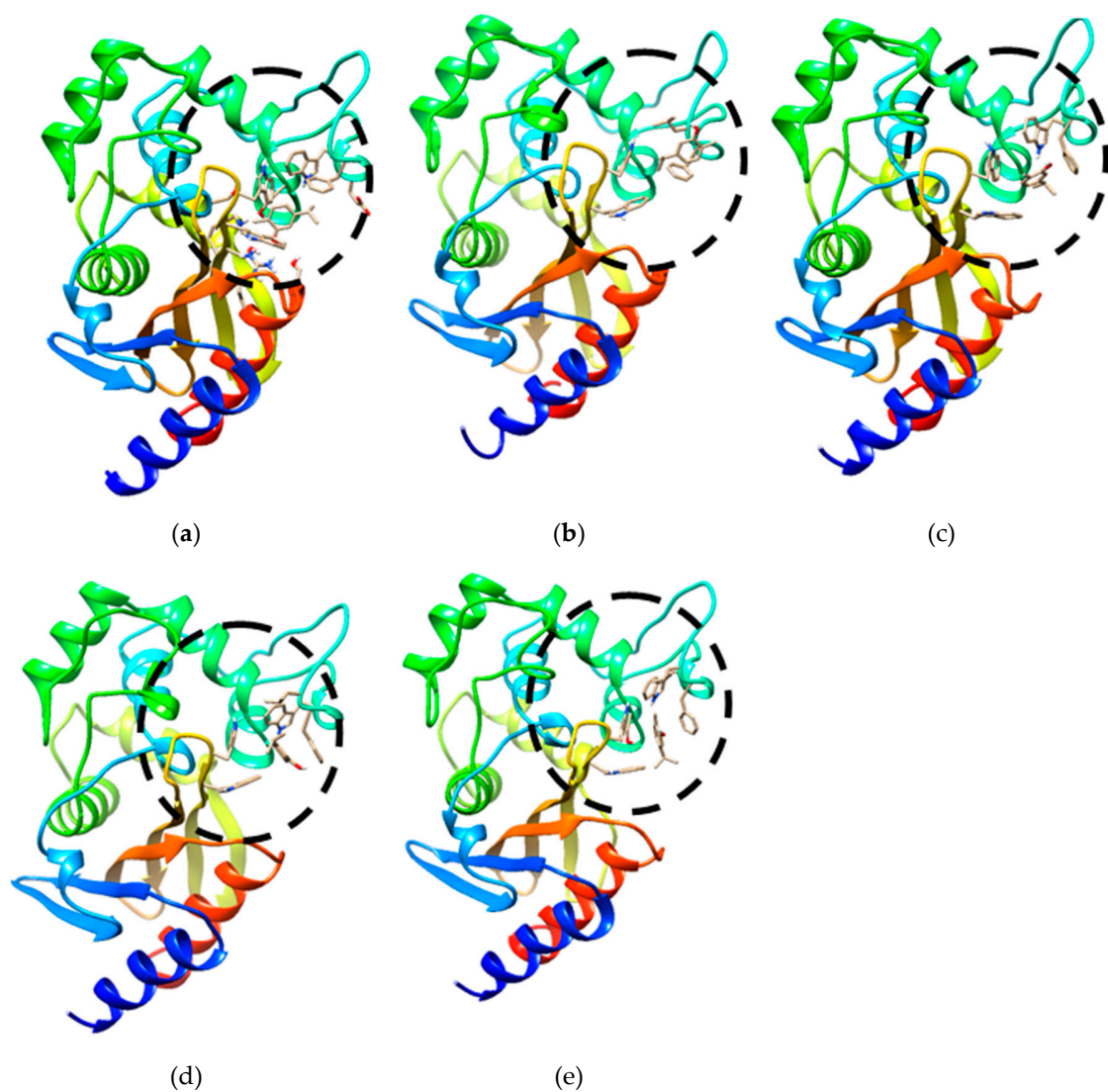


Figure S3. Dynamic interaction of carvacrol and OXA-51 (4ZDX) enzyme over time (in nanoseconds). a) 0 ns, b) 15 ns, c) 30 ns, d) 40 ns, e) 50 ns.

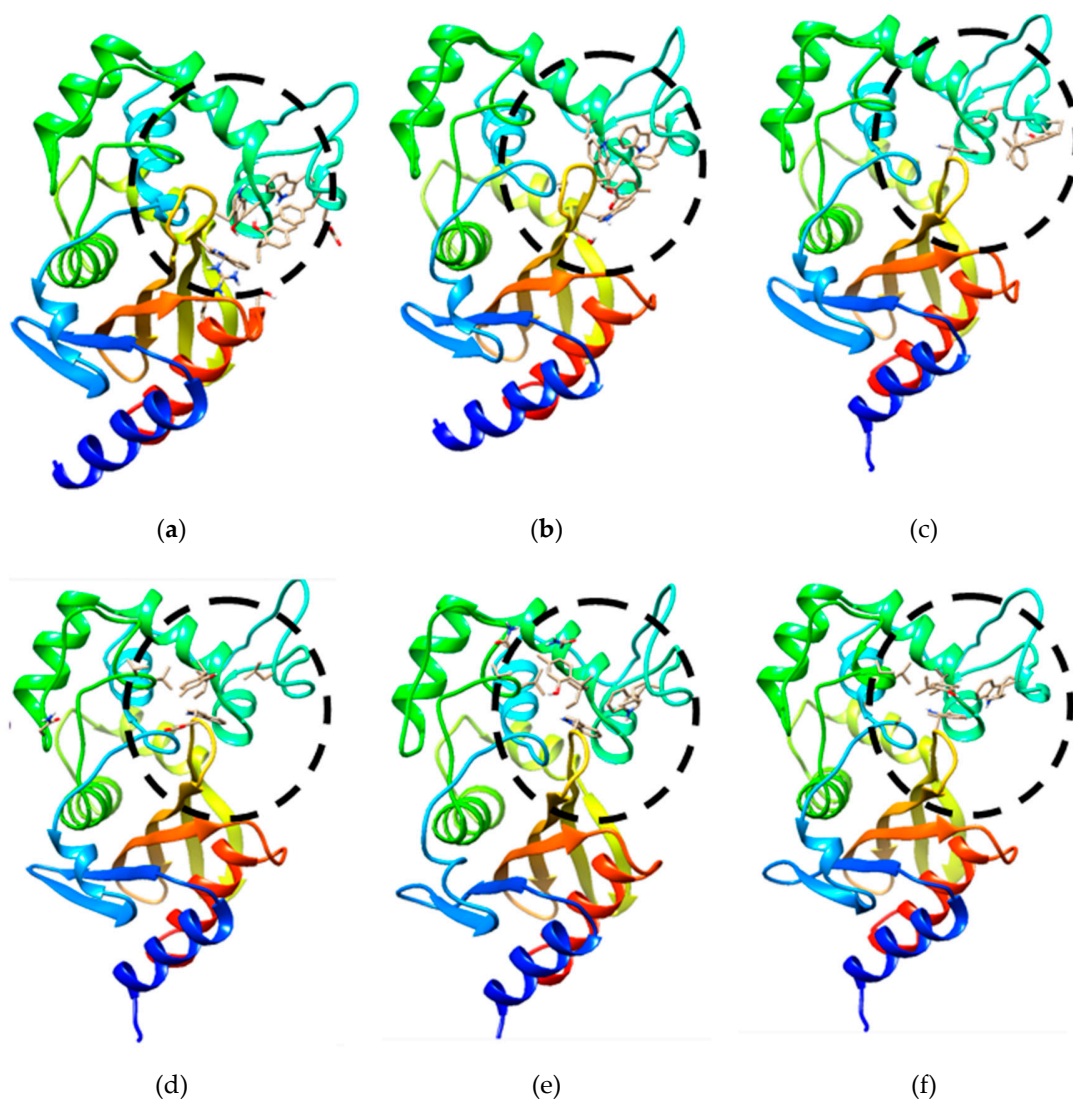


Figure S4. Dynamic interaction of thymol and OXA-51 (4ZDX) enzyme over time (in nanoseconds). a) 0 ns, b) 5 ns, c) 25 ns, d) 34 ns, e) 40 ns, and f) 50 ns.

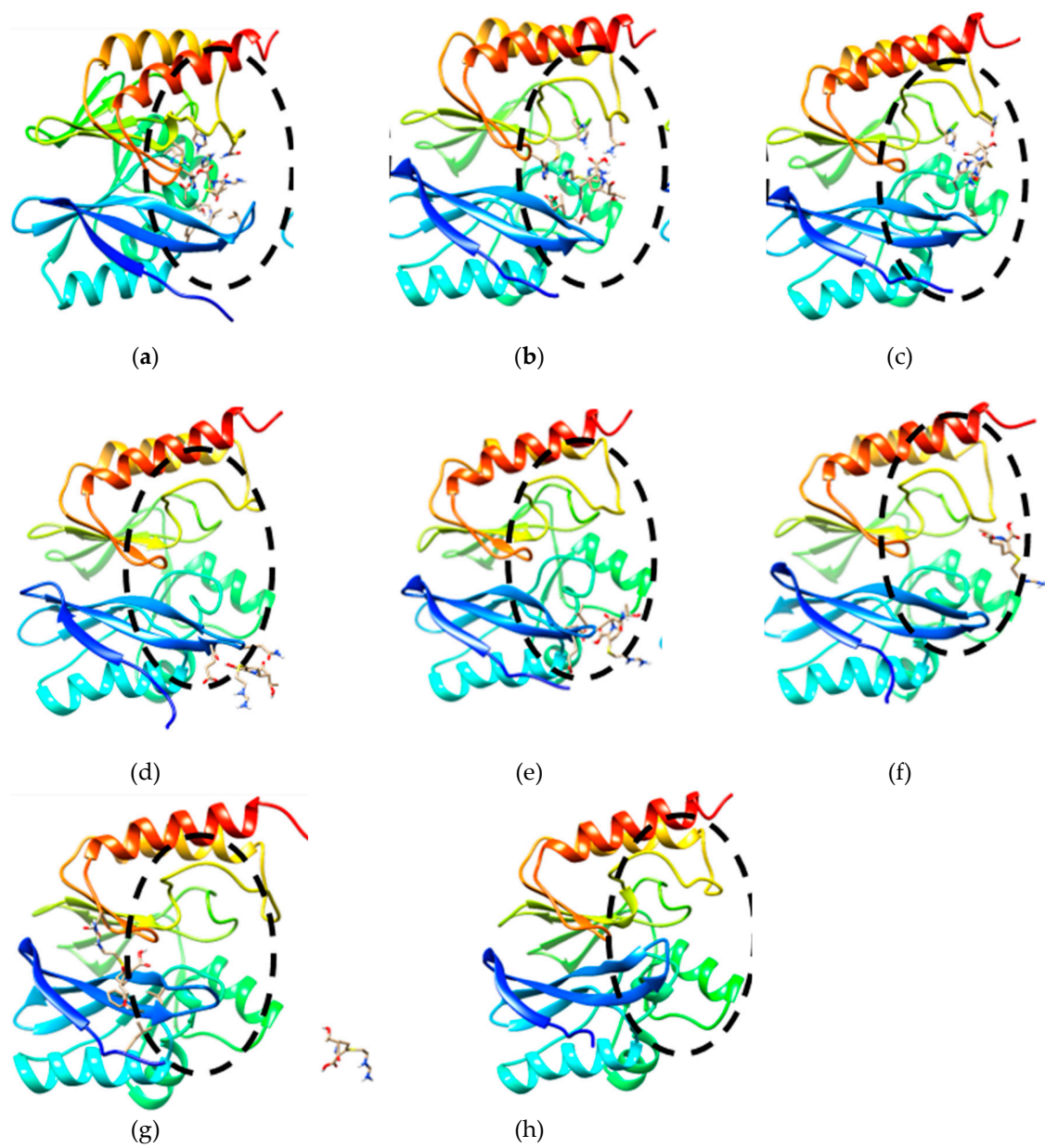


Figure S5. Dynamic interaction of imipenem and IMP-1 (1DDK) enzyme over time (in nanoseconds). a) 0 ns, b) 2 ns, c) 5 ns, d) 10 ns, e) 15 ns, f) 25 ns, g) 45 ns, h) 50 ns.

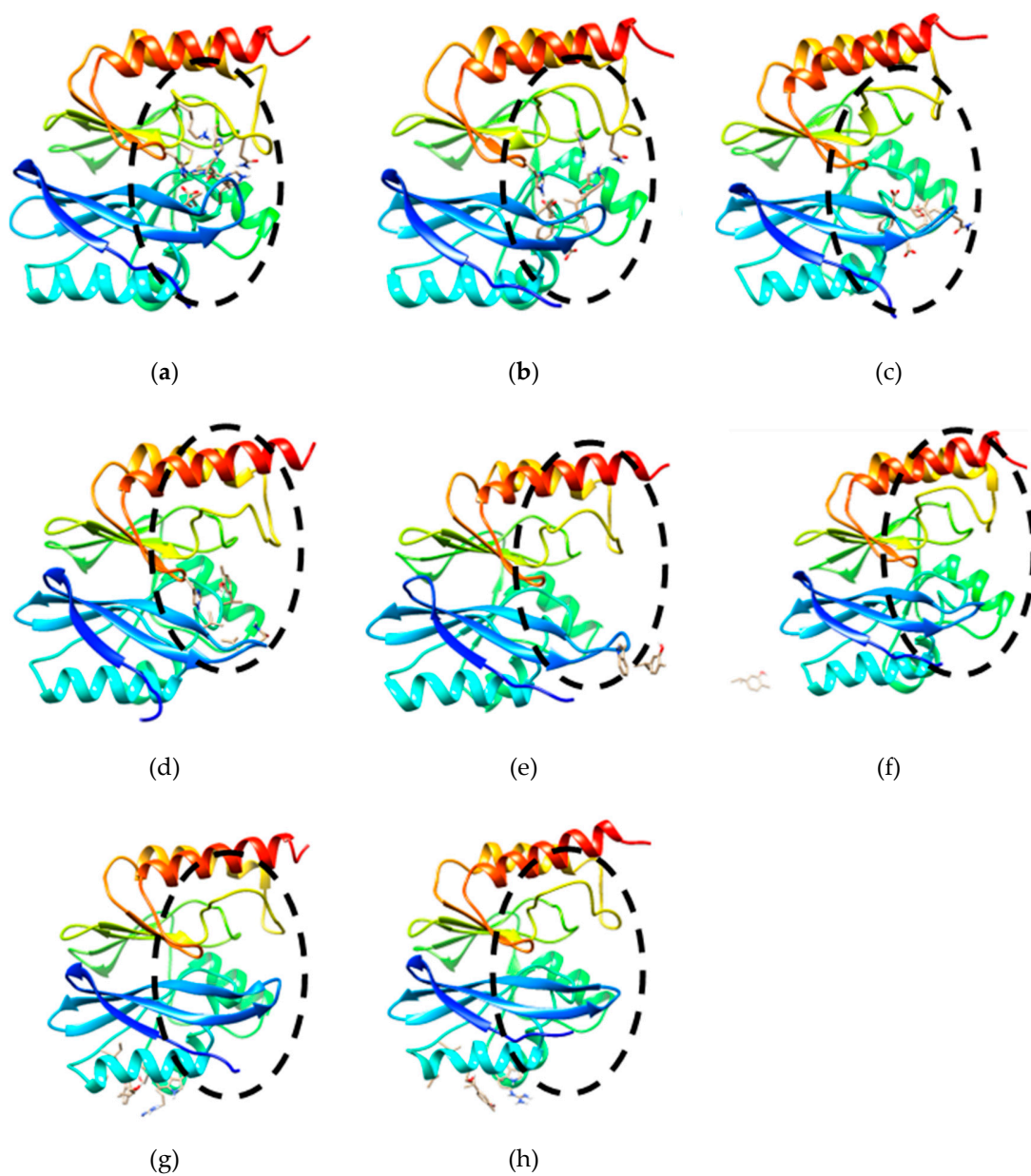


Figure S6. Dynamic interaction of carvacrol and IMP-1 (1DDK) enzyme over time (in nanoseconds). a) 0 ns, b) 5 ns, c) 10 ns, d) 19 ns, e) 21 ns, f) 25 ns, g) 47 ns, h) 50 ns.

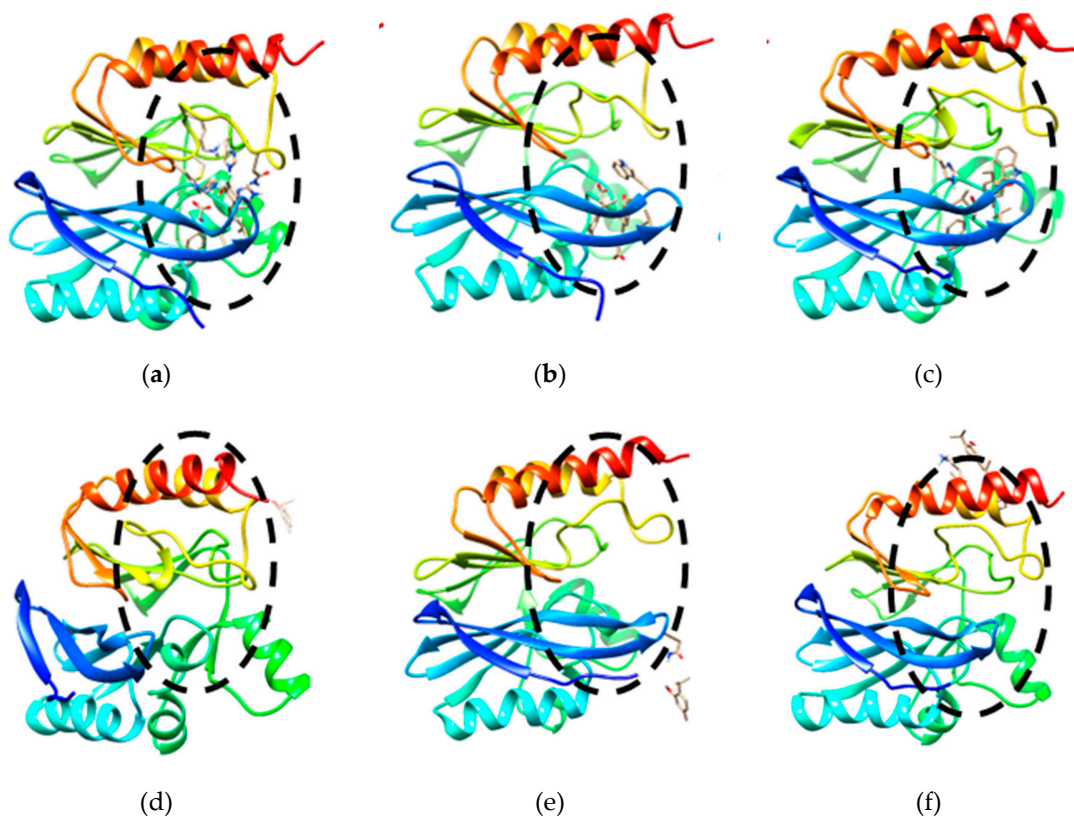


Figure S7. Dynamic interaction of thymol and IMP-1 (1DDK) enzyme over time (in nanoseconds). a) 0 ns, b) 10 ns, c) 20 ns, d) 30 ns, e) 40 ns, f) 50 ns.

Table S1. Active site coordinates of the OXA-51 (PDB: 4ZDX) and IMP-1 (PDB: 1DDK) enzymes prepared in UCSF Chimera software version 1.16. The amino acids present in each region are included.

Enzyme	Center	Size	Aminoacids
OXA-51	23.1202 (x)	28.5741 (x)	Lys83, Ser127, Trp166, Lys217,
	30.4202 (y)	30.8404 (y)	Arg260, Ser80, Phe111, Trp114,
	21.6143 (z)	37.1683 (z)	Ile129, Leu167, Ser218, Trp220, Trp222
IMP-1	11.997 (x)	26.9028 (x)	Glu23, Val25, Trp28, Phe51,
	4.0829 (y)	20.7375 (y)	Asp81, His79, His197, His77,
	57.6211 (z)	15.905 (z)	Cys158, His139, Lys161