

Supplementary Material

Exploitation of Sugarcane Bagasse and Environmentally Sustainable Production, Purification, Characterization, and Application of Lovastatin by *Aspergillus terreus* AUMC 15760 under Solid-State Conditions

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Table S1. GC–MS spectral analysis of the chemical compounds detected in the methanol extract of *A. terreus* AUMC 15760.

No.	Retention time (min)	Name of the compound	Molecular Weight	Molecular Formula
1	10.844	(2Z)-3-Methyl-2-decene	154	C ₁₁ H ₂₂
2	12.018	(Z,Z)-9,12-Octadecadienoic acid	280	C ₁₈ H ₃₂ O ₂
3	11.569	2-Methoxyphenazine	210	C ₁₃ H ₁₀ N ₂ O
4	20.835	4,5,6,7-Tetramethyl-1H-benzimidazole	174	C ₁₁ H ₁₄ N ₂
5	9.442	DL-Arabinitol	152	C ₅ H ₁₂ O ₅
6	21.672	Lovastatin	404	C₂₄H₃₆O₅
7	11.299	Palmitic acid	256	C ₁₆ H ₃₂ O ₂
8	28.669	Simvastatin	418	C₂₅H₃₈O₅

9	10.985	Sorbitol	182	$C_6H_{14}O_6$
10	9.706	Xylitol	152	$C_5H_{12}O_5$

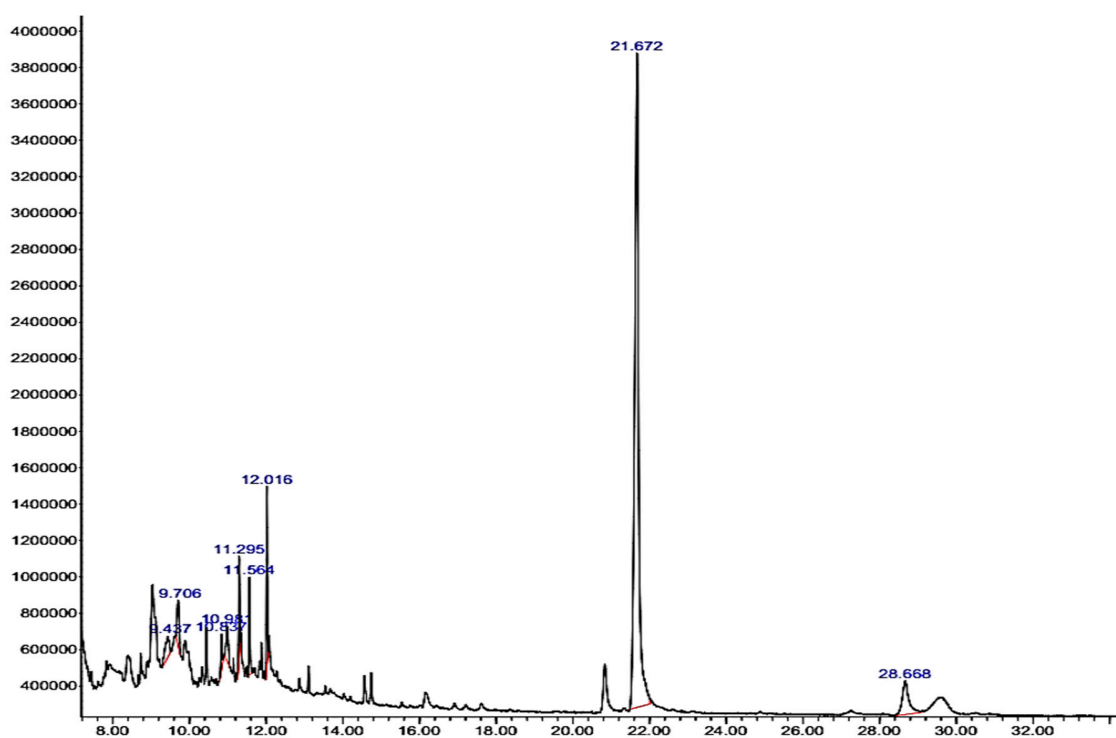


Figure S1. GC-MS chromatogram of the of methanol extract of *A. terreus* AUMC 15760.

Table S2. GC–MS spectral analysis of the chemical compounds detected in the methanol extract of *A. terreus* AUMC 15762.

No.	Retention time (min)	Name of the compound	Molecular Weight	Molecular Formula
1	10.444	4-((1E)-3-Hydroxy-1-propenyl)-2-methoxyphenol	180	C ₁₀ H ₁₂ O ₃
2	11.569	4-Nitro-2,6-dimethylphenol	167	C ₈ H ₉ NO ₃
3	12.024	cis, cis-Linoleic acid	266	C ₁₇ H ₃₀ O ₂
4	9.436	Deoxyribose	134	C ₅ H ₁₀ O ₄
5	9.116	Mono trimethylsilyl acrylic acid	144	C ₆ H ₁₂ O ₂ Si
6	21.673	Lovastatin	404	C₂₄H₃₆O₅
7	8.403	N-Ethyl-2-carbomethoxyazetidine	143	C ₇ H ₁₃ NO ₂
8	9.608	Ribitol	152	C ₅ H ₁₂ O ₅
9	11.665	Sorbitol	182	C ₆ H ₁₄ O ₆
10	9.025	Xylitol	152	C ₅ H ₁₂ O ₅

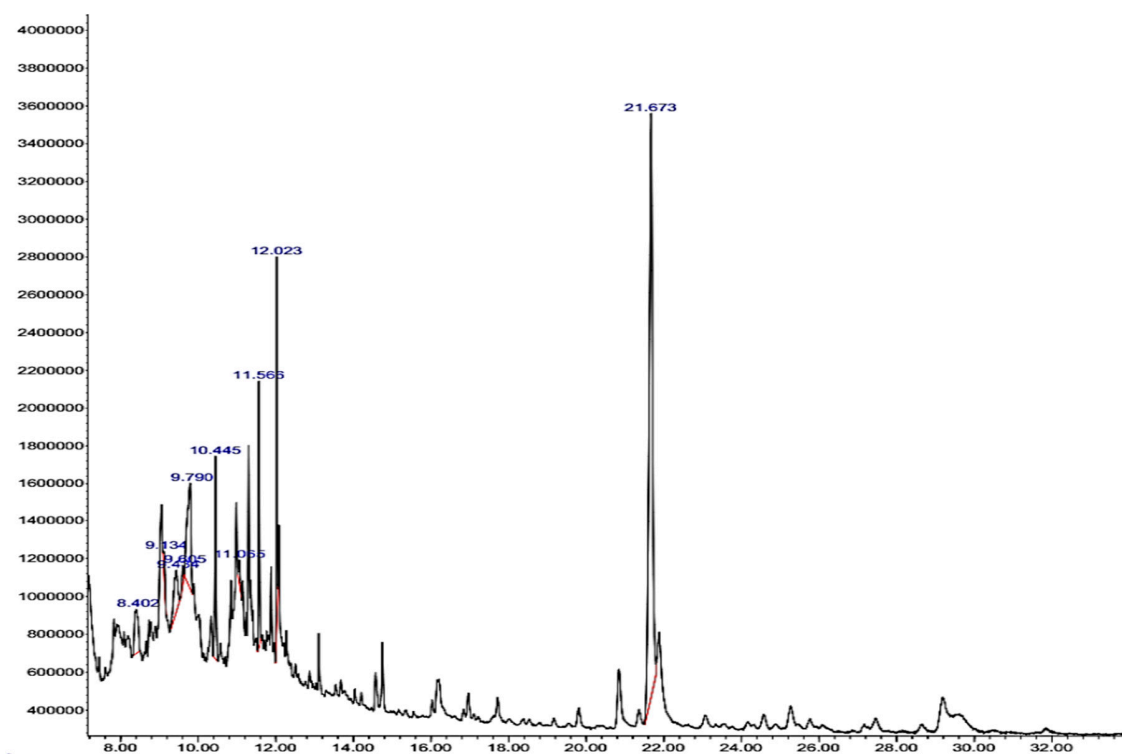


Figure S2. GC-MS chromatogram of the of methanol extract of *A. terreus* AUMC 15762.

Table S3. GC–MS spectral analysis of the chemical compounds detected in the methanol extract of *A. terreus* AUMC 15763.

No.	Retention time (min)	Name of the compound	Molecular Weight	Molecular Formula
1	29.191	2-Amino propanoic acid	88	C ₃ H ₇ NO ₂
2	11.354	3-Isobutylhexahydropyrrolo[1,2-a]pyrazine1,4-dione	210	C ₁₁ H ₁₈ N ₂ O ₂
3	12.024	cis, cis-Linoleic acid	266	C ₁₇ H ₃₀ O ₂
4	20.854	4,5,6,7-Tetramethyl-1H-benzimidazole	174	C ₁₁ H ₁₄ N ₂
5	9.116	N-Ethyl-2-carbomethoxyazetidine	143	C ₇ H ₁₃ NO ₂
6	21.709	Lovastatin	404	C₂₄H₃₆O₅
7	11.299	Palmitic acid	256	C ₁₆ H ₃₂ O ₂
8	28.687	Simvastatin	418	C₂₅H₃₈O₅
9	10.936	Sorbitol	182	C ₆ H ₁₄ O ₆
10	9.054	Trans-Crotyl alcohol, tert-butyldimethylsilyl ether	186	C ₁₀ H ₂₂ OSi

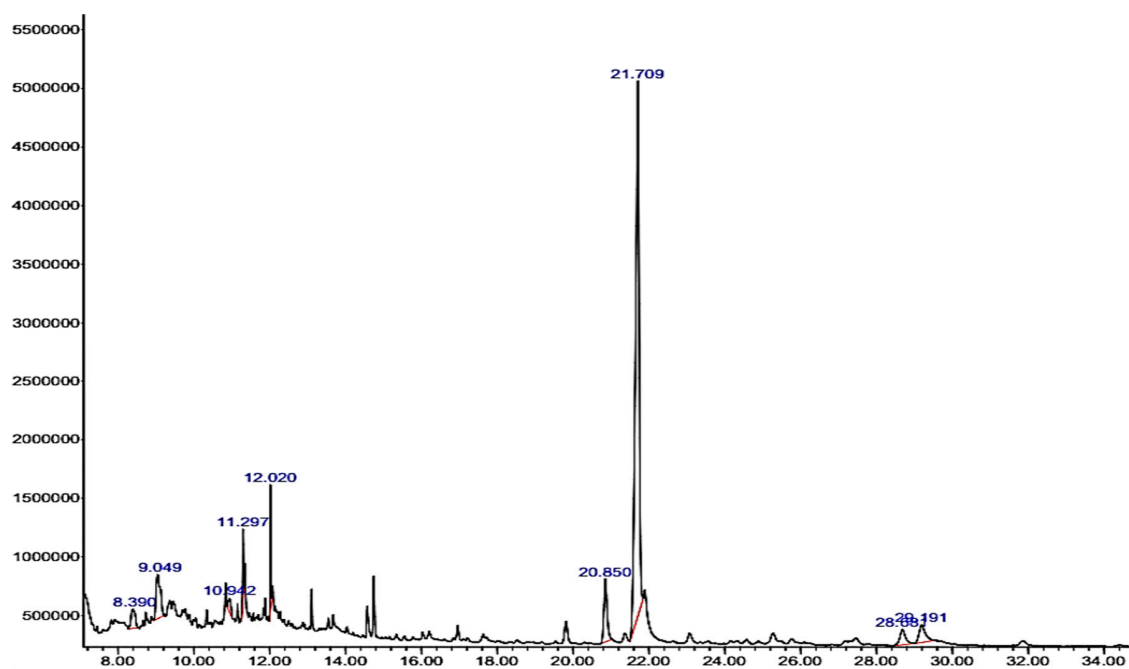


Figure S3. GC-MS chromatogram of the of methanol extract of *A. terreus* AUMC 15763.

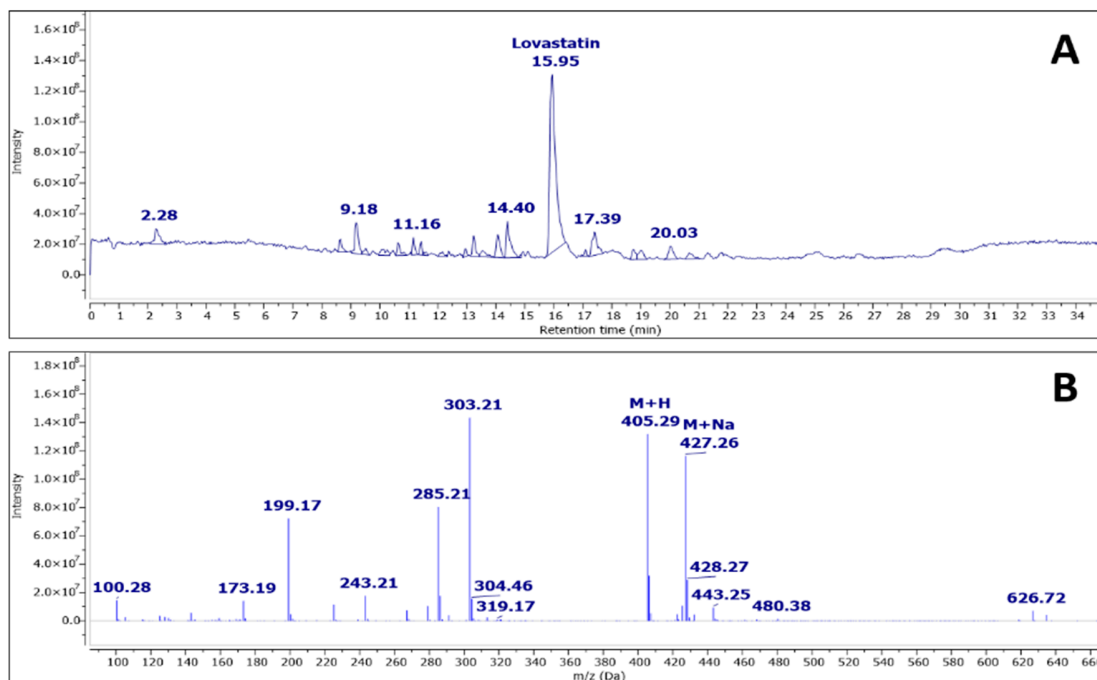


Figure S4. (A), LC chromatogram of the fraction Fr. 8-S5. (B), Positive ion LC-MS/MS chromatogram of detected lovastatin in the fraction Fr. 8-S5 produced by *A. terreus* AUMC 15760.

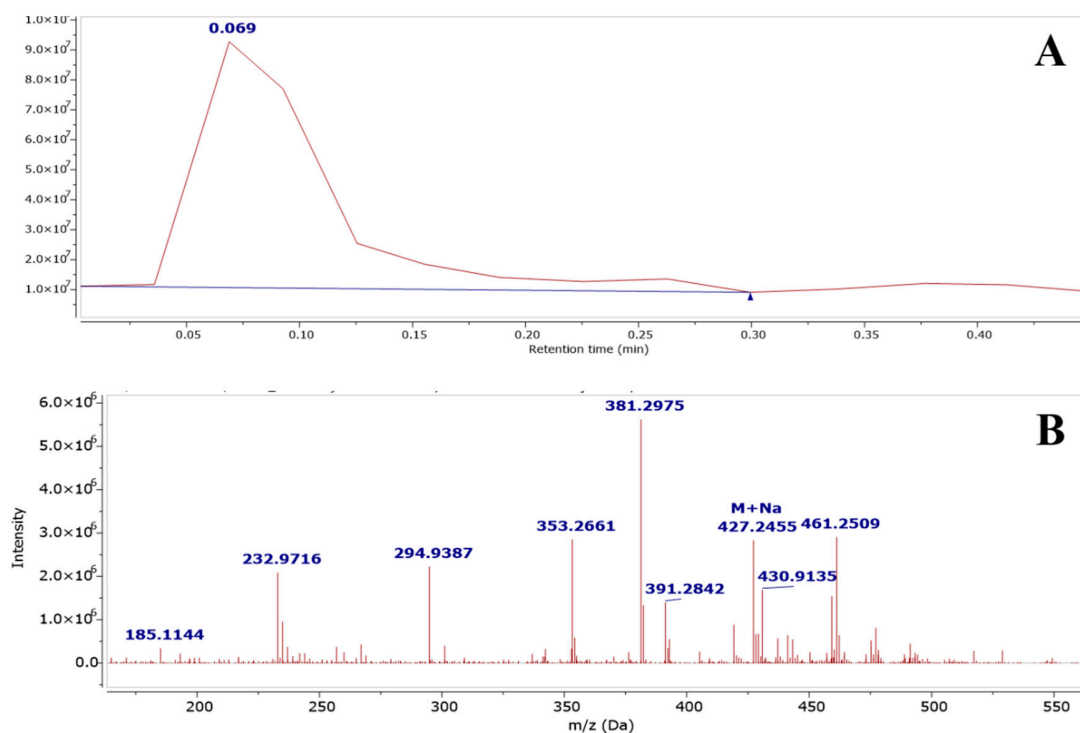


Figure S5. (A), Total ion chromatogram. (B), Electron Spray Ionization Mass spectrum of the pure isolated lovastatin.

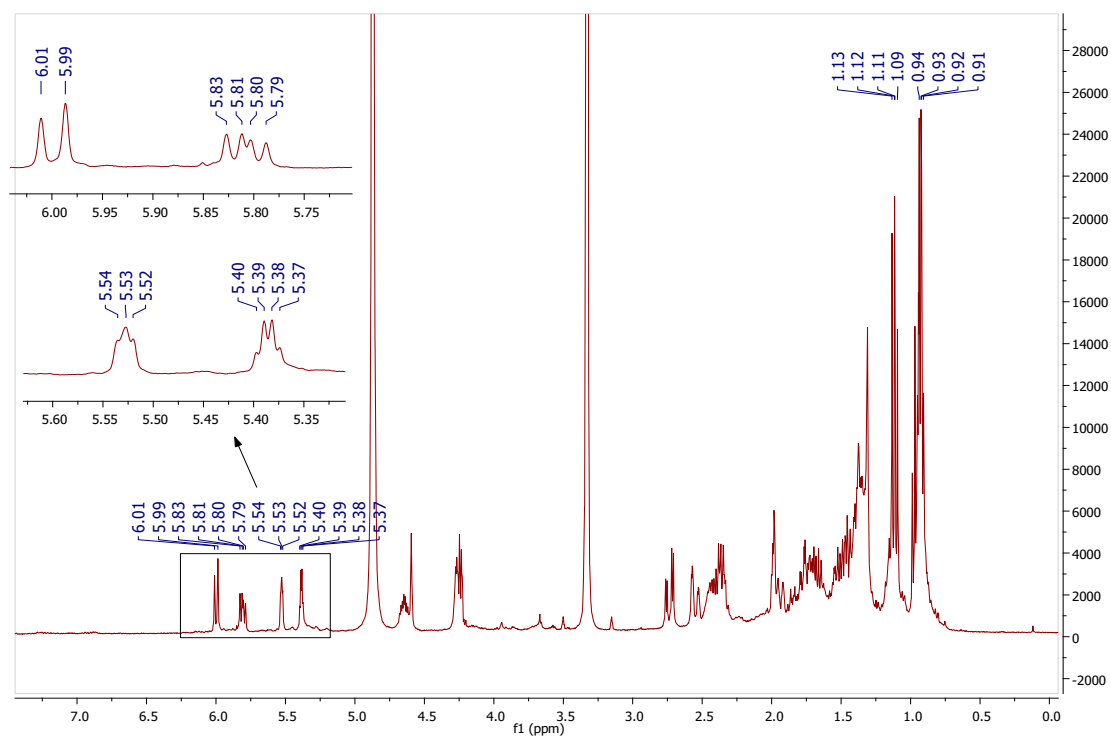


Figure S6. ^1H -NMR spectrum of lovastatin measured in (CD_3OD , 400 MHz).

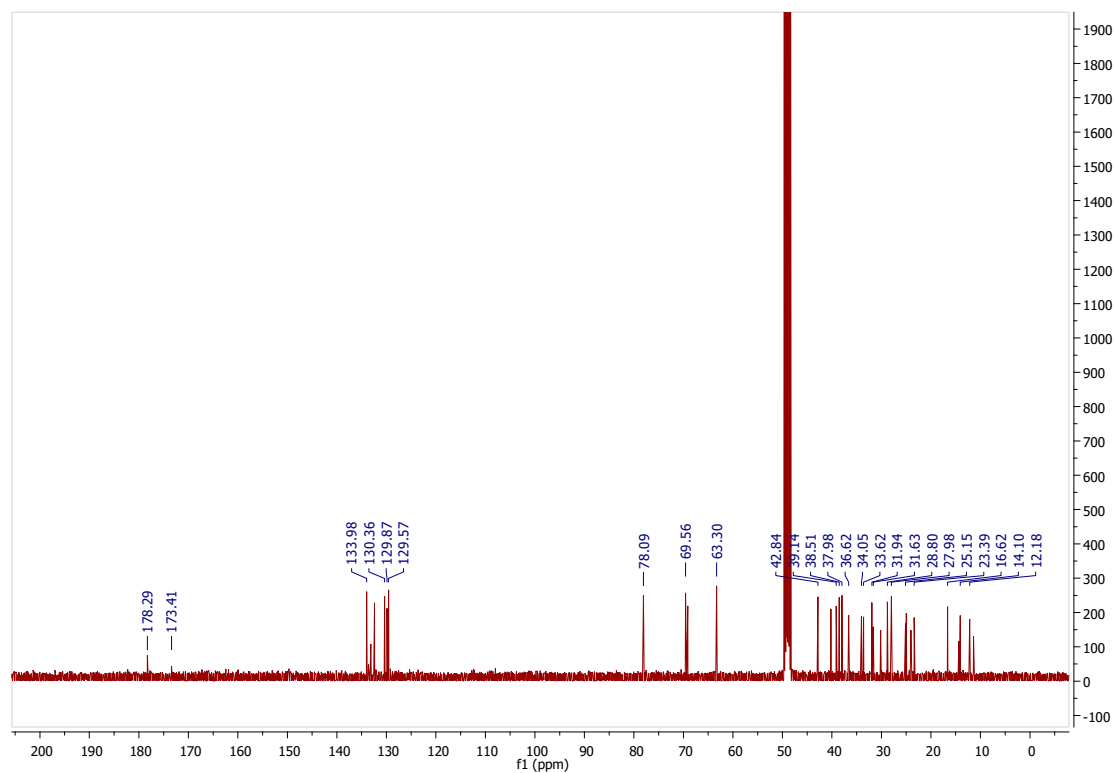


Figure S7. ^{13}C -NMR spectrum of lovastatin measured in (CD_3OD , 100 MHz).

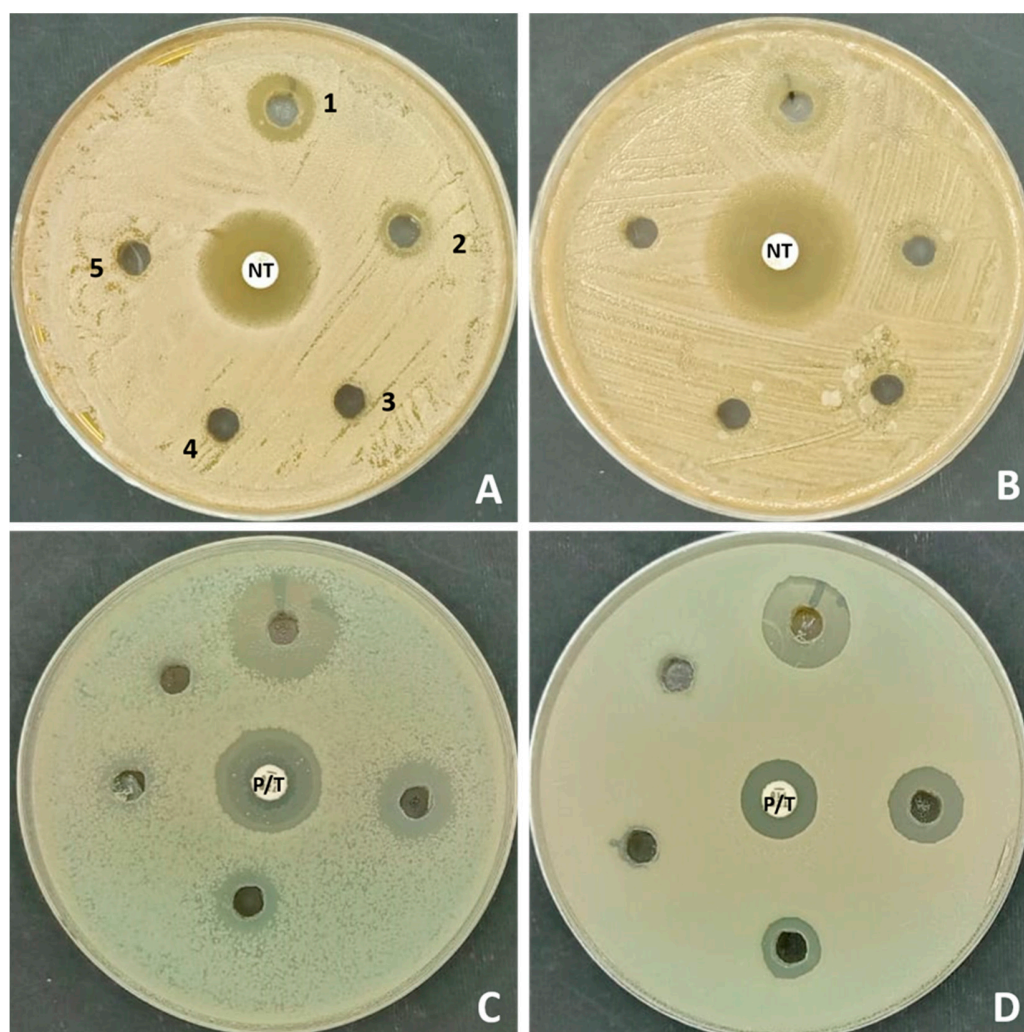


Figure S8. Effect of the purified lovastatin on: (A), *C. albicans* (B), *C. glabrata* (C), *S. aureus* (D), *S. epidermidis* (at 1: 5 mg/mL; 2: 2.5 mg/mL; 3: 1.25 mg/mL; 4: 0.62 mg/mL and 5: 0.31 mg/mL) compared to Nystatin (NT) and Piperacillin/Tazobactam (P/T).