List of Figures

S. No	Title	Page No
1.1	Clinical manifestation of atherosclerosis	10
1.2	Schematics of work plan	14
2.1	Base structure of statins	16
2.2	Chemical structure of synthetic statins	17
2.3	Mechanism of action for hypocholesterolemic activity of statins	18
2.4	Yearly prescription of statins	25
2.5	Lovastatin biosynthetic pathway	28
2.6	Lovastatin biosynthetic gene cluster	29
2.7	Enzymatic conversion of monacolin J to simvastatin	31
4.1	Fungal isolates in potato dextrose agar slants	56
4.2	A. Isolation of bacteria from samples on LB agar platesB. Isolation of pure bacteria on LB agar plates	56-57
4.3	Plates showing zone of inhibitions of various sizes during screening	58
4.4	Preliminary screening of microbial isolates for HMGR production based on λ max and Rf values.	62
4.5	Number of microbial isolates Vs size of zone of inhibition in yeast growth inhibition bioassay.	63
4.6	UV absorption spectrum of standard simvastatin	64
4.7	Standard calibration graph of simvastatin	64
4.8	Correlation between inhibition zones and statin production.	65
4.9	Morphological features of BG 17 & BG 188	67
4.10	Phylogenetic identification of BG 17 based on 16rRNA sequencing	70
4.11	Phylogenetic identification of BG 188 based on 16rRNA sequencing	71
4.12	Growth of BG 17 in Luria broth at corresponding temperatures	72
4.13	Growth of BG 188 in Luria broth at corresponding temperatures	73
4.14	Growth of BG 17 in Luria broth at 37°C and corresponding pH	73
4.15	Growth of BG 188 in Luria broth at 37°C and corresponding pH	74

4.16	a. Yeast growth inhibition bioassay-broth assay	76-77
	b. Yeast growth inhibition bioassay-plate assay	
4.17	Quantitative real-time RT-PCR analysis for HMGR expression	78
4.18	MTT assay with SK-03 and SK-04	79
4.19	Thin Layer Chromatography for SK-03 and SK-04	80
4.20&4.21	High Performance Liquid Chromatography	81
4.22	Mass spectrum of SK-03	83
4.23	Mass spectrum of SK-04	83
4.24	Infra Red spectrum for standard simvastatin	84
4.25	Infra Red spectrum for SK-03 & SK-04	88
4.26	Morphological characterization of fungal isolate FG 7	83
4.27	a. Yeast growth inhibition bioassay-broth assay	00
	b. Yeast growth inhibition bioassay-plate assay	90
4.28	Thin layer chromatography	92
4.29	High Performance Liquid Chromatography	93
4.30	Mass Spectrum of SK-02	93
4.31	IR spectrum for SK-02	94
4.32	PCR products on agarose gel	95
4.33	Chromatogram sequence of Lov D (400 bp fragment)	96
4.34	Chromatogram sequence of Lov D (1000 bp fragment)	97
4.35	BLAST results	100
4.36	Bacterial homolog of fungal Lov D	102
4.37	Structural similarity between bacterial and fungal protein	104
4.39	Phenotypic confirmation of beta lactamase gene (disk diffusion plate)	105
4.40	Genotypic confirmation of beta lactamase gene (gel image)	106