

MOLECULAR GENETIC STUDIES ON AVERMECTIN PRODUCTION IN SOME MICROORGANISMS

By

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رسالة مقدمة من

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ABSTRACT

Reem Saad Mohamedy Ali: Molecular Genetic Studies on Avermectin Production in Some Microorganisms. Unpublished M.Sc. Thesis, Department of Genetics, Faculty of Agriculture, Ain Shams University, 2011.

Avermectins, are important secondary metabolites produced by soil bacterium called *Streptomyces avermitilis*. These compounds are important in animal, human health and crop protection. The broad spectrum agricultural pesticidal activity of the avermectins was demonstrated against insect pests in several orders. The killing ability of *S. avermitilis* NRRL 8165 against plant parasite nematodes improved by the Induction of mutation in parental strain *Streptomyces avermitilis* NRRL 6185 using ethedum bromide as a mutagen, to obtain new recombinants differ in their ability to produce avermectin compounds and in their morphological and physiological character comparing to the wild type. Results from mutation indicated that the growth rate in two mutants accelerated by significant value, where the growth of them appeared after 2 days and 4 days compared with 7 days growth in parental strain NRRL 6185. The production of avermectin complex was detected in the both of fermentation medium of both parental strain *S. avermitilis* NRRL8165 and mutants by detecting the killing ability of each stain on nematode larvae, and chromatographically using thin layer chromatography assay (TLC).

Key Words:

Avermectin, *Streptomyces avermitilis*, *Meloidegyne*, nematode, TLC, mutation, ethedum bromide, RAPD-PCR.

CONTENTS

	Page
LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
I- INTRODUCTION.....	1
II- REVIEW OF LITERATURE.....	4
1. avermectins: chemical structure, importance, genetic organization and producing organism.....	4
1.1. Mechanism of toxicity of avermectin on nematode larvae.....	6
1.2. Importance of avermectin in agriculture, medical, and veterinary medicine.....	6
1.3. Gene organization of avermectin production genome	8
2. Physiology of <i>S. avermitilis</i> NRRL 8165 strain	11
3. Effect of <i>Streptomyces avermitilis</i> culture filtrate on root knot nematode.....	11
4. Assay of avermectins by thin layer chromatography (TLC).....	13
5. Genetic improvement in microorganisms.....	16
6. Mutagenic effects of ethedim bromide on <i>S.</i> <i>avermitilis</i> NRRL 8165.....	19
7. Biochemical genetic studies.....	20
7.1. SDS-PAGE analysis.....	20
8. Molecular genetic studies based on PCR	21
8.1. RAPD-PCR analysis.....	21
III- MATERIALS AND METHODS.....	23
Materials.....	23
1. Bacterial strains.....	23
2. Avermectin standard.....	23
3. Media composition.....	23

3.1. Yeast extract- Malt extract –Glucose (YMG) agar	23
3.2. Mineral medium.....	24
3.3. Yeast extract- Malt extract- Soluble Starch Medium	24
3.4. Oatmeal agar medium.....	24
3.5. Fermentation medium.....	25
3.6. Peptone- yeast extract iron agar medium.....	25
3.7. Peptone-glycerol agar medium (PG).....	25
3.8. Complete medium (CM).....	26
3.8.1. Complete medium (CM) with Bromo-Thymol Blue (BTB).....	26
3.9. Liquid SM Medium.....	26
3.10. Glycerol-Asparagine agar.....	26
3.11. Nutrient agar medium.....	27
3.12. Potatoes- Dextrose Agar medium (PDA).....	27
4- Nematode larvae.....	27
5- Mutagen.....	27
6- Buffers and Solutions.....	28
6.1. Buffers.....	28
6.1.1. Bacterial protein extraction buffers.....	
1.6.1.1. Sample buffer (2x) (for loading preparation)..	28
1.6.1.2. Resolving gel buffer (4x tris. Ph 8.4).....	28
1.6.1.3. Stacking gel buffer (1M Tris- HCl. pH 6.8)..	28
1.6.1.4. Run buffer.....	28
1.6.2. Bacterial DNA extraction buffers.....	28
1.6.2.1. Lysis buffer.....	28
1.6.2.2. TE buffer.....	29
1.6.2.3. PCA buffer (Phenol: Chloroform: Isoamyl)...	29
1.6.2.4. 5x Tris-Borate EDTA (TBE).....	29
6.2. Stock solutions of acrylamide gels.....	29
6.2.1. Acrylamide stock 30%.....	29
6.2.2. 10% sodium Dodecyl sulfate solution (SDS)...	29
7- Gel preparation.....	29

7.1. Resolving gel.....	29
7.2. Staking gel.....	29
8-Staining and destaining solutions preparation.....	30
8.1. Staining solution.....	30
8.2. Destaining solution.....	30
Methods.....	31
1. Phenotype characterization of <i>S. avermitilis</i> NRRL 8165.....	31
1.1. Bacterial culture.....	31
1.2. Fermentation studies.....	31
2. Physiological characterization of <i>S. avermitilis</i> NRRL 8165	31
2.1. Carbon source utilization.....	31
2.2. Tolerance to salinity of NaCl.....	32
2.3. Gelatin hydrolysis	32
2.4. Catalase analysis.....	32
2.5. Starch hydrolysis (Amylase activity).....	32
2.6. Plate assay of chitinase activity.....	32
2.6.1. Preparation of colloidal chitin.....	32
2.7. pH reaction of <i>S. avermitilis</i> NRRL 8165.....	32
2.8. Lipase analysis.....	34
3-Effect of <i>Streptomyces avermitilis</i> culture filtrate on root knot nematode.....	34
3.1. Extraction of nematode larvae from infected soil	34
3.2. The effect of <i>S. avermitilis</i> culture filtrates on nematode larvae.....	34
4-Chromatographic assay of <i>Streptomyces avermitilis</i> culture filtrates	34
4.1. Thin layer chromatography (TLC).....	34
4.2. staining of TLC plates.....	36
4.2.1. Ferric Chloride	36
4.2.2. Iodine.....	36

4.2.3. Permanganate (KMnO ₄).....	37
5. Genetic improvement in microorganisms.....	37
5.1. Spore suspensions preparation.....	37
5.2. ethedum bromide as a mutagen.....	37
5.3. Isolation of mutants.....	38
6-Total protein.....	39
6.1. Extraction of total protein fraction.....	39
6.2. Gel preparation.....	39
6.3. Application of samples.....	40
6.4. Gel run and staining.....	40
6.5. Destining.....	40
6.6. gel analysis.....	40
7-Molecular genetic studies.....	40
7.1. Genomic DNA preparation.....	41
7.2. Oligonucleotide primers and PCR amplification conditions	41
7.3. Gel electrophoresis.....	42
8. Statistical analysis.....	43
I- RESULTS AND DISCUSSION.....	44
1.Phenotype characterization of <i>Streptomyces avermitilis</i> NRRL 8165.....	44
2. Physiological characterization of <i>S. avermitilis</i> NRRL 8165.....	47
3. Effect of <i>Streptomyces avermitilis</i> culture filtrate on root knot nematode.....	49
4. Analysis of avermectin compounds by TLC silica gel chromatography.....	53
5. Mutagenic effects of ethedum bromide on <i>S. avermitilis</i> NRRL 8165.....	55
6. Isolation and morphological characterization of <i>Streptomyces avermitilis</i> NRRL 8165 derived mutants	58
7. Typical image morphology after ethedum bromide	62

mutation of <i>S. avermitilis</i> NRRL.B.8165	
8. TLC analysis for avermectin production in mutant strains derived from <i>S. avermitilis</i> NRRL 8165.....	64
9. Bioassay of <i>Streptomyces avermitilis</i> mutant strains culture filtrates on root knot nematode.....	70
10. Biochemical analysis of protein patterns in <i>S. avermitilis</i> derived mutants.....	72
11. Molecular biology of <i>Streptomyces avermitilis</i>	75
11.1. RAPD-PCR analysis.....	75
V- SUMMARY	79
VI- REFERENCES	82
ARABIC SAMMARY	

LIST OF TABLES

No		Page
1	Species, code and source of <i>Streptomyces avermitilis</i> NRRL 8165	23
2	Code name of <i>Streptomyces avermitilis</i> derived mutant	38
3	Random amplified polymorphic DNA primers used in this study	42
4	Phenotype characterization of <i>Streptomyces avermitilis</i> NRRL 8165	45
5	Physiological characterization of <i>S. avermitilis</i> NRRL 8165	48
6	Mortality rate of nematode larvae tested with different concentrations of <i>S. avermitilis</i> NRRL 8165 culture filtrate	50
7	Relative decrease in nematode larvae treated with different concentrations of <i>S. avermitilis</i> NRRL 8165 culture filtrates at different times	51
8	mutagenic effects of ethedum bromide on <i>S. avermitilis</i> NRRL 8165	56
9	Phenotype characterization of mutants derived from <i>S. avermitilis</i> as a parental wild type	59,60
10	Bioassay of <i>Streptomyces avermitilis</i> mutant strains culture filtrates on root knot nematode	71
11	SDS-PAGE of total proteins extracted from <i>Streptomyces avermitilis</i> NRRL 8165 derived mutants	74

LIST OF FIGURES

No		Page
1	chemical structure of avermectins	4
2	Organization of the gene cluster for avermectin biosynthesis. The direction of transcription and relative size of the ORFs deduced from analysis of the nucleotide sequence are indicated	9
3	chemical structure of ethedum bromide	19
4	Summary of purification and characterization	36
5	Phenotype characterization of <i>Streptomyces avermitilis</i> NRRL 8165.	46
6	TLC of avermectin produced from <i>S. avermitilis</i> culture filtrate on fermentation medium.	54
7,8	mutagenic effects of ethedum bromide on <i>S. avermitilis</i> NRRL 8165.	57
9	Typical image morphology after ethedum bromide mutation of <i>S. avermitilis</i> NRRL 8165.	63
10	TLC analysis for avermectin production in mutant strains derived from <i>S. avermitilis</i> NRRL 8165.	65
11,12, 13,14	TLC chromatographic analysis of <i>Streptomyces avermitilis</i> culture filtrate and its mutants filtrate	66.67 68.69
15	SDS-PAGE of total protein in <i>S. avermitilis</i> derived mutants.	73
16	DNA profile generated by primer P ₂₃	76
17	DNA profile generated by primer P ₇₃	81

