

Table of Contents

1	Introduction	1
1.1	Need for new leads from natural products	1
1.2	The influence of natural products upon drug discovery.....	2
1.2.1	Plants: a source of biologically active secondary metabolites	4
1.2.2	Fungi: a source of biologically active secondary metabolites.....	5
1.3	Antibiotics	12
1.3.1	Angucycline antibiotics.....	14
1.4	Peptic ulcers and <i>Helicobacter pylori</i>	20
1.4.1	Ochromycinone (22) and YM-181741 (25): two selective anti- <i>H. pylori</i> agents	23
1.5	Known syntheses of ochromycinone (22).....	24
1.6	Present study: Aim and Scope	26
2	Results and discussion: metabolites from fungi	28
2.1	Strain 5681	28
2.1.1	Isolation of secondary metabolites.....	28
2.1.2	Structure elucidation	30
2.1.3	Biological activity of the secondary metabolites	43
2.2	Strain 6744	45
2.2.1	Isolation of the secondary metabolites	46
2.2.2	Structure elucidation	47
2.2.3	Biological activity of the secondary metabolites	61
2.3	Strain 6760	61
2.3.1	Isolation of secondary metabolites.....	61
2.3.2	Structure elucidation	62
2.3.3	Biological activity of the secondary metabolites	67
3	Results and discussion: metabolites from the plant <i>Prismatomeris tetrandra</i>.....	69
3.1	<i>Prismatomeris tetrandra</i> (Roxb) K. Schum	69
3.1.1	Isolation of secondary metabolites.....	70
3.1.2	Structure elucidation	70
4	Determination of the Absolute Configuration by the Exciton Chirality Method ..	76
4.1	Introduction	76
4.2	Exciton chirality method: basic principles	76
4.2.1	Exciton coupling between identical chromophores	77

4.3	Determination of the absolute configuration of 6744-5	78
4.4	Determination of the absolute configuration of 6744-6	80
5	Results and discussion: synthetic part.....	82
5.1	Synthesis of (+)-ochromycinone	82
5.1.1	Retrosynthesis	82
5.1.2	Results and discussion.....	83
6	Summary.....	90
7	Experimental part.....	94
7.1	General methods and Instrumentation	94
7.2	Microbiological work.....	95
7.3	Experimental part: Isolation of Natural Products	96
7.3.1	Metabolites from Strain 5681.....	96
7.3.2	Metabolites from Strain 6744.....	108
7.3.3	Metabolites from Strain 6760.....	118
7.3.4	Metabolites from <i>Prismatomeris tetrandra</i>	121
7.4	Experimental part: Synthesis of (+)-Ochromycinone (22)	125
8	Abbreviations.....	133
9	References	135