

## DAFTAR ISI

|   |      |
|---|------|
| HALAMAN PENGESAHAN.....                       | ii   |
| KATA PENGANTAR .....                          | iii  |
| DAFTAR ISI.....                               | v    |
| DAFTAR TABEL.....                             | viii |
| DAFTAR GAMBAR .....                           | ix   |
| DAFTAR LAMPIRAN.....                          | x    |
| ABSTRAK .....                                 | xi   |
| <i>ABSTRACT</i> .....                         | xii  |
| BAB I PENDAHULUAN .....                       | 1    |
| I.1 Latar Belakang .....                      | 1    |
| I.2 Tujuan Penelitian .....                   | 3    |
| BAB II TINJAUAN PUSTAKA.....                  | 4    |
| II.1 Kitosan .....                            | 4    |
| II.2 Derajat Deasetilasi .....                | 5    |
| II.3 Penentuan Berat Molekul.....             | 6    |
| II.4 Basa Schiff.....                         | 7    |
| II.5 Reaksi Kondensasi .....                  | 8    |
| II.6 <i>Orto</i> -Vanillin.....               | 9    |
| II.7 Kitosan Termodifikasi .....              | 10   |
| II.8 Uji Aktivitas Antibakteri.....           | 11   |
| II.9 Absorpsi Nanopartikel Perak (AgNP) ..... | 13   |

|   |    |
|---|----|
| II.10 Spektrofotometer .....  | 14 |
| II.10.1 Spektrofotometer UV-Vis .....   | 14 |
| II.10.2 Spektrofotometer FT-IR .....  | 16 |
| II.11 <i>Surface Plasmon Resonance</i> .....  | 17 |
| II.12 <i>Scanning Electron Microscope–Energy Dispersive X-Ray</i> .....                   | 18 |
| BAB III METODE PENELITIAN.....  | 20 |
| III.1 Alat dan Bahan.....   | 20 |
| III.2 Prosedur Kerja.....   | 21 |
| III.2.1 Identifikasi Kitosan .....  | 21 |
| III.2.2 Sintesis Basa Schiff Kitosan-orto-Vanillin .....                                  | 23 |
| III.2.3 Sintesis Turunan Komposit Kitosan/AgNP.....                                       | 23 |
| III.2.4 Uji Aktivitas Antibakteri.....  | 26 |
| III.2.5 Karakterisasi.....  | 28 |
| BAB IV .....  | 29 |
| IV.1 Karakterisasi Kitosan.....   | 29 |
| IV.1.1 Penentuan Derajat Deasetilasi dengan Spektrofotometer FT-IR .....                  | 29 |
| IV.1.2 Penentuan Berat Molekul Kitosan.....   | 32 |
| IV.2 Sintesis Basa Schiff Kitosan-orto-Vanillin .....                                     | 35 |
| IV.2.1 Analisis Basa Schiff Kitosan-orto-Vanillin dengan Spektrofotometer<br>UV-Vis ..... | 37 |
| IV.2.2 Analisis Basa Schiff Kitosan-orto-Vanillin dengan Spektrofotometer<br>FT-IR.....   | 39 |
| IV.3 Sintesis Komposit Turunan Kitosan/AgNP .....   | 42 |

|   |    |
|---|----|
| IV.3.1 Karakterisasi Produk Komposit Kitosan/AgNP ..... | 47 |
| IV.4 Uji Aktivitas Antibakteri .....                    | 63 |
| BAB V.....  | 68 |
| V.1 Kesimpulan .....                                    | 68 |
| V.2 Saran .....   | 68 |
| DAFTAR PUSTAKA .....                                    | 70 |
| LAMPIRAN.....   | 81 |