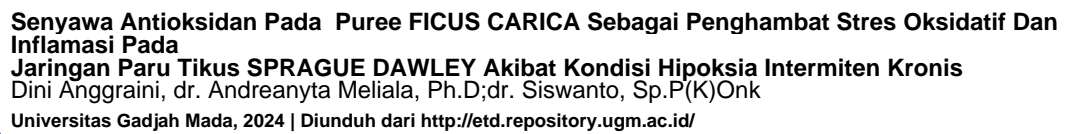


## DAFTAR ISI

|  |      |
|--|------|
| Halaman Judul .....                          | i    |
| Halaman persetujuan.....                     | ii   |
| PERNYATAAN BEBAS PLAGIASI.....               | iii  |
| PRAKATA .....                                | iv   |
| DAFTAR ISI .....                             | vii  |
| DAFTAR GAMBAR .....                          | x    |
| DAFTAR TABEL .....                           | xi   |
| DAFTAR SINGKATAN .....                       | xii  |
| INTISARI .....                               | xiii |
| ABSTRACT .....                               | xiv  |
| BAB I PENDAHULUAN.....                       | 1    |
| I.1. Latar Belakang .....                    | 1    |
| I.2. Rumusan Masalah .....                   | 3    |
| I.3. Tujuan Penelitian .....                 | 4    |
| I.3.1. Tujuan Umum.....                      | 4    |
| I.3.2. Tujuan Khusus .....                   | 4    |
| I.4. Keaslian Penelitian.....                | 5    |
| I.5. Manfaat Penelitian .....                | 8    |
| BAB II TINJAUAN PUSTAKA.....                 | 9    |
| II.1 Tinjauan Pustaka.....                   | 9    |
| II.1.1. Anatomi Paru.....                    | 9    |
| II.1.2. Fisiologi Pernapasan .....           | 14   |
| II.1.3. Hipoksia .....                       | 18   |
| II.1.4. Hipoksia Pada Paru .....             | 22   |
| II.1.5. Stres Oksidatif dan Antioksidan..... | 24   |
| II.1.6. Pangan Fungsional .....              | 31   |
| II.1.7. Ficus carica .....                   | 33   |
| II.2. Landasan Teori.....                    | 36   |
| II.3 Kerangka Teori .....                    | 41   |
| II.4 Kerangka Konsep .....                   | 42   |
| II.5 Hipotesis .....                         | 43   |

|   |    |
|---|----|
| BAB III METODE PENELITIAN .....   | 44 |
| III.1. Jenis dan Rancangan Penelitian .....   | 44 |
| III.2. Variabel Penelitian.....   | 44 |
| III.3. Definisi Operasional.....  | 45 |
| III.4. Alat dan Bahan .....   | 46 |
| III.4.1. Subjek Penelitian .....  | 46 |
| III.4.2. Alat.....  | 47 |
| III.4.3. Bahan .....  | 48 |
| III.5. Jalannya Penelitian.....   | 49 |
| III.5.1. Adaptasi dan Persiapan Subjek Penelitian.....  | 50 |
| III.5.2. Persiapan <i>Puree Ficus carica</i> .....  | 51 |
| III.5.3. Persiapan vitamin E .....  | 52 |
| III.5.4. Induksi hipoksia intermiten kronis .....   | 52 |
| III.5.5. Intervensi pemberian <i>puree Ficus carica</i> dan vitamin E.....                              | 53 |
| III.5.6. Pengumpulan sampel darah .....   | 53 |
| III.5.7. Terminasi dan pengambilan sampel organ.....  | 54 |
| III.5.8. Pemeriksaan Platelet dan Limfosit pada Darah .....   | 54 |
| III.5.9. Pemeriksaan TNF- $\alpha$ homogenat .....  | 55 |
| III.5.10. Pemeriksaan MDA homogenat .....   | 58 |
| III.5.11. Pemeriksaan SOD homogenat .....   | 60 |
| III.5.12. Analisis Hasil .....  | 62 |
| BAB IV HASIL DAN PEMBAHASAN .....   | 64 |
| IV.1. Hasil Penelitian.....   | 64 |
| IV.1.1. Karakteristik Subjek Penelitian .....   | 64 |
| IV.1.2. Stres Oksidatif dan Antioksidan Pada Paru .....   | 64 |
| IV.1.2.1. Kadar MDA Homogenat Paru .....  | 64 |
| IV.1.2.2. Kadar SOD Homogenat paru .....  | 66 |
| IV.1.2.3. Kadar Rasio SOD/MDA Paru .....  | 68 |
| IV.1.3 Inflamasi Paru .....   | 70 |
| IV.1.3.1 Kadar <i>Platelet Lymphocyte Ratio</i> (PLR).....  | 70 |
| IV.1.3.2 Kadar <i>Tumor Factor Necrosis - <math>\alpha</math></i> (TNF- $\alpha$ ) homogenat paru ..... | 72 |
| IV.2. Pembahasan .....  | 74 |

|                                     |    |
|-------------------------------------|----|
| IV.2.1. Stres Oksidatif.....        | 74 |
| IV.2.2. Inflamasi .....             | 78 |
| IV.3. Keterbatasan Penelitian ..... | 82 |
| BAB V KESIMPULAN .....              | 83 |
| V.1. Kesimpulan .....               | 83 |
| V.2.Saran .....                     | 83 |
| DAFTAR PUSTAKA .....                | 84 |
| LAMPIRAN.....                       | 91 |



## DAFTAR GAMBAR

|   |    |
|---|----|
| Gambar 1. Anatomi paru .....  | 10 |
| Gambar 2. Analogi hubungan paru dan kantong pleura .....  | 12 |
| Gambar 3. Gambaran anterior paru dan pleura di toraks .....   | 13 |
| Gambar 4. Struktur komponen alveolus .....  | 14 |
| Gambar 5. Respirasi selular dan eksternal .....   | 16 |
| Gambar 6. Tekanan penting yang ada di paru.....   | 17 |
| Gambar 7. Ficus carica (buah ara) .....   | 33 |
| Gambar 8. Kerangka Teori.....   | 41 |
| Gambar 9. Kerangka Konsep .....   | 42 |
| Gambar 10. Skema Penelitian .....   | 49 |
| Gambar 11. Perbandingan rerata kadar MDA homogenat paru antarkelompok ...                           | 65 |
| Gambar 12. Perbandingan rerata kadar SOD homogenat paru antarkelompok<br>penelitian .....           | 67 |
| Gambar 13. Perbandingan rerata kadar SOD/MDA homogenat paru<br>antarkelompok penelitian .....       | 69 |
| Gambar 14. Perbandingan rerata kadar PLR <i>post-test</i> kelompok penelitian .....                 | 71 |
| Gambar 15. Perbandingan rerata kadar TNF- $\alpha$ homogenat paru antarkelompok<br>penelitian ..... | 73 |

## DAFTAR TABEL

|   |    |
|---|----|
| Tabel 1. Nutrisi yang terkandung didalam buah <i>Ficus carica</i> .....                                 | 35 |
| Tabel 2. Kelompok Penelitian .....  | 51 |
| Tabel 3. Data rerata kadar MDA jaringan paru antarkelompok penelitian .....                             | 65 |
| Tabel 4. Data rerata kadar SOD homogenat paru antarkelompok penelitian.....                             | 66 |
| Tabel 5. Data rerata rasio SOD/MDA homogenat paru antarkelompok penelitian.....                         | 68 |
| Tabel 6. Data rerata kadar PLR ( <i>Platelet Lymphocyte Ratio</i> ) darah antarkelompok penelitian..... | 71 |
| Tabel 7. Data rerata kadar TNF- $\alpha$ homogenat paru antarkelompok penelitian.....                   | 73 |

## DAFTAR SINGKATAN

|                |   |
|----------------|---|
| 4-HNE          | <i>4-Hidroksinonenal</i>                          |
| FIH            | <i>Factors inhibiting HIF-<math>\alpha</math></i> |
| HIF            | <i>Hypoxia-inducible factor</i>                   |
| HIK            | Hipoksia Intermiten Kronis                        |
| PFC            | <i>Puree Ficus carica</i>                         |
| MDA            | <i>Malondialdehyde</i>                            |
| NF- $\kappa$ B | <i>Nuclear factor-<math>\kappa</math>B</i>        |
| TNF- $\alpha$  | <i>Tumor Necrosis Factor- <math>\alpha</math></i> |
| PHD            | <i>Prolyl-4-hydroxylases</i>                      |
| ROS            | <i>Reactive O<sub>2</sub> species</i>             |
| SD             | <i>Sprague Dawley</i>                             |
| SOD            | <i>Superoxide dismutase</i>                       |
| VEGF           | <i>Vascular endothelial growth factor</i>         |
| mTOR           | <i>Mammalian target of rapamycin</i>              |
| PUFA           | <i>Polyunsaturated fatty acid</i>                 |
| CAT            | <i>Catalase</i>                                   |
| TLR 4          | <i>Toll-like receptor 4</i>                       |
| IL-6           | <i>Interleukin-6</i>                              |
| iNOS           | <i>Inducible nitric oxide synthase</i>            |
| NEP            | <i>Neprilysin</i>                                 |
| PLR            | <i>Platelet Lymphocyte Ratio</i>                  |