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KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
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**REKOMENDASI PERSETUJUAN ETIK**

Nomor : 672A/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 18 Oktober 2021

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

| | | | |
|---|---|---|---|
| No Protokol | UH21090549 | No Sponsor Protokol | |
| Peneliti Utama | **dr. Ahmad Taufik, SpOT** | Sponsor | |
| Judul Peneliti | REGENERASI CACAT TULANG RAWAN (CARTILAGE DEFECT) DENGAN KOMBINASI MIKROFRAKTUR DAN PENCANGKOKAN SYNOVIUM - PLASMA RICH FIBRIN (S-PRF) PADA SENDI LUTUT KELINCI | | |
| No Versi Protokol | **1** | Tanggal Versi | **8 September 2021** |
| No Versi PSP | | Tanggal Versi | |
| Tempat Penelitian | Laboratorium FKUH Makassar, Laboratorium Penelitian FK Unram dan Lab Pusat Unggulan Penelitian RS Unram Mataram | | |
| Jenis Review | ☐ Exempted<br>☒ Expedited<br>☐ Fullboard Tanggal | Masa Berlaku **18 Oktober 2021** sampai **18 Oktober 2022** | Frekuensi review lanjutan |
| Ketua KEP Universitas Hasanuddin | Nama **Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)** | Tanda tangan | |
| Sekretaris KEP Universitas Hasanuddin | Nama **dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)** | Tanda tangan | |

Kewajiban Peneliti Utama:

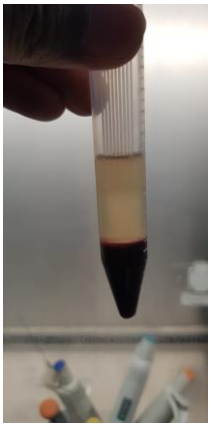
- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

**Lampiran 2**

## DOKUMENTASI PENELITIAN

1. Pemeliharaan Kelinci

2. Perlakuan hewan coba kelinci



3. Pembunuhan hewan coba kelinci

4. Hasil penelitian


A1
A2
A10
A6
A7
B11
B9
B1
B7
B2
B8


C3
C7
C4
C5
C6
C8

**Lampiran 3.**

**Dokumentasi Pemeriksaan ELISA untuk Il-6 dan TGF-b**


1. Rabbit IL6 & TGFB1 ELISA Ki


2. Rabbit IL6 ELISA Kit Cat.No. LS-F37017 components


3. Rabbit TGFB1 ELISA Kit Cat. No. LS-F5129 Components

4. Add 100µL standard or sample to each well.

5. Incubate for 1 hour at 37℃

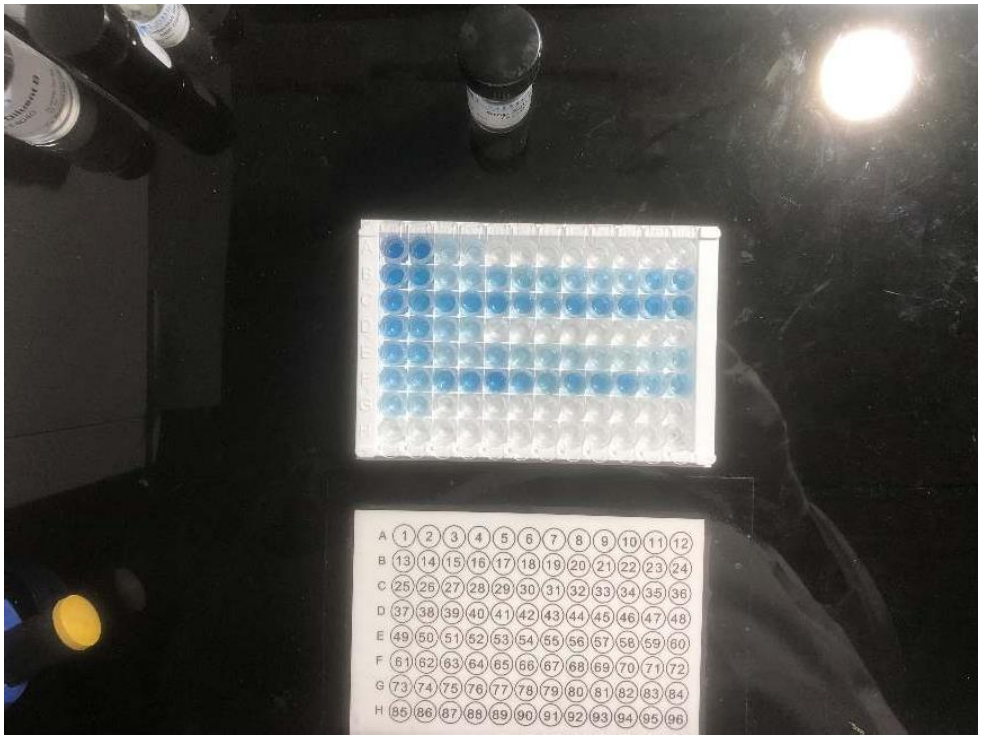
6. Remove the liquid. Add 100μL Detection Reagen A. Incubate for 1 hour at37℃


7. Aspirate and wash 3 times

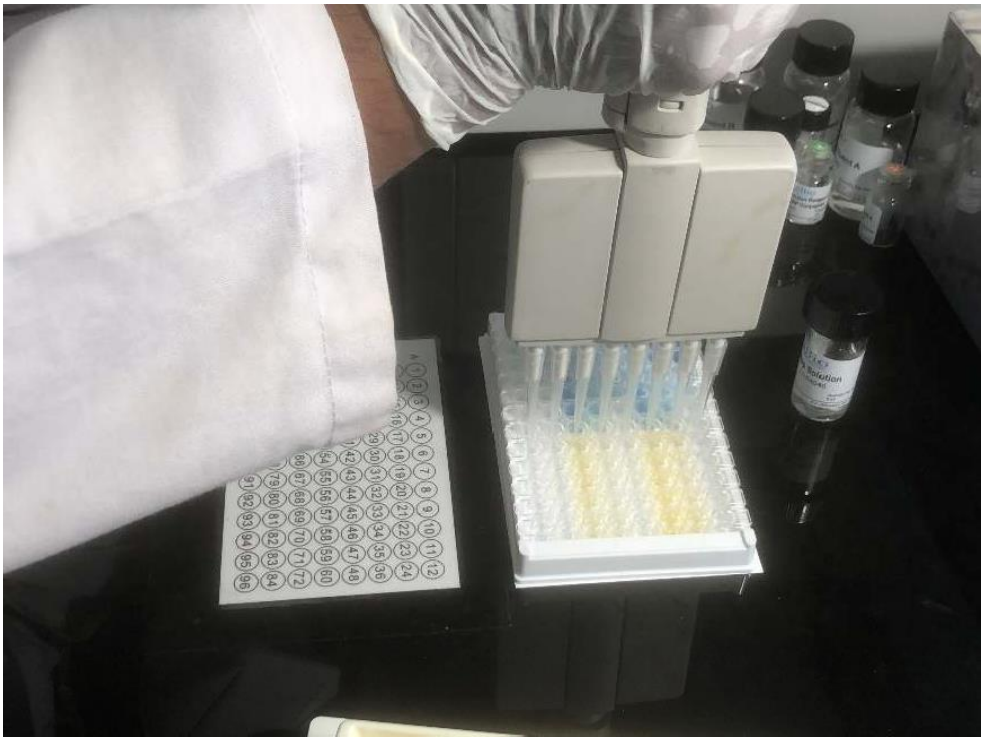

8. Add 100µL Detection Reagen B and Incubate for 30 min at 37℃

9. Aspirate and wash 5 times

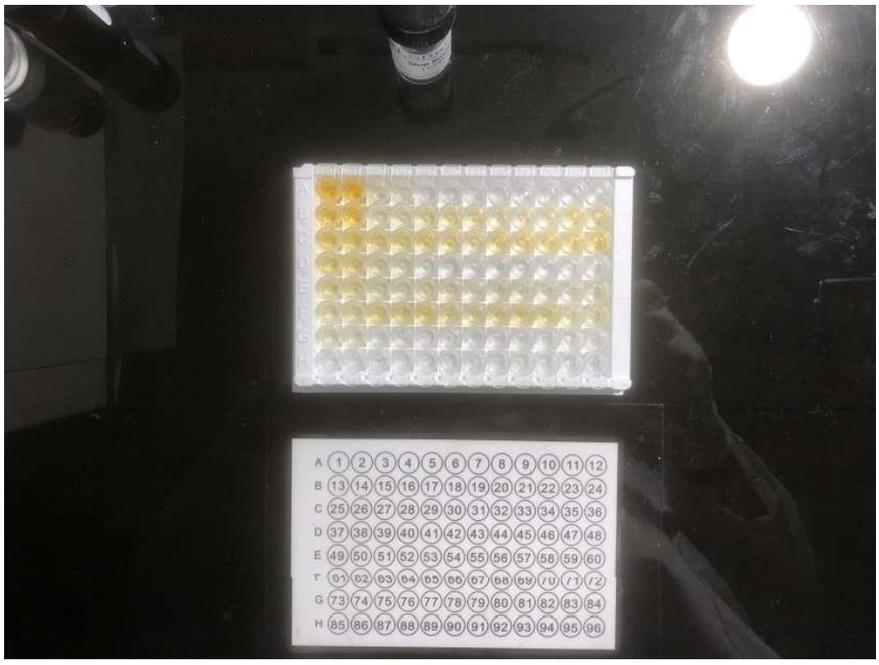
10. Add 90µL TMB Substrate Reagent. Incubate for 10-20 min at 37℃



11. Plate after 15min substrate



12. Add 50µL Stop Solution. Blue color to yellow color



13. Plate after stop reaction

14. Read at 45nm Immediately and calculation of results

Lampiran 4.

**Dokumentasi pemeriksaan RT-PCR untuk Agrecan dan Kolagen Tipe 2**


1. Primer RTPCR Gen Agrecan / Collagen


2. PCR Master Mix SYBR Green

3. Pembuatan PCR Mix

4. Nanodrop

5. Memasukkan template ke dalam PCR Mix

6. Mesin PCR


7. Analisa hasil PCR

**Lampiran 7.**

**Analisa Data SPSS untuk RT-PCR dan ELISA**

## 7.1. Data awal Hasil Pemeriksaan RT-PCR Dan ELISA

| KELOMPOK | No. Sampel | HASIL RTPCR (Fold Gene Expression) | | HASIL ELISA (pg/ml) | |
|---|---|---|---|---|---|
| | | Aggrecan | Collagen | TGFB1 | IL-6 |
| CARTILAGE DEFECT DENGAN PERLAKUAN MIKROFRACTURE | A-1 | 1.609 | 1.881 | 581.810 | 630.958 |
| | A-2 | 2.152 | 2.211 | 644.766 | 593.679 |
| | A-4 | 1.289 | 2.284 | 506.262 | 653.326 |
| | A-6 | 0.905 | 1.961 | 619.583 | 660.781 |
| | A-7 | 1.802 | 1.792 | 661.555 | 668.237 |
| CARTILAGE DEFECT DENGAN PERLAKUAN MIKROFRACTURE + PRF-SYNOVIUM | B-1 | 4.668 | 3.510 | 674.146 | 504.209 |
| | B-2 | 4.436 | 3.510 | 699.328 | 459.473 |
| | B-7 | 4.335 | 3.744 | 661.555 | 560.127 |
| | B-8 | 4.073 | 3.736 | 623.781 | 500.481 |
| | B-9 | 4.187 | 3.127 | 686.737 | 575.039 |
| KONTROL CARTILAGE DEFECT | C-3 | 1.044 | 0.871 | 460.093 | 690.605 |
| | C-4 | 0.878 | 1.163 | 481.079 | 739.068 |
| | C-5 | 1.049 | 1.015 | 586.007 | 616.046 |
| | C-6 | 1.245 | 1.116 | 426.517 | 712.972 |
| | C-7 | 0.835 | 0.871 | 434.911 | 657.053 |

## 7. 2. Analisa Data SPSS untuk Agrecan dan Kolagen Tipe 2

### 1. Uji Normalitas Data

**Tests of Normality**

| | Kelompok | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|---|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Agrecan rtPCR | 1 | .148 | 5 | .200* | .993 | 5 | .990 |
| | 2 | .147 | 5 | .200* | .981 | 5 | .941 |
| | 3 | .206 | 5 | .200* | .929 | 5 | .591 |
| Kolagen Tipe 2 rtPCR | 1 | .220 | 5 | .200* | .915 | 5 | .496 |
| | 2 | .276 | 5 | .200* | .859 | 5 | .224 |
| | 3 | .243 | 5 | .200* | .875 | 5 | .287 |

### 2. Analisa hasil dengan Uji ANOVA

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Agrecan rtPCR | 2.784 | 2 | 12 | .102 |
| Kolagen Tipe 2 rtPCR | .611 | 2 | 12 | .559 |

| | | F | Sig. |
|---|---|---|---|
| Agrecan rtPCR | Between Groups | 155.600 | .000 |
| | Within Groups | | |
| | Total | | |
| Kolagen Tipe 2 rtPCR | Between Groups | 190.495 | .000 |
| | Within Groups | | |
| | Total | | |

**Robust Tests of Equality of Means**

| | | Statistic[a] | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Agrecan rtPCR | Brown-Forsythe | 155.600 | 2 | 6.807 | .000 |

| | | | | | |
|---|---|---|---|---|---|
| Kolagen Tipe 2 rtPCR | Brown-Forsythe | 190.495 | 2 | 10.094 | .000 |

a. Asymptotically F distributed.

## Post Hoc Tests

**Multiple Comparisons**

| Dependent Variable | | (I) Kelompok | (J) Kelompok | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower Bound | Upper Bound |
| Agrecan rtPCR | | 1 | 2 | -2788.400* | 202.567 | .000 | -3229.76 | -2347.04 |
| | | | 3 | 541.200* | 202.567 | .020 | 99.84 | 982.56 |
| | | 2 | 1 | 2788.400* | 202.567 | .000 | 2347.04 | 3229.76 |
| | | | 3 | 3329.600* | 202.567 | .000 | 2888.24 | 3770.96 |
| | | 3 | 1 | -541.200* | 202.567 | .020 | -982.56 | -99.84 |
| | | | 2 | -3329.600* | 202.567 | .000 | -3770.96 | -2888.24 |
| | Games-Howell | 1 | 2 | -2788.400* | 237.176 | .000 | -3525.06 | -2051.74 |
| | | | 3 | 541.200 | 225.774 | .132 | -197.98 | 1280.38 |
| | | 2 | 1 | 2788.400* | 237.176 | .000 | 2051.74 | 3525.06 |
| | | | 3 | 3329.600* | 125.991 | .000 | 2961.09 | 3698.11 |
| | | 3 | 1 | -541.200 | 225.774 | .132 | -1280.38 | 197.98 |
| | | | 2 | -3329.600* | 125.991 | .000 | -3698.11 | -2961.09 |
| Kolagen Tipe 2 rtPCR | LSD | 1 | 2 | -1499.600* | 129.795 | .000 | -1782.40 | -1216.80 |
| | | | 3 | 1018.600* | 129.795 | .000 | 735.80 | 1301.40 |
| | | 2 | 1 | 1499.600* | 129.795 | .000 | 1216.80 | 1782.40 |
| | | | 3 | 2518.200* | 129.795 | .000 | 2235.40 | 2801.00 |
| | | 3 | 1 | -1018.600* | 129.795 | .000 | -1301.40 | -735.80 |
| | | | 2 | -2518.200* | 129.795 | .000 | -2801.00 | -2235.40 |
| | Games-Howell | 1 | 2 | -1499.600* | 146.991 | .000 | -1921.98 | -1077.22 |
| | | | 3 | 1018.600* | 112.709 | .000 | 684.09 | 1353.11 |
| | | 2 | 1 | 1499.600* | 146.991 | .000 | 1077.22 | 1921.98 |
| | | | 3 | 2518.200* | 127.399 | .000 | 2130.05 | 2906.35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 3 | 1 | -1018.600* | 112.709 | .000 | -1353.11 | -684.09 |
| | | 2 | -2518.200* | 127.399 | .000 | -2906.35 | -2130.05 |

## 7. 3. Analisa Data SPSS untuk Agrecan dan Kolagen Tipe 2

1. Uji normalitas data
2. Uji SPSS dengan ANOVA

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| TGFb ELISA | 1.029 | 2 | 12 | .387 |
| IL-6 ELISA | .832 | 2 | 12 | .459 |

| | | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| TGFb ELISA | Between Groups | 2 | 47117.867 | 16.054 | .000 |
| | Within Groups | 12 | 2934.933 | | |
| | Total | 14 | | | |
| IL-6 ELISA | Between Groups | 2 | 35906.400 | 19.719 | .000 |
| | Within Groups | 12 | 1820.900 | | |
| | Total | 14 | | | |

**Robust Tests of Equality of Means**

| | | Statistic[a] | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| TGFb ELISA | Brown-Forsythe | 16.054 | 2 | 9.560 | .001 |
| IL-6 ELISA | Brown-Forsythe | 19.719 | 2 | 10.677 | .000 |

a. Asymptotically F distributed.

## Post Hoc Tests

**Multiple Comparisons**

| Dependent Variable | | (I) Kelompok | (J) Kelompok | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower Bound | Upper Bound |
| TGFb ELISA | LSD | 1 | 2 | -66.400 | 34.263 | .077 | -141.05 | 8.25 |
| | | | 3 | 124.800* | 34.263 | .003 | 50.15 | 199.45 |
| | | 2 | 1 | 66.400 | 34.263 | .077 | -8.25 | 141.05 |
| | | | 3 | 191.200* | 34.263 | .000 | 116.55 | 265.85 |
| | | 3 | 1 | -124.800* | 34.263 | .003 | -199.45 | -50.15 |
| | | | 2 | -191.200* | 34.263 | .000 | -265.85 | -116.55 |
| | Games-Howell | 1 | 2 | -66.400 | 30.483 | .158 | -161.36 | 28.56 |
| | | | 3 | 124.800* | 39.891 | .034 | 10.76 | 238.84 |
| | | 2 | 1 | 66.400 | 30.483 | .158 | -28.56 | 161.36 |
| | | | 3 | 191.200* | 31.645 | .003 | 91.88 | 290.52 |
| | | 3 | 1 | -124.800* | 39.891 | .034 | -238.84 | -10.76 |
| | | | 2 | -191.200* | 31.645 | .003 | -290.52 | -91.88 |
| IL-6 ELISA | LSD | 1 | 2 | 121.200* | 26.988 | .001 | 62.40 | 180.00 |
| | | | 3 | -42.000 | 26.988 | .146 | -100.80 | 16.80 |
| | | 2 | 1 | -121.200* | 26.988 | .001 | -180.00 | -62.40 |
| | | | 3 | -163.200* | 26.988 | .000 | -222.00 | -104.40 |
| | | 3 | 1 | 42.000 | 26.988 | .146 | -16.80 | 100.80 |
| | | | 2 | 163.200* | 26.988 | .000 | 104.40 | 222.00 |
| | Games-Howell | 1 | 2 | 121.200* | 25.159 | .005 | 46.54 | 195.86 |
| | | | 3 | -42.000 | 25.347 | .288 | -117.33 | 33.33 |
| | | 2 | 1 | -121.200* | 25.159 | .005 | -195.86 | -46.54 |
| | | | 3 | -163.200* | 30.160 | .002 | -249.38 | -77.02 |
| | | 3 | 1 | 42.000 | 25.347 | .288 | -33.33 | 117.33 |
| | | | 2 | 163.200* | 30.160 | .002 | 77.02 | 249.38 |

## 7.4. HASIL ANALISA DATA UNTUK MAKROSKOPIK DAN HISTOLOGI

### 7.4.1. Hasil Analisa Data Untuk Makroskopik

#### 1. UJI NORMALITAS DATA

## Kelompok

**Tests of Normality[b]**

| | Kelompok | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|---|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Derajat Repair | 1 | .473 | 5 | .001 | .552 | 5 | .000 |
| | 3 | .473 | 5 | .001 | .552 | 5 | .000 |
| Integrasi Cartilage | 1 | .473 | 5 | .001 | .552 | 5 | .000 |
| | 2 | .367 | 5 | .026 | .684 | 5 | .006 |
| | 3 | .473 | 5 | .001 | .552 | 5 | .000 |
| Penampakan Makros | 1 | .473 | 5 | .001 | .552 | 5 | .000 |
| | 2 | .473 | 5 | .001 | .552 | 5 | .000 |
| | 3 | .367 | 5 | .026 | .684 | 5 | .006 |
| Total Makros | 1 | .367 | 5 | .026 | .684 | 5 | .006 |
| | 2 | .473 | 5 | .001 | .552 | 5 | .000 |
| | 3 | .231 | 5 | .200* | .881 | 5 | .314 |

#### 2. UJI SPSS dengan Uji Kruskal Wallis

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Perbaikan | 3.556 | 2 | 12 | .061 |
| Integrasi | .821 | 2 | 12 | .463 |
| Penampakan | .821 | 2 | 12 | .463 |
| Total Makros | 1.412 | 2 | 12 | .281 |

| | | Mean Square | F | Sig. |
|---|---|---|---|---|
| Perbaikan | Between Groups | 6.067 | 45.500 | .000 |
| | Within Groups | .133 | | |
| | Total | | | |
| Integrasi | Between Groups | 4.067 | 17.429 | .000 |
| | Within Groups | .233 | | |
| | Total | | | |
| Penampakan | Between Groups | 3.467 | 14.857 | .001 |
| | Within Groups | .233 | | |
| | Total | | | |
| Total Makros | Between Groups | 39.467 | 98.667 | .000 |
| | Within Groups | .400 | | |
| | Total | | | |

**Robust Tests of Equality of Means[b]**

| | | Statistic[a] | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Perbaikan | Brown-Forsythe | . | . | . | . |
| Integrasi | Brown-Forsythe | 17.429 | 2 | 11.529 | .000 |
| Penampakan | Brown-Forsythe | 14.857 | 2 | 11.529 | .001 |
| Total Makros | Brown-Forsythe | 98.667 | 2 | 9.290 | .000 |

## Post Hoc Tests

**Multiple Comparisons**

| Dependent Variable | (I) Kelompok | (J) Kelompok | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| Perbaikan LSD | A. CD + Microf | B. CD + MIcrof+PRF | -1.200* | .231 | .000 | -1.70 | -.70 |
| | | C. CD | 1.000* | .231 | .001 | .50 | 1.50 |
| | B. CD + MIcrof+PRF | A. CD + Microf | 1.200* | .231 | .000 | .70 | 1.70 |
| | | C. CD | 2.200* | .231 | .000 | 1.70 | 2.70 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | C. CD | A. CD + Microf | -1.000* | .231 | .001 | -1.50 | -.50 |
| | | | B. CD + Mlcrof+PRF | -2.200* | .231 | .000 | -2.70 | -1.70 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -1.200* | .200 | .009 | -1.91 | -.49 |
| | | | C. CD | 1.000* | .283 | .019 | .19 | 1.81 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 1.200* | .200 | .009 | .49 | 1.91 |
| | | | C. CD | 2.200* | .200 | .001 | 1.49 | 2.91 |
| | | C. CD | A. CD + Microf | -1.000* | .283 | .019 | -1.81 | -.19 |
| | | | B. CD + Mlcrof+PRF | -2.200* | .200 | .001 | -2.91 | -1.49 |
| Integrasi | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -.800* | .306 | .022 | -1.47 | -.13 |
| | | | C. CD | 1.000* | .306 | .007 | .33 | 1.67 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | .800* | .306 | .022 | .13 | 1.47 |
| | | | C. CD | 1.800* | .306 | .000 | 1.13 | 2.47 |
| | | C. CD | A. CD + Microf | -1.000* | .306 | .007 | -1.67 | -.33 |
| | | | B. CD + Mlcrof+PRF | -1.800* | .306 | .000 | -2.47 | -1.13 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -.800 | .316 | .083 | -1.71 | .11 |
| | | | C. CD | 1.000* | .283 | .019 | .19 | 1.81 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | .800 | .316 | .083 | -.11 | 1.71 |
| | | | C. CD | 1.800* | .316 | .001 | .89 | 2.71 |
| | | C. CD | A. CD + Microf | -1.000* | .283 | .019 | -1.81 | -.19 |
| | | | B. CD + Mlcrof+PRF | -1.800* | .316 | .001 | -2.71 | -.89 |
| Penampakan | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -.400 | .306 | .215 | -1.07 | .27 |
| | | | C. CD | 1.200* | .306 | .002 | .53 | 1.87 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | B. CD + Mlcrof+PRF | A. CD + Microf | .400 | .306 | .215 | -.27 | 1.07 |
| | | | C. CD | 1.600* | .306 | .000 | .93 | 2.27 |
| | | C. CD | A. CD + Microf | -1.200* | .306 | .002 | -1.87 | -.53 |
| | | | B. CD + Mlcrof+PRF | -1.600* | .306 | .000 | -2.27 | -.93 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -.400 | .283 | .379 | -1.21 | .41 |
| | | | C. CD | 1.200* | .316 | .014 | .29 | 2.11 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | .400 | .283 | .379 | -.41 | 1.21 |
| | | | C. CD | 1.600* | .316 | .003 | .69 | 2.51 |
| | | C. CD | A. CD + Microf | -1.200* | .316 | .014 | -2.11 | -.29 |
| | | | B. CD + Mlcrof+PRF | -1.600* | .316 | .003 | -2.51 | -.69 |
| Total Makros | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -2.400* | .400 | .000 | -3.27 | -1.53 |
| | | | C. CD | 3.200* | .400 | .000 | 2.33 | 4.07 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 2.400* | .400 | .000 | 1.53 | 3.27 |
| | | | C. CD | 5.600* | .400 | .000 | 4.73 | 6.47 |
| | | C. CD | A. CD + Microf | -3.200* | .400 | .000 | -4.07 | -2.33 |
| | | | B. CD + Mlcrof+PRF | -5.600* | .400 | .000 | -6.47 | -4.73 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -2.400* | .316 | .000 | -3.31 | -1.49 |
| | | | C. CD | 3.200* | .447 | .000 | 1.88 | 4.52 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 2.400* | .316 | .000 | 1.49 | 3.31 |
| | | | C. CD | 5.600* | .424 | .000 | 4.31 | 6.89 |
| | | C. CD | A. CD + Microf | -3.200* | .447 | .000 | -4.52 | -1.88 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | B. CD + MIcrof+PRF | -5.600* | .424 | .000 | -6.89 | -4.31 |

### 7.4.2. Hasil Analisa data untuk Histologik

**Oneway**

**Test of Homogeneity of Variances**

| | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Permukaan | 10.667 | 2 | 12 | .002 |
| Distribusi | 16.000 | 2 | 12 | .000 |
| Subkondral | 96.000 | 2 | 12 | .000 |
| Total Histo | 3.000 | 2 | 12 | .088 |

| | | Mean Square | F | Sig. |
|---|---|---|---|---|
| Permukaan | Between Groups | 22.867 | 137.200 | .000 |
| | Within Groups | .167 | | |
| | Total | | | |
| Distribusi | Between Groups | 8.867 | 14.778 | .001 |
| | Within Groups | .600 | | |
| | Total | | | |
| Subkondral | Between Groups | 31.267 | 312.667 | .000 |
| | Within Groups | .100 | | |
| | Total | | | |
| Total Histo | Between Groups | 169.867 | 283.111 | .000 |
| | Within Groups | .600 | | |
| | Total | | | |

**Robust Tests of Equality of Means[b,c]**

| | | Statistic[a] | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Permukaan | Brown-Forsythe | . | . | . | . |
| Distribusi | Brown-Forsythe | 14.778 | 2 | 8.000 | .002 |

| | | | | | |
|---|---|---|---|---|---|
| Subkondral | Brown-Forsythe | . | . | . | . |
| Total Histo | Brown-Forsythe | 283.111 | 2 | 7.121 | .000 |

## Post Hoc Tests

**Multiple Comparisons**

| Dependent Variable | | (I) Kelompok | (J) Kelompok | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower Bound | Upper Bound |
| Permukaan | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -3.600* | .258 | .000 | -4.16 | -3.04 |
| | | | C. CD | .200 | .258 | .454 | -.36 | .76 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 3.600* | .258 | .000 | 3.04 | 4.16 |
| | | | C. CD | 3.800* | .258 | .000 | 3.24 | 4.36 |
| | | C. CD | A. CD + Microf | -.200 | .258 | .454 | -.76 | .36 |
| | | | B. CD + Mlcrof+PRF | -3.800* | .258 | .000 | -4.36 | -3.24 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -3.600* | .245 | .000 | -4.47 | -2.73 |
| | | | C. CD | .200 | .200 | .615 | -.51 | .91 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 3.600* | .245 | .000 | 2.73 | 4.47 |
| | | | C. CD | 3.800* | .316 | .000 | 2.89 | 4.71 |
| | | C. CD | A. CD + Microf | -.200 | .200 | .615 | -.91 | .51 |
| | | | B. CD + Mlcrof+PRF | -3.800* | .316 | .000 | -4.71 | -2.89 |
| Distribusi | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -1.800* | .490 | .003 | -2.87 | -.73 |
| | | | C. CD | .800 | .490 | .128 | -.27 | 1.87 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 1.800* | .490 | .003 | .73 | 2.87 |
| | | | C. CD | 2.600* | .490 | .000 | 1.53 | 3.67 |
| | | C. CD | A. CD + Microf | -.800 | .490 | .128 | -1.87 | .27 |
| | | | B. CD + Mlcrof+PRF | -2.600* | .490 | .000 | -3.67 | -1.53 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -1.800* | .548 | .039 | -3.49 | -.11 |
| | | | C. CD | .800 | .346 | .112 | -.19 | 1.79 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 1.800* | .548 | .039 | .11 | 3.49 |
| | | | C. CD | 2.600* | .548 | .008 | .91 | 4.29 |
| | | C. CD | A. CD + Microf | -.800 | .346 | .112 | -1.79 | .19 |
| | | | B. CD + Mlcrof+PRF | -2.600* | .548 | .008 | -4.29 | -.91 |
| Subkondral | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -4.000* | .200 | .000 | -4.44 | -3.56 |
| | | | C. CD | .600* | .200 | .011 | .16 | 1.04 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 4.000* | .200 | .000 | 3.56 | 4.44 |
| | | | C. CD | 4.600* | .200 | .000 | 4.16 | 5.04 |
| | | C. CD | A. CD + Microf | -.600* | .200 | .011 | -1.04 | -.16 |
| | | | B. CD + Mlcrof+PRF | -4.600* | .200 | .000 | -5.04 | -4.16 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -4.000 | .000 | . | -4.00 | -4.00 |
| | | | C. CD | .600 | .245 | .143 | -.27 | 1.47 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 4.000 | .000 | . | 4.00 | 4.00 |
| | | | C. CD | 4.600* | .245 | .000 | 3.73 | 5.47 |
| | | C. CD | A. CD + Microf | -.600 | .245 | .143 | -1.47 | .27 |
| | | | B. CD + Mlcrof+PRF | -4.600* | .245 | .000 | -5.47 | -3.73 |
| Total Histo | LSD | A. CD + Microf | B. CD + Mlcrof+PRF | -9.200* | .490 | .000 | -10.27 | -8.13 |
| | | | C. CD | 1.600* | .490 | .007 | .53 | 2.67 |
| | | B. CD + Mlcrof+PRF | A. CD + Microf | 9.200* | .490 | .000 | 8.13 | 10.27 |
| | | | C. CD | 10.800* | .490 | .000 | 9.73 | 11.87 |
| | | C. CD | A. CD + Microf | -1.600* | .490 | .007 | -2.67 | -.53 |
| | | | B. CD + Mlcrof+PRF | -10.800* | .490 | .000 | -11.87 | -9.73 |
| | Games-Howell | A. CD + Microf | B. CD + Mlcrof+PRF | -9.200* | .566 | .000 | -10.96 | -7.44 |
| | | | C. CD | 1.600* | .316 | .003 | .69 | 2.51 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | B. CD + Mlcrof+PRF | A. CD + Microf | 9.200* | .566 | .000 | 7.44 | 10.96 |
| | | C. CD | 10.800* | .548 | .000 | 9.04 | 12.56 |
| | C. CD | A. CD + Microf | -1.600* | .316 | .003 | -2.51 | -.69 |
| | | B. CD + Mlcrof+PRF | -10.800* | .548 | .000 | -12.56 | -9.04 |