

LAMPIRAN

Lampiran 1 – Lembar Persetujuan Etik untuk Hewan



LEMBAGA ILMU PENGETAHUAN INDONESIA
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Cibinong, 6 April 2018

Nomor : 865/IPH.1.01/IF.07/IV/2018
Lampiran : -
Perihal : Hasil identifikasi/determinasi Tumbuhan

Kepada Yth.
Bpk./Ibu/Sdr(i). **Chindy Tjandra**
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Dengan hormat,

Bersama ini kami sampaikan hasil identifikasi/determinasi tumbuhan yang Saudara kirimkan ke "Herbarium Bogoriense", Bidang Botani Pusat Penelitian Biologi-LIPI Bogor, adalah sebagai berikut :

| No. | No. Kol. | Jenis | Suku |
|-----|------------|--------------------------|----------|
| 1 | Strawberry | <i>Fragaria vesca</i> L. | Rosaceae |
| 2 | Raspberry | <i>Rubus idaeus</i> L. | Rosaceae |
| 3 | Blackberry | <i>Rubus</i> sp. | Rosaceae |

Demikian, semoga berguna bagi Saudara.

Kepala Bidang Botani
Pusat Penelitian Biologi-LIPI,

Dr. Joeni Setijo Rahajoe
NIP. 196706241993032004

LAMPIRAN 2 - Tanaman Rasberi

Tumbuhan Rasberi

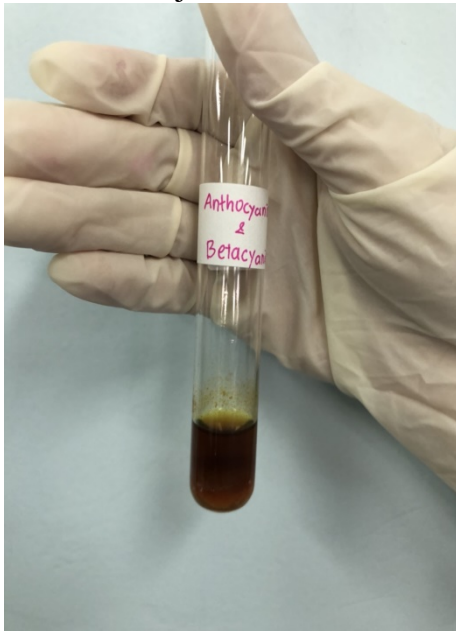


Bagian daun Rasberi yang sudah dikeringkan

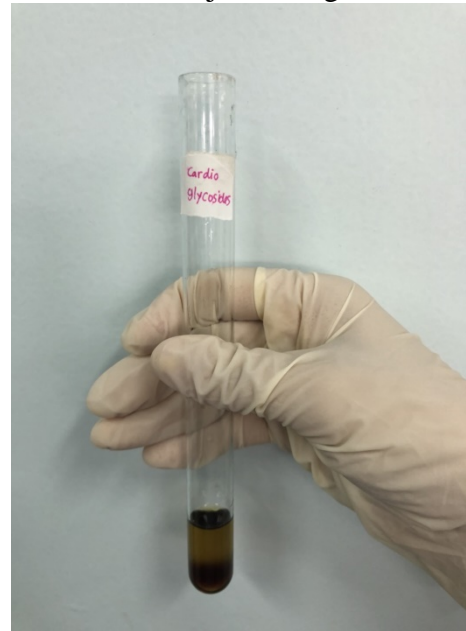


LAMPIRAN 3 - Hasil Uji In Vitro

Gambar 1. Uji Antosianin dan Betasianin



Gambar 2. Uji Kardioglikosida



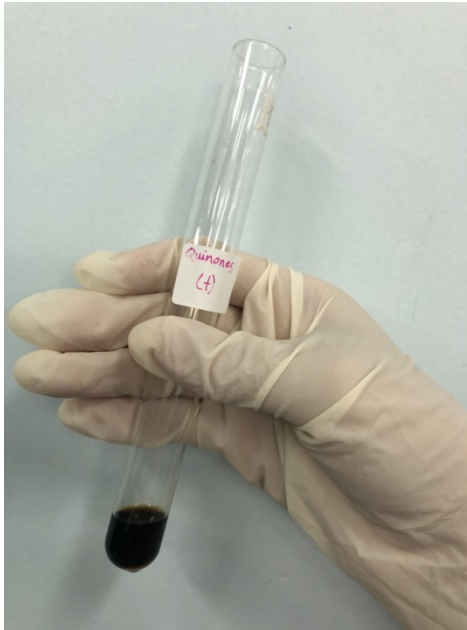
Gambar 3. Uji Koumarins



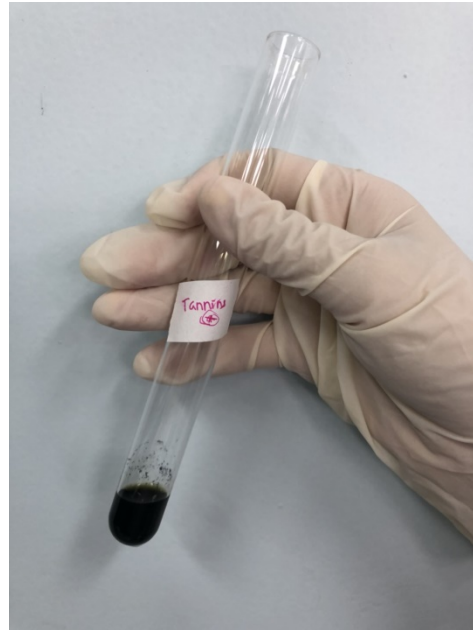
Gambar 4. Uji Glikosida



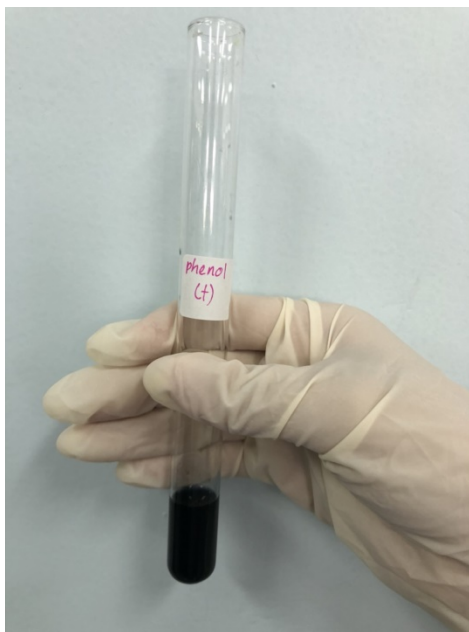
Gambar 5. Uji Kuinon



Gambar 6. Uji Tannin



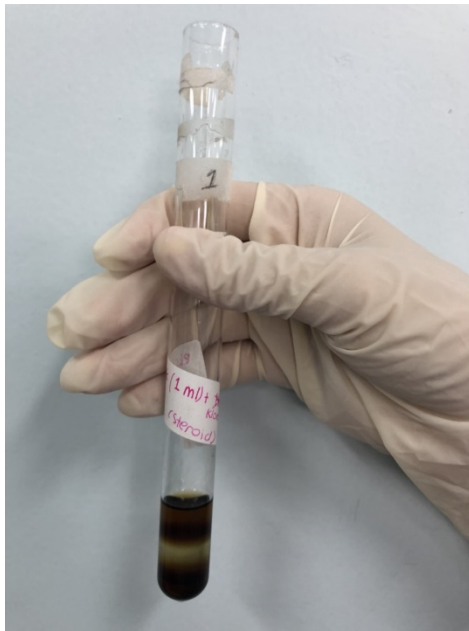
Gambar 7. Uji Phenol



Gambar 8. Uji Flavonoid



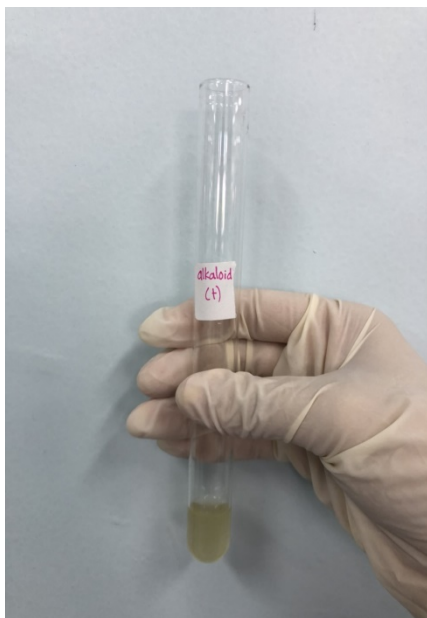
Gambar 9. Uji Steroid



Gambar 10. Uji Terpenoid



Gambar 11. Uji Alkaloid



Gambar 12. Panjang Gelombang dan Absorbansi DPPH



Uji Kadar Alkaloid

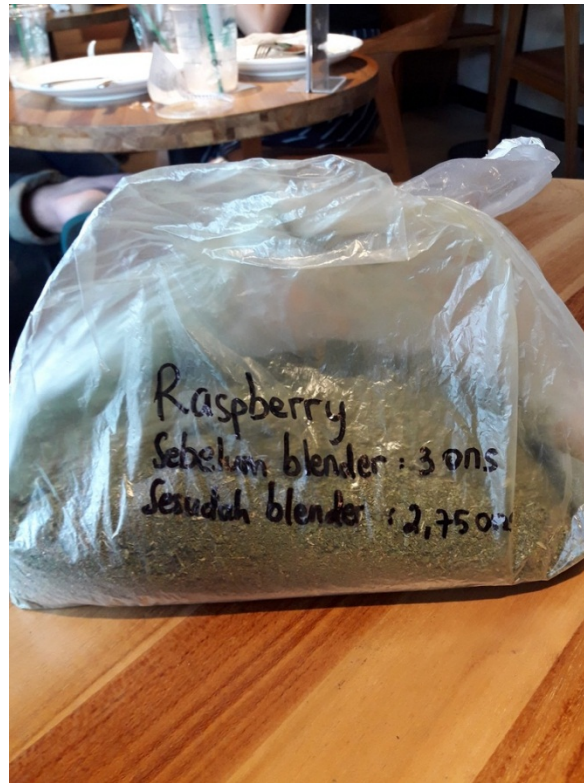


Uji DPPH

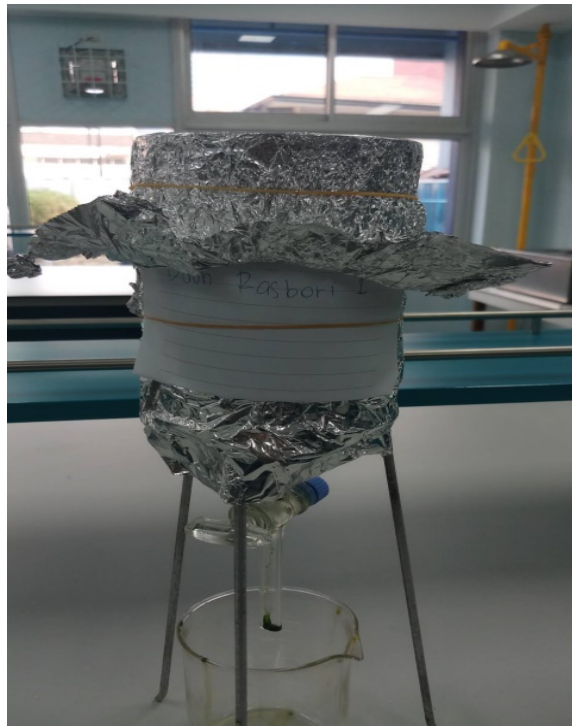


LAMPIRAN 4- Pembuatan Ekstrak Daun Rasberi

Berat daun Rasberi sebelum dan sesudah di blender



Pembuatan ekstrak daun Rasberi dengan teknik maserasi



Penampungan ekstrak daun Rasberi



Ekstrak daun Rasberi dievaporasi dengan *rotary evaporator* untuk mendapatkan ekstrak yang kental



LAMPIRAN 5 - Proses Hipoksia dan Pembedahan Tikus Sprague-Dawley

Proses hipoksia tikus 1,7, dan 14 hari



Organ Jantung yang sudah diambil dan ditandai



LAMPIRAN 6 – Tabel Regresi Linear DPPH Larutan Vitamin C

| Regresi Linear | Nilai |
|----------------------------------|-------------------------|
| Best-fit values | |
| Slope | 6,282 |
| Y-intercept | 19,89 |
| X-intercept | -3,166 |
| 1/slope | 0,1592 |
| Std. Error | |
| Slope | 0,1408 |
| Y-intercept | 0,9342 |
| 95% Confidence Intervals | |
| Slope | 5,834 to 6,730 |
| Y-intercept | 16,92 to 22,86 |
| X-intercept | -3,901 to -2,525 |
| Goodness of Fit | |
| R square | 0,9985 |
| Sy.x | 0,8907 |
| Is slope significantly non-zero? | |
| F | 1990 |
| DFn, DFd | 1, 3 |
| P value | <0,0001 |
| Deviation from zero? | Significant |
| Equation | $Y = 6,282 * X + 19,89$ |
| Data | |
| Number of X values | 5 |
| Maximum number of Y replicates | 1 |
| Total number of values | 5 |
| Number of missing values | 0 |

LAMPIRAN 7 – Tabel Regresi Linear DPPH Ekstrak Daun Rasberi

| Regresi Linear | Nilai |
|----------------------------------|--------------------------|
| Best-fit values | |
| Slope | 0,4447 |
| Y-intercept | 7,184 |
| X-intercept | -16,16 |
| 1/slope | 2,249 |
| Std. Error | |
| Slope | 0,03783 |
| Y-intercept | 2,173 |
| 95% Confidence Intervals | |
| Slope | 0,3243 to 0,5650 |
| Y-intercept | 0,2672 to 14,10 |
| X-intercept | -42,29 to -0,4862 |
| Goodness of Fit | |
| R square | 0,9787 |
| Sy.x | 2,393 |
| Is slope significantly non-zero? | |
| F | 138,1 |
| DFn, DFd | 1, 3 |
| P value | 0,0013 |
| Deviation from zero? | Significant |
| Equation | $Y = 0,4447 * X + 7,184$ |
| Data | |
| Number of X values | 5 |
| Maximum number of Y replicates | 1 |
| Total number of values | 5 |
| Number of missing values | 0 |

LAMPIRAN 8 – Tabel Regresi Linear Kadar Fenolik

| Regresi Linear | Nilai |
|----------------------------------|------------------------------|
| Best-fit values | |
| Slope | 0,0007300 |
| Y-intercept | 0,1188 |
| X-intercept | -162,7 |
| 1/slope | 1370 |
| Std. Error | |
| Slope | 7,332e-005 |
| Y-intercept | 0,03810 |
| 95% Confidence Intervals | |
| Slope | 0,0004967 to 0,0009633 |
| Y-intercept | -0,002447 to 0,2400 |
| X-intercept | -478,9 to 2,564 |
| Goodness of Fit | |
| R square | 0,9706 |
| Sy.x | 0,02319 |
| Is slope significantly non-zero? | |
| F | 99,13 |
| DFn, DFd | 1, 3 |
| P value | 0,0022 |
| Deviation from zero? | Significant |
| Equation | $Y = 0,0007300 * X + 0,1188$ |
| Data | |
| Number of X values | 5 |
| Maximum number of Y replicates | 1 |
| Total number of values | 5 |
| Number of missing values | 0 |

LAMPIRAN 9 – Hasil Uji Fenolik

Konsentrasi kadar fenolik dan Nilai Absorbansi Larutan Standar Tanin

| Konsentrasi ($\mu\text{g/mL}$) | Rata-rata Absorbansi |
|-------------------------------------|-------------------------|
| 300 | 0,289 |
| 400 | 0,453 |
| 500 | 0,539 |
| 600 | 0,674 |
| 700 | 0,716 |

LAMPIRAN 10 – Tabel Regresi Linear Uji Total Alkaloid Konten

| Regresi Linear | Nilai |
|----------------------------------|------------------------------|
| Best-fit values | |
| Slope | 0,001715 |
| Y-intercept | 0,04810 |
| X-intercept | -28,05 |
| 1/slope | 583,1 |
| Std. Error | |
| Slope | 0,0002174 |
| Y-intercept | 0,01442 |
| 95% Confidence Intervals | |
| Slope | 0,001023 to 0,002407 |
| Y-intercept | 0,002209 to 0,09399 |
| X-intercept | -89,38 to -0,9434 |
| Goodness of Fit | |
| R square | 0,9540 |
| Sy.x | 0,01375 |
| Is slope significantly non-zero? | |
| F | 62,24 |
| DFn, DFd | 1, 3 |
| P value | 0,0042 |
| Deviation from zero? | Significant |
| Equation | $Y = 0,001715 * X + 0,04810$ |
| Data | |
| Number of X values | 5 |
| Maximum number of Y replicates | 1 |
| Total number of values | 5 |
| Number of missing values | 0 |

LAMPIRAN 11 – Hasil Uji Total Alkaloid Konten

Konsentrasi kadar Fenolik dan Nilai Absorbansi Larutan Standar *Berberine Chloride*

| Konsentrasi ($\mu\text{g/mL}$) | Rata-rata Absorbansi |
|-------------------------------------|-------------------------|
| 20 | 0,088 |
| 40 | 0,123 |
| 60 | 0,134 |
| 80 | 0,178 |
| 100 | 0,232 |

LAMPIRAN 12 – Tabel Regresi Linear Toksisitas BSLT

| Regresi Linear | Nilai |
|-----------------|---------|
| Best-fit values | |
| Slope | 0,09054 |
| Y-intercept | 13,91 |
| X-intercept | -153,6 |

| | |
|--|---------------------|
| P value | 0.0336 |
| P value summary | * |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=2.744, df=6 |
| How big is the difference? | |
| Mean of column A | 2.290 |
| Mean of column B | 2.023 |
| Difference between means (B - A) ± SEM | -0.2675 ± 0.09750 |
| 95% confidence interval | -0.5061 to -0.02893 |
| R squared (eta squared) | 0.5565 |
| F test to compare variances | |
| F, DFn, Dfd | 1.202, 3, 3 |
| P value | 0.8832 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |
| Sample size, column B | 4 |

2. Kadar GSH Jantung Kontrol Hipoksia 7 hari

| | |
|--|--------------------|
| Table Analyzed | kontrol - organ |
| Column C | hipoksia 7 hari |
| vs. | vs. |
| Column A | normoksia |
| Unpaired t test | |
| P value | 0.0089 |
| P value summary | ** |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=3.808, df=6 |
| How big is the difference? | |
| Mean of column A | 2.290 |
| Mean of column C | 2.000 |
| Difference between means (C - A) ± SEM | -0.2900 ± 0.07616 |
| 95% confidence interval | -0.4764 to -0.1036 |
| R squared (eta squared) | 0.7073 |
| F test to compare variances | |
| F, DFn, Dfd | 2.910, 3, 3 |
| P value | 0.4037 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |

3. Kadar GSH Jantung Kontrol Hipoksia 14 hari

| | |
|--|-------------------|
| Table Analyzed | kontrol - organ |
| Column D | hipoksia 14 hari |
| vs. | vs. |
| Column A | normoksia |
| Unpaired t test | |
| P value | 0.0057 |
| P value summary | ** |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=4.194, df=6 |
| How big is the difference? | |
| Mean of column A | 2.290 |
| Mean of column D | 1.553 |
| Difference between means (D - A) ± SEM | -0.7375 ± 0.1758 |
| 95% confidence interval | -1.168 to -0.3072 |
| R squared (eta squared) | 0.7456 |
| F test to compare variances | |
| F, DFn, Dfd | 6.164, 3, 3 |
| P value | 0.1695 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |
| Sample size, column D | 4 |

4. Kadar GSH Jantung Uji Hipoksia 1 Hari

| | |
|--|----------------------|
| Table Analyzed | kontrol + organ |
| Column B | hipoksia 1 hari |
| vs. | vs. |
| Column A | normoksia |
| Unpaired t test | |
| P value | 0.0483 |
| P value summary | * |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=2.472, df=6 |
| How big is the difference? | |
| Mean of column A | 3.345 |
| Mean of column B | 2.988 |
| Difference between means (B - A) ± SEM | -0.3575 ± 0.1446 |
| 95% confidence interval | -0.7114 to -0.003631 |

| | |
|-------------------------------------|-------------|
| R squared (eta squared) | 0.5046 |
| F test to compare variances | |
| F, DFn, Dfd | 1.818, 3, 3 |
| P value | 0.6358 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |
| Sample size, column B | 4 |

5. Kadar GSH Jantung Uji Hipoksia 7 Hari

| | |
|--|---------------------|
| Table Analyzed | kontrol + organ |
| Column C | hipoksia 7 hari |
| vs. | vs. |
| Column A | normoksia |
| Unpaired t test | |
| P value | 0.0197 |
| P value summary | * |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=3.154, df=6 |
| How big is the difference? | |
| Mean of column A | 3.345 |
| Mean of column C | 2.930 |
| Difference between means (C - A) ± SEM | -0.4150 ± 0.1316 |
| 95% confidence interval | -0.7369 to -0.09308 |
| R squared (eta squared) | 0.6238 |
| F test to compare variances | |
| F, DFn, Dfd | 3.535, 3, 3 |
| P value | 0.3273 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |
| Sample size, column C | 4 |

6. Kadar GSH Jantung Uji Hipoksia 14 Hari

| | |
|--|--------------------|
| Table Analyzed | kontrol + organ |
| Column D | hipoksia 14 hari |
| vs. | vs. |
| Column A | normoksia |
| Unpaired t test | |
| P value | 0.0330 |
| P value summary | * |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| t, df | t=2.757, df=6 |
| How big is the difference? | |
| Mean of column A | 3.345 |
| Mean of column D | 2.795 |
| Difference between means (D - A) ± SEM | -0.5500 ± 0.1995 |
| 95% confidence interval | -1.038 to -0.06194 |
| R squared (eta squared) | 0.5589 |
| F test to compare variances | |
| F, DFn, Dfd | 1.949, 3, 3 |
| P value | 0.5975 |
| P value summary | ns |
| Significantly different (P < 0.05)? | No |
| Data analyzed | |
| Sample size, column A | 4 |
| Sample size, column D | 4 |

7. Perbandingan kadar GSH Darah Kontrol dan Uji

| | |
|-------------------------------------|--------------|
| Table Analyzed | Data 4 |
| Column B | Kontrol + |
| vs. | vs, |
| Column A | Kontrol - |
| Mann Whitney test | |
| P value | 0,0286 |
| Exact or approximate P value? | Exact |
| P value summary | * |
| Significantly different (P < 0.05)? | Yes |
| One- or two-tailed P value? | Two-tailed |
| Sum of ranks in column A,B | 10 , 26 |
| Mann-Whitney U | 0 |
| Difference between medians | |
| Median of column A | 0,05575, n=4 |
| Median of column B | 0,07738, n=4 |
| Difference: Actual | 0,02163 |
| Difference: Hodges-Lehmann | 0,01913 |

8. Korelasi Kadar GSH Darah dan Jantung Uji Dengan Uji Pearson

| | |
|-----------------------------|------------------|
| Pearson r | |
| r | 0.9712 |
| 95% confidence interval | 0.1510 to 0.9994 |
| R squared | 0.9431 |
| P value | |
| P (two-tailed) | 0.0288 |
| P value summary | * |
| Significant? (alpha = 0.05) | Yes |
| Number of XY Pairs | 4 |

9. Korelasi Kadar GSH Darah dan Jantung Kontrol Dengan Uji Pearson

| | |
|-----------------------------|-------------------|
| Pearson r | |
| r | 0.8915 |
| 95% confidence interval | -0.4861 to 0.9977 |
| R squared | 0.7947 |
| P value | |
| P (two-tailed) | 0.1085 |
| P value summary | ns |
| Significant? (alpha = 0.05) | No |
| Number of XY Pairs | 4 |

DAFTAR RIWAYAT HIDUP

A. Data Pribadi

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