

4. Kadar protein NOS2A pada TB paru aktif lebih tinggi dari pada TB laten namun perbedaannya tidak bermakna

SARAN

1. .Diperlukan penelitian lanjutan untuk menilai faktor lain yang dapat mempengaruhi , seperti infeksi, inflamasi, dan tumor pada pasien TB laten dan orang sehat.
2. .Diperlukan pemeriksaan faktor lain dapat mempengaruhi kadar dan ekspresi host genetik, seperti sitokin, kemokin, dll.

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LAMPIRAN 1. DATA SAMPEL TB AKTIF, KONTAK SERUMAH DAN ORANG SEHAT YANG DIREKRUT DALAM PENELITIAN

| Kode Sampel | Kelompok | IGRA | SEX | UMUR | KEL UMR | BMI | STATUS NUTRISI | HUB KELUARGA | NRAMP1 | NOS2 |
|-------------|----------------|---------|-----------|------|---------|-------|----------------|--------------|---------|----------|
| K54 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 41 | 2 | 17.58 | 1 | 1 | 125.27 | 1.78 |
| K55 | KONTAK SERUMAH | POSITIF | PEREMPUA | 28 | 1 | 16.44 | 1 | 2 | 0.44 | 1.83 |
| K62 | KONTAK SERUMAH | POSITIF | PEREMPUA | 37 | 2 | 32.05 | 5 | 3 | 9.16 | 1.53 |
| K64 | KONTAK SERUMAH | POSITIF | PEREMPUA | 23 | 1 | 19.72 | 2 | 3 | 136.28 | 0.55 |
| K65 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 41 | 2 | 21.72 | 2 | 4 | 109.32 | 1.15 |
| K67 | KONTAK SERUMAH | POSITIF | PEREMPUA | 26 | 1 | 22.6 | 2 | 3 | 114.22 | 1.55 |
| K72 | KONTAK SERUMAH | POSITIF | PEREMPUA | 38 | 2 | 21.48 | 2 | 1 | 687.97 | 17.73 |
| K74 | KONTAK SERUMAH | POSITIF | PEREMPUA | 49 | 3 | 24.61 | 3 | 1 | 160.03 | 7.04 |
| K78 | KONTAK SERUMAH | POSITIF | PEREMPUA | 39 | 2 | 21.91 | 2 | 3 | 156.39 | 1.44 |
| K80 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 32 | 2 | 19.03 | 2 | 3 | 179.39 | 1.5 |
| K32 | KONTAK SERUMAH | POSITIF | PEREMPUA | 55 | 3 | 21.78 | 2 | 3 | 206.26 | 4.8 |
| K33 | KONTAK SERUMAH | POSITIF | PEREMPUA | 29 | 1 | 29.33 | 4 | 3 | 102.37 | 2.07 |
| K38 | KONTAK SERUMAH | POSITIF | PEREMPUA | 21 | 1 | 16.05 | 1 | 5 | 141.7 | 2.03 |
| K41 | KONTAK SERUMAH | POSITIF | PEREMPUA | 23 | 1 | 27.55 | 4 | 3 | 120.84 | 0.87 |
| K42 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 45 | 2 | 28.39 | 4 | 3 | 151.07 | 2.26 |
| K44 | KONTAK SERUMAH | POSITIF | PEREMPUA | 39 | 2 | 15.24 | 1 | 3 | 175.33 | 0.88 |
| K47 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 62 | 4 | 21.36 | 2 | 3 | 1318.82 | 32.17 |
| K52 | KONTAK SERUMAH | POSITIF | PEREMPUA | 40 | 2 | 26.16 | 4 | 3 | 220.63 | 1.86 |
| H32 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 38 | 2 | 28.7 | 4 | | 108.85 | 1.57 |
| H33 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 57 | 3 | 24 | 3 | | 434.19 | 3.44 |
| H9 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 55 | 3 | 24.7 | 3 | | 132.83 | 0.94 |
| H13 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 49 | 3 | 27 | 4 | | 160.03 | 1.28 |
| H15 | KONTAK SERUMAH | POSITIF | PEREMPUA | 40 | 2 | 27.4 | 4 | | 120.84 | 1.28 |
| H19 | KONTAK SERUMAH | POSITIF | LAKI-LAKI | 57 | 3 | 30.1 | 5 | | 207.99 | 1.18 |
| H20 | KONTAK SERUMAH | POSITIF | PEREMPUA | 31 | 2 | 18.3 | 1 | | 233.92 | 4.66 |
| H24 | KONTAK SERUMAH | POSITIF | PEREMPUA | 25 | 1 | 22.7 | 2 | | 0.67 | 1.08 |
| H28 | KONTAK SERUMAH | POSITIF | PEREMPUA | 32 | 2 | 23.3 | 3 | | 0.21 | 1.46 |
| H29 | SEHAT | NEGATIF | LAKI-LAKI | 57 | 3 | 23.3 | 3 | 0 | 204.26 | 3.701111 |
| H30 | SEHAT | NEGATIF | LAKI-LAKI | 47 | 3 | 27 | 4 | 0 | 93.93 | 1.47 |
| K57 | SEHAT | NEGATIF | PEREMPUA | 42 | 2 | 20.55 | 2 | 3 | 2.07 | 1.09 |
| K59 | SEHAT | NEGATIF | PEREMPUA | 50 | 3 | 22.37 | 2 | 3 | 0.58 | 6.25 |

| | | | | | | | | | | | |
|------|----------|---------|-----------|----|---|-------|---|---|---|----------|----------|
| K60 | SEHAT | NEGATIF | PEREMPUA | 33 | 2 | 28.89 | 4 | 4 | 4 | 110.81 | 3.65 |
| K61 | SEHAT | NEGATIF | PEREMPUA | 28 | 1 | 27.28 | 4 | 1 | 1 | 8.46 | 4.02 |
| K66 | SEHAT | NEGATIF | PEREMPUA | 41 | 2 | 34.89 | 5 | 4 | 4 | 281.18 | 5.23 |
| K77 | SEHAT | NEGATIF | PEREMPUA | 50 | 3 | 29.52 | 4 | 3 | 3 | 182.84 | 3.71 |
| K39 | SEHAT | NEGATIF | PEREMPUA | 28 | 1 | 31.96 | 5 | 1 | 1 | 160.54 | 1.32 |
| K40 | SEHAT | NEGATIF | PEREMPUA | 44 | 2 | 24.32 | 3 | 2 | 2 | 128.73 | 0.76 |
| K45 | SEHAT | NEGATIF | PEREMPUA | 55 | 3 | 17.19 | 1 | 4 | 4 | 580.77 | 15.19 |
| K46 | SEHAT | NEGATIF | LAKI-LAKI | 47 | 3 | 25.71 | 4 | 5 | 5 | 150.7 | 1.5 |
| K48 | SEHAT | NEGATIF | PEREMPUA | 49 | 3 | 20.4 | 2 | 5 | 5 | 156.86 | 1.33 |
| K49 | SEHAT | NEGATIF | PEREMPUA | 18 | 1 | 23.24 | 3 | 4 | 4 | 15.04 | 2.75 |
| H31 | SEHAT | NEGATIF | LAKI-LAKI | 43 | 2 | 27 | 4 | 4 | 4 | 0.81 | 0.96 |
| H34 | SEHAT | NEGATIF | PEREMPUA | 21 | 1 | 24.6 | 3 | 4 | 4 | 0.86 | 1.62 |
| H5 | SEHAT | NEGATIF | LAKI-LAKI | 65 | 4 | 25.4 | 4 | 4 | 4 | 106.47 | 1.08 |
| H6 | SEHAT | NEGATIF | LAKI-LAKI | 55 | 3 | 25.3 | 0 | 4 | 4 | 140.06 | 0.61 |
| H7 | SEHAT | NEGATIF | LAKI-LAKI | 52 | 3 | 25.3 | 4 | 4 | 4 | 101.11 | 0.64 |
| H8 | SEHAT | NEGATIF | PEREMPUA | 61 | 4 | 17.5 | 1 | 4 | 4 | 180.83 | 1.57 |
| H10 | SEHAT | NEGATIF | LAKI-LAKI | 51 | 3 | 28.6 | 4 | 4 | 4 | 239.01 | 1.14 |
| H11 | SEHAT | NEGATIF | LAKI-LAKI | 42 | 2 | 20.2 | 2 | 2 | 2 | 176.26 | 3.32 |
| H12 | SEHAT | NEGATIF | PEREMPUA | 57 | 3 | 24.8 | 3 | 3 | 3 | 225.99 | 3.21 |
| H14 | SEHAT | NEGATIF | LAKI-LAKI | 33 | 2 | 29.1 | 4 | 4 | 4 | 106.85 | 2.38 |
| H16 | SEHAT | NEGATIF | LAKI-LAKI | 53 | 3 | 20 | 2 | 2 | 2 | 0.77 | 1.62 |
| H17 | SEHAT | NEGATIF | PEREMPUA | 52 | 3 | 23.5 | 3 | 3 | 3 | 214.66 | 1.68 |
| H18 | SEHAT | NEGATIF | PEREMPUA | 39 | 2 | 30.6 | 5 | 5 | 5 | 172.62 | 0.63 |
| H21 | SEHAT | NEGATIF | PEREMPUA | 33 | 2 | 23.1 | 3 | 3 | 3 | 134.79 | 1.29 |
| H22 | SEHAT | NEGATIF | PEREMPUA | 29 | 1 | 21.4 | 2 | 2 | 2 | 150.65 | 1.19 |
| H23 | SEHAT | NEGATIF | PEREMPUA | 34 | 2 | 27.4 | 4 | 4 | 4 | 1288.26 | 24.39 |
| H25 | SEHAT | NEGATIF | PEREMPUA | 53 | 3 | 27.1 | 4 | 4 | 4 | 136.42 | 1.41 |
| H26 | SEHAT | NEGATIF | PEREMPUA | 35 | 2 | 26.3 | 4 | 4 | 4 | 0.72 | 1.92 |
| H27 | SEHAT | NEGATIF | PEREMPUA | 31 | 2 | 23.6 | 3 | 3 | 3 | 133.67 | 3.08 |
| T175 | TB AKTIF | N/A | PEREMPUA | 60 | 3 | 24 | 3 | 3 | 3 | 163.1415 | 3.175455 |
| T65 | TB AKTIF | N/A | LAKI-LAKI | 39 | 2 | 16.5 | 1 | 1 | 1 | 222.21 | 20.28 |
| T66 | TB AKTIF | N/A | LAKI-LAKI | 57 | 3 | 18.8 | 2 | 2 | 2 | 140.53 | 1.46 |
| | | | | | | | | | | 110.25 | 2.47 |

| | | | | | | | | | |
|------|----------|-----|-----------|----|---|-------|---|---------|-------|
| T67 | TB AKTIF | N/A | LAKI-LAKI | 24 | 1 | 13.3 | 1 | 404.06 | 16 |
| T69 | TB AKTIF | N/A | PEREMPUA | 54 | 3 | 20.7 | 2 | 529.31 | 0.18 |
| T75 | TB AKTIF | N/A | PEREMPUA | 23 | 1 | 13.2 | 1 | 144.31 | 2.03 |
| T76 | TB AKTIF | N/A | PEREMPUA | 35 | 2 | 17.8 | 1 | 144.26 | 1.09 |
| T77 | TB AKTIF | N/A | PEREMPUA | 17 | 1 | 15.5 | 1 | 141.98 | 1.08 |
| T168 | TB AKTIF | N/A | LAKI-LAKI | 45 | 2 | 18.52 | 2 | 75.13 | 1.49 |
| T177 | TB AKTIF | N/A | PEREMPUA | 49 | 3 | 22.21 | 2 | 696.23 | 17.55 |
| T189 | TB AKTIF | N/A | LAKI-LAKI | 32 | 2 | 15.23 | 1 | 168.94 | 3.17 |
| T190 | TB AKTIF | N/A | LAKI-LAKI | 47 | 3 | 16.8 | 1 | 189.56 | 2.58 |
| T171 | TB AKTIF | N/A | PEREMPUA | 45 | 2 | 16.87 | 1 | 1323.25 | 53.18 |
| T178 | TB AKTIF | N/A | LAKI-LAKI | 29 | 1 | 23.84 | 3 | 110.39 | 0.61 |
| T184 | TB AKTIF | N/A | LAKI-LAKI | 46 | 3 | 22.23 | 2 | 85.81 | 1.59 |
| T173 | TB AKTIF | N/A | LAKI-LAKI | 24 | 1 | 17.85 | 1 | 100.92 | 1 |
| T174 | TB AKTIF | N/A | LAKI-LAKI | 53 | 3 | 13.15 | 1 | 115.24 | 1.49 |
| T164 | TB AKTIF | N/A | LAKI-LAKI | 61 | 4 | 0 | 0 | 207.61 | 1.08 |
| T159 | TB AKTIF | N/A | PEREMPUA | 41 | 2 | 25.11 | 4 | 118.04 | 1.88 |
| T52 | TB AKTIF | N/A | PEREMPUA | 46 | 3 | 21.33 | 2 | 101.76 | 2.29 |
| T53 | TB AKTIF | N/A | PEREMPUA | 38 | 2 | 19.04 | 2 | 159.94 | 0.76 |
| T54 | TB AKTIF | N/A | LAKI-LAKI | 47 | 3 | 15.05 | 1 | 222.87 | 4.39 |
| T55 | TB AKTIF | N/A | LAKI-LAKI | 23 | 1 | 20.44 | 2 | 7.48 | 1.24 |
| T56 | TB AKTIF | N/A | LAKI-LAKI | 36 | 2 | 14.17 | 1 | 1413.89 | 55.23 |
| T58 | TB AKTIF | N/A | PEREMPUA | 33 | 2 | 14.57 | 1 | 131.76 | 1.26 |
| T59 | TB AKTIF | N/A | LAKI-LAKI | 26 | 1 | 14.57 | 1 | 7.86 | 1.08 |
| T60 | TB AKTIF | N/A | LAKI-LAKI | 54 | 3 | 19.1 | 2 | 107.69 | 3.03 |
| T61 | TB AKTIF | N/A | PEREMPUA | 55 | 3 | 20.89 | 2 | 66.45 | 0.17 |
| T62 | TB AKTIF | N/A | LAKI-LAKI | 30 | 2 | 23.88 | 3 | 0.44 | 0.99 |
| T64 | TB AKTIF | N/A | PEREMPUA | 64 | 4 | 18.31 | 1 | 540.93 | 13.71 |

259.6367 7.145333

LAMPIRAN 2. KUISIONER

KUISIONER AWAL

(Hanya untuk pasien yang pernah berobat karena sakit TBC/ Bronkhitis/)

LAMPIRAN 2. KUISIONER

KUISIONER

Petunjuk Pengisian

1. Isilah titik-titik di bawah ini dan berilah tanda checklist (√) pada salah satu tanda sesuai dengan jawaban yang menurut Anda benar
2. Bila ada yang kurang dimengerti oleh Bapak/ Ibu, boleh dipertanyakan pada peneliti.

A. DATA UMUM (diisi oleh peneliti)

| | | |
|----|--------------------|--|
| A1 | Kode | |
| A2 | Tanggal Penelitian | |
| A3 | No Rekam Medik | |
| A4 | Pewawancara | |
| A5 | Tempat Wawancara | |

B. DATA DEMOGRAFI RESPONDEN

| | | |
|----|-------------------|---|
| B1 | Nama Pasien | |
| B1 | Jenis Kelamin | <input type="checkbox"/> Laki-laki <input type="checkbox"/> Perempuan |
| B3 | Umur | tahun |
| B4 | Alamat | |
| B5 | Telepon | |
| B6 | Status perkawinan | <input type="checkbox"/> Belum kawin <input type="checkbox"/> Kawin <input type="checkbox"/> Janda <input type="checkbox"/> Duda |
| B7 | Berat Badan | kg |
| B8 | Tinggi Badan | cm |

C. RIWAYAT PENYAKIT SEBELUMNYA

| | | |
|----|--|--|
| C1 | Sudah berapa kali Anda menderita TBC? | <input type="checkbox"/> 1 kali <input type="checkbox"/> 2 kali <input type="checkbox"/> > 2 kali |
| C2 | Berapa lama Anda menderita TBC saat itu? | bulan/ tahun |
| C3 | Gejala – gejala saat itu yang Anda rasakan | <p>a. Gejala utama :</p> <p>Lamanya dirasakan :</p> <p>b. Gejala lain :</p> <p><input type="checkbox"/> Berkeringat pada malam hari, lamanya:</p> <p><input type="checkbox"/> Demam, lamanya:</p> <p><input type="checkbox"/> Berat badan menurun, lamanya:</p> <p><input type="checkbox"/> Nyeri dada, lamanya:</p> <p><input type="checkbox"/> Sesak, lamanya:</p> <p><input type="checkbox"/> Batuk darah, lamanya:</p> <p><input type="checkbox"/> Mengeluarkan lendir warna hijau, Lamanya:</p> <p><input type="checkbox"/> Nafsu makan menurun, lamanya:</p> |

D. RIWAYAT PENYAKIT SAAT INI

| | | |
|----|--|--|
| D1 | Gejala-gejala yang Anda rasakan saat ini | <p>a. Gejala utama :</p> <p>Lamanya dirasakan :</p> <p>b. Gejala lain :</p> <p><input type="checkbox"/> Berkeringat pada malam hari, lamanya:</p> <p><input type="checkbox"/> Demam, lamanya:</p> <p><input type="checkbox"/> Berat badan menurun, lamanya:</p> <p><input type="checkbox"/> Nyeri dada, lamanya:</p> <p><input type="checkbox"/> Sesak, lamanya:</p> <p><input type="checkbox"/> Batuk darah, lamanya:</p> <p><input type="checkbox"/> Mengeluarkan lendir warna hijau, Lamanya:</p> <p><input type="checkbox"/> Nafsu makan menurun, lamanya:</p> |
|----|--|--|

E.FAKTOR-FAKTOR RESIKO

| | | |
|----|-------------------------------------|---|
| E1 | Riwayat penggunaan narkoba | <p>a. Apakah Anda pernah menggunakan narkoba sebelumnya?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>b. Jika Ya, apa nama obatnya?</p> <p>.....</p> <p>c. Cara menggunakan</p> <p><input type="checkbox"/> Diminum <input type="checkbox"/> Dihisap <input type="checkbox"/> Disuntik</p> <p>d. Mulai menggunakan sejak tahun:</p> <p>e. Berapa kali menggunakan dalam seminggu:</p> <p>f. Masih menggunakan?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>g. Jika tidak, sudah berhenti sejak tahun:</p> <p>.....</p> |
| E2 | Riwayat minum alkohol | <p>a. Apakah Anda pernah mengkonsumsi alkohol?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>b. Jika Ya, Nama minuman:</p> <p>.....</p> <p>c. Mulai minum sejak tahun:</p> <p>d. Berapa kali dalam seminggu: kali</p> <p>e. Sekali minum gelas/ botol</p> <p>f. Apakah sekarang Anda masih minum alkohol?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>g. Jika tidak, Sudah berhenti sejak tahun:</p> |
| E3 | Riwayat merokok | <p>a. Apakah Anda pernah merokok?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>b. Jika Ya, mulai merokok sejak tahun:</p> <p>c. Jumlah rokok sehari: batang</p> <p>d. Apakah saat ini Anda masih merokok?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak</p> <p>e. Jika tidak, sudah berhenti sejak tahun:</p> |
| E4 | Riwayat kontak dengan penderita TBC | <p>a. Apakah sebelumnya Anda pernah ada kontak dengan penderita TB?</p> <p><input type="checkbox"/> Ya <input type="checkbox"/> Tidak <input type="checkbox"/> Tidak tahu</p> <p>Jika ya, dengan siapa?</p> |

| | | |
|----|---------------------------|---|
| | | <input type="checkbox"/> Orang satu rumah <input type="checkbox"/> Teman kerja <input type="checkbox"/> Tetangga <input type="checkbox"/> Teman <input type="checkbox"/> Pasien rumah sakit b. Apakah sebelumnya Anda pernah ada kontak dengan penderita Bronkhitis? <input type="checkbox"/> Ya <input type="checkbox"/> Tidak <input type="checkbox"/> Tidak tahu Jika ya, dengan siapa? <input type="checkbox"/> Orang satu rumah <input type="checkbox"/> Teman kerja <input type="checkbox"/> Tetangga <input type="checkbox"/> Teman <input type="checkbox"/> Pasien rumah sakit c. Apakah sebelumnya Anda pernah ada kontak dengan penderita batuk lama? <input type="checkbox"/> Ya <input type="checkbox"/> Tidak <input type="checkbox"/> Tidak tahu Jika ya, dengan siapa? <input type="checkbox"/> Orang satu rumah <input type="checkbox"/> Teman kerja <input type="checkbox"/> Tetangga <input type="checkbox"/> Teman <input type="checkbox"/> Pasien rumah sakit |
| E5 | Riwayat Diabetes Mellitus | Apakah Anda pernah menderita Diabetes Mellitus (penyakit gula)? <input type="checkbox"/> Ya <input type="checkbox"/> Tidak <input type="checkbox"/> Tidak tahu |
| E6 | Riwayat HIV | a. Apakah Anda pernah menderita HIV? <input type="checkbox"/> Ya <input type="checkbox"/> Tidak <input type="checkbox"/> Tidak tahu |

F. HASIL PEMERIKSAAN YANG SUDAH ADA (diisi oleh peneliti)

| | | |
|----|-------|---|
| F1 | IMT : | <input type="checkbox"/> Kurang <input type="checkbox"/> Ideal <input type="checkbox"/> Lebih |
|----|-------|---|

| | | |
|----|--------------------------------|---|
| F2 | Hasil foto X-Ray thorax | |
| FI | Hasil sputum BTA di tempat ini | Sputum 1: Sputum 2: Sputum 3: |

Catatan:

Ingatkan pasien untuk datang memeriksakan dahaknya pada tanggal:

.....

Yang dibawa pada kunjungan berikutnya:

1. Hasil foto: jika ada
2. Contoh obat yang diminum (bungkusnya juga bisa)

LAMPIRAN 3. PEMERIKSAAN ELISA NRAMP1 DAN NOS2

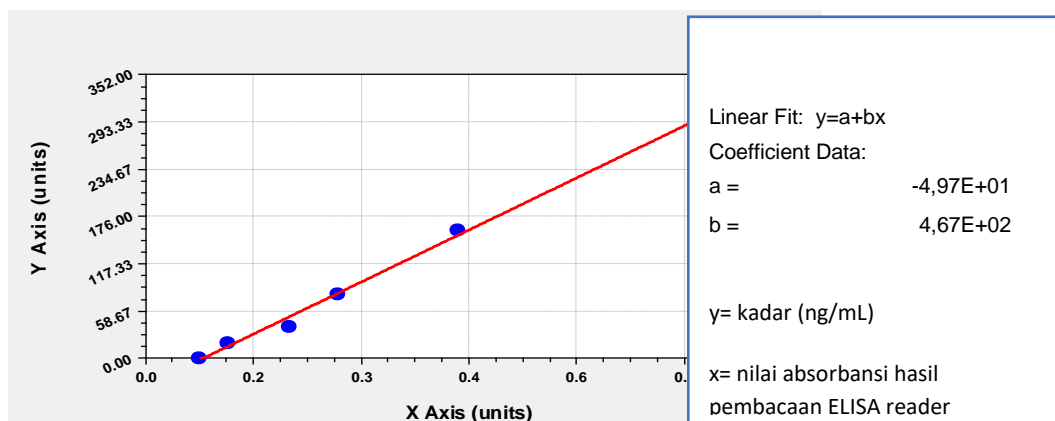
A. *Setting plate* ELISA untuk pemeriksaan NRAMP1 dan NOS2

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------|-----------|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|
| A | S1 | H33 | H23 | H12 | H21 | T56 | T66 | T168 | T189 | K42 | K54 | K65 |
| B | S2 | H34 | H5 | H13 | H22 | T58 | T67 | T171 | T190 | K44 | K55 | K66 |
| C | S3 | H26 | H6 | H14 | H19 | T59 | T69 | T173 | K32 | K45 | K57 | K67 |
| D | S4 | H31 | H7 | H15 | H29 | T60 | T75 | T174 | K33 | K46 | K59 | K72 |
| E | S5 | H32 | H8 | H16 | T52 | T61 | T76 | T175 | K38 | K47 | K60 | K74 |
| F | S6 | H27 | H9 | H17 | T53 | T62 | T77 | T177 | K39 | K48 | K61 | K77 |
| G | H25 | H28 | H10 | H18 | T54 | T64 | T159 | T178 | K40 | K49 | K62 | K78 |
| H | H30 | H24 | H11 | H20 | T55 | T65 | T164 | T184 | K41 | K52 | K64 | K80 |

B. Hasil Pemeriksaan NRAMP1

Tabel Nilai Absorbansi Pemeriksaan NRAMP1 ELISA

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| A | 0,7953 | 0,4687 | 0,3596 | 0,3374 | 0,4158 | 0,3825 | 0,1388 | 0,1262 | 0,4418 | 0,4844 | 0,5524 | 0,3931 |
| B | 0,4348 | 0,5129 | 0,3247 | 0,2490 | 0,4109 | 0,3656 | 0,5795 | 0,3987 | 0,4911 | 0,5910 | 0,6080 | 0,1070 |
| C | 0,2802 | 2,9431 | 0,4494 | 0,1075 | 0,3429 | 0,4304 | 0,3751 | 0,3409 | 0,3348 | 0,4496 | 0,3955 | 0,3079 |
| D | 0,2182 | 0,3432 | 0,5843 | 1,2661 | 0,5829 | 0,4824 | 0,1075 | 0,7093 | 0,4068 | 0,3356 | 0,4295 | 0,1110 |
| E | 0,1378 | 0,2905 | 0,1226 | 0,4078 | 0,5487 | 1,3515 | 0,1073 | 0,3514 | 0,3233 | 0,3656 | 2,8681 | 0,1083 |
| F | 0,1021 | 0,3229 | 3,1374 | 0,9727 | 0,3260 | 0,4296 | 0,1078 | 1,5813 | 0,4942 | 0,1082 | 0,1080 | 0,3399 |
| G | 0,2676 | 0,3536 | 0,3890 | 1,2412 | 0,4103 | 2,9336 | 0,3441 | 0,4496 | 0,3913 | 0,5667 | 0,3990 | 1,0373 |
| H | 1,5990 | 0,5516 | 0,1234 | 0,4159 | 0,4507 | 0,4428 | 0,1247 | 0,4985 | 0,6189 | 0,4766 | 0,0814 | 0,0842 |



Kurva linear standar (S1-S5) dan rumus fungsi kadar protein berdasarkan nilai absorbansi pada pemeriksaan NRAMP1

Tabel nilai kadar protein NRAMP1 setelah dikalkulasi sesuai standar

| SAMPEL | Absorbansi | Konsentrasi (ng/ml) |
|--------|------------|---------------------|
| S1 | 0,7953 | 320 |
| S2 | 0,4348 | 160 |
| S3 | 0,2802 | 80 |
| S4 | 0,2182 | 40 |
| S5 | 0,1378 | 20 |
| S6 | 0,1021 | 0 |
| H25 | 0,2676 | 75,13 |
| SAMPEL | Absorbansi | Konsentrasi (ng/ml) |
| H7 | 0,5843 | 222,87 |
| H8 | 0,1226 | 7,48 |
| H9 | 3,1374 | 1413,89 |
| H10 | 0,3890 | 131,76 |
| H11 | 0,1234 | 7,86 |
| H12 | 0,3374 | 107,69 |
| H13 | 0,2490 | 66,45 |
| H14 | 0,1075 | 0,44 |
| H15 | 1,2661 | 540,93 |
| H16 | 0,4078 | 140,53 |
| H17 | 0,9727 | 404,06 |
| H18 | 1,2412 | 529,31 |
| H20 | 0,4159 | 144,31 |
| H21 | 0,4158 | 144,26 |
| H22 | 0,4109 | 141,98 |
| H19 | 0,3429 | 110,25 |
| H29 | 0,5829 | 222,21 |
| T52 | 0,5487 | 206,26 |
| T53 | 0,3260 | 102,37 |
| T54 | 0,4103 | 141,70 |
| T55 | 0,4507 | 160,54 |
| T56 | 0,3825 | 128,73 |
| T58 | 0,3656 | 120,84 |
| T59 | 0,4304 | 151,07 |
| H30 | 1,5990 | 696,23 |
| H33 | 0,4687 | 168,94 |
| H34 | 0,5129 | 189,56 |
| H26 | 2,9431 | 1323,25 |
| H31 | 0,3432 | 110,39 |
| H32 | 0,2905 | 85,81 |
| H27 | 0,3229 | 100,92 |
| H28 | 0,3536 | 115,24 |
| H24 | 0,5516 | 207,61 |
| H23 | 0,3596 | 118,04 |
| H5 | 0,3247 | 101,76 |
| H6 | 0,4494 | 159,94 |

| | | |
|------|--------|---------|
| T60 | 0,4824 | 175,33 |
| T61 | 1,3515 | 580,77 |
| T62 | 0,4296 | 150,70 |
| T64 | 2,9336 | 1318,82 |
| T65 | 0,4428 | 156,86 |
| T66 | 0,1388 | 15,04 |
| T67 | 0,5795 | 220,63 |
| T69 | 0,3751 | 125,27 |
| T75 | 0,1075 | 0,44 |
| T76 | 0,1073 | 0,35 |
| T77 | 0,1078 | 0,58 |
| T159 | 0,3441 | 110,81 |
| T164 | 0,1247 | 8,46 |
| T168 | 0,1262 | 9,16 |
| T171 | 0,3987 | 136,28 |
| T173 | 0,3409 | 109,32 |
| T174 | 0,7093 | 281,18 |
| T175 | 0,3514 | 114,22 |
| T177 | 1,5813 | 687,97 |
| T178 | 0,4496 | 160,03 |
| T184 | 0,4985 | 182,84 |
| T189 | 0,4418 | 156,39 |
| T190 | 0,4911 | 179,39 |
| K32 | 0,3348 | 106,47 |
| K33 | 0,4068 | 140,06 |
| K38 | 0,3233 | 101,11 |
| K39 | 0,4942 | 180,83 |

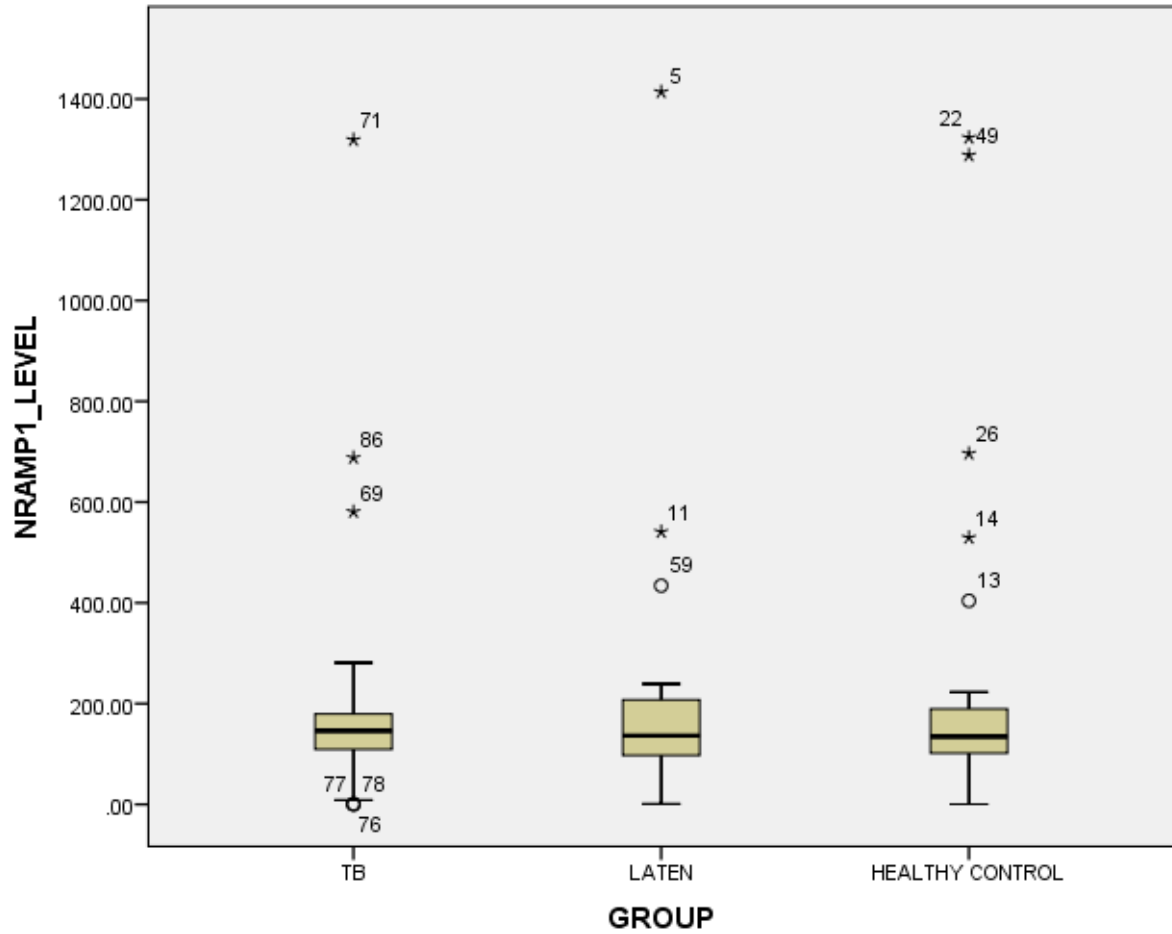
| | | |
|-----|--------|---------|
| K40 | 0,3913 | 132,83 |
| K41 | 0,6189 | 239,01 |
| K42 | 0,4844 | 176,26 |
| K44 | 0,5910 | 225,99 |
| K45 | 0,4496 | 160,03 |
| K46 | 0,3356 | 106,85 |
| K47 | 0,3656 | 120,84 |
| K48 | 0,1082 | 0,77 |
| K49 | 0,5667 | 214,66 |
| K52 | 0,4766 | 172,62 |
| K54 | 0,5524 | 207,99 |
| K55 | 0,6080 | 233,92 |
| K57 | 0,3955 | 134,79 |
| K59 | 0,4295 | 150,65 |
| K60 | 2,8681 | 1288,26 |
| K61 | 0,1080 | 0,67 |
| K62 | 0,3990 | 136,42 |
| K64 | 0,1081 | 0,72 |
| K65 | 0,3931 | 133,67 |
| K66 | 0,1070 | 0,21 |
| K67 | 0,3079 | 93,93 |
| K72 | 0,1110 | 2,07 |
| K74 | 0,1083 | 0,81 |
| K77 | 0,3399 | 108,85 |
| K78 | 1,0373 | 434,19 |
| K80 | 0,1084 | 0,86 |

Tabel nilai

Statistik kadar protein ELISA

Descriptives

| GROUP | | Statistic | Std. Error | |
|-----------------|-------|-------------------------------------|----------------------------|----------------------|
| NRAMP1_LEVEL | TB | Mean | 196.4117 | 47.20735 |
| | | 95% Confidence Interval for Mean | Lower Bound Upper Bound | 99.8618 292.9615 |
| | | 5% Trimmed Mean | 156.6287 | |
| | | Median | 146.2000 | |
| | | Variance | 66856.026 | |
| | | Std. Deviation | 258.56532 | |
| | | Minimum | .35 | |
| | | Maximum | 1318.82 | |
| | | Range | 1318.47 | |
| | | Interquartile Range | 72.67 | |
| | | Skewness | 3.300 | .427 |
| | | Kurtosis | 12.566 | .833 |
| | LATEN | | Mean | 199.2730 |
| | | 95% Confidence Interval for Mean | Lower Bound Upper Bound | 92.1703 306.3756 |
| | | 5% Trimmed Mean | 155.3972 | |
| | | Median | 136.4200 | |
| | | Variance | 73302.169 | |
| | | Std. Deviation | 270.74373 | |
| | | Minimum | .72 | |
| | | Maximum | 1413.89 | |
| | | Range | 1413.17 | |
| | | Interquartile Range | 114.06 | |
| | | Skewness | 3.776 | .448 |
| | | Kurtosis | 16.465 | .872 |
| HEALTHY CONTROL | | | Mean | 224.6985 |
| | | 95% Confidence Interval for Mean | Lower Bound Upper Bound | 113.2468 336.1503 |
| | | 5% Trimmed Mean | 176.9003 | |
| | | Median | 134.7900 | |
| | | Variance | 98794.723 | |
| | | Std. Deviation | 314.31628 | |
| | | Minimum | .21 | |
| | | Maximum | 1323.25 | |
| | | Range | 1323.04 | |
| | | Interquartile Range | 100.77 | |
| | | Skewness | 2.767 | .409 |
| | | Kurtosis | 7.558 | .798 |



Grafik boxplot kadar NRAMP1 pada kelompok TB aktif, TB laten, dan orang sehat

berdasarkan uji Kruskal-wallis Hasil uji beda nilai kadar protein NRAMP1

Ranks

| | GROUP | N | Mean Rank |
|--------------|-----------------|----|-----------|
| NRAMP1_LEVEL | TB | 30 | 46.30 |
| | LATEN | 27 | 45.83 |
| | HEALTHY CONTROL | 33 | 44.50 |
| | Total | 90 | |

Test Statistics^{a,b}

| | NRAMP1_LEV EL |
|-------------|------------------|
| Chi-Square | .081 |
| df | 2 |
| Asymp. Sig. | .960 |

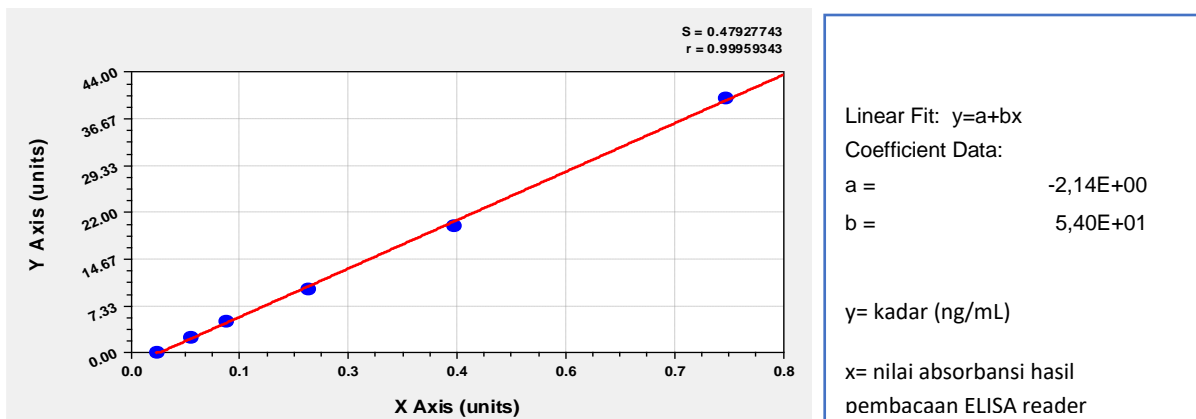
a. Kruskal Wallis Test

b. Grouping Variable:
GROUP

C. Hasil Pemeriksaan NOS2

Tabel Nilai Absorbansi Pemeriksaan NOS2 ELISA

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| A | 0,7736 | 0,0983 | 0,0744 | 0,0958 | 0,0598 | 0,0538 | 0,0906 | 0,0680 | 0,0664 | 0,1011 | 0,0615 | 0,0967 |
| B | 0,4215 | 0,0875 | 0,0820 | 0,0427 | 0,0596 | 0,0557 | 0,0741 | 0,0499 | 0,0675 | 0,0992 | 0,1260 | 0,0666 |
| C | 0,2337 | 1,0251 | 0,0537 | 0,0579 | 0,0854 | 0,0815 | 0,0727 | 0,0609 | 0,0596 | 0,0633 | 0,0635 | 0,0669 |
| D | 0,1265 | 0,0509 | 0,1209 | 0,2937 | 0,4155 | 0,0559 | 0,0735 | 0,1365 | 0,0509 | 0,0837 | 0,0617 | 0,0598 |
| E | 0,0816 | 0,0691 | 0,0627 | 0,0666 | 0,1286 | 0,3211 | 0,0911 | 0,0683 | 0,0515 | 0,0633 | 0,4915 | 0,0575 |
| F | 0,0370 | 0,0582 | 1,0631 | 0,3362 | 0,0779 | 0,0675 | 0,1554 | 0,3682 | 0,0688 | 0,0697 | 0,0596 | 0,0687 |
| G | 0,0672 | 0,0673 | 0,0629 | 0,0430 | 0,0772 | 0,6357 | 0,1073 | 0,1701 | 0,0570 | 0,0707 | 0,0658 | 0,1033 |
| H | 0,3648 | 0,0596 | 0,0597 | 0,0772 | 0,0641 | 0,0643 | 0,1141 | 0,1083 | 0,0608 | 0,0513 | 0,0753 | 0,0697 |



Kurva linear standar (S1-S5) dan rumus fungsi kadar protein berdasarkan nilai absorbansi pada pemeriksaan NOS2

Tabel nilai kadar protein NOS2 setelah dikalkulasi sesuai standar

| Sampel | Absorbansi | Konsentrasi (ng/ml) |
|--------|------------|---------------------|
| S1 | 0,7736 | 40 |
| S2 | 0,4215 | 20 |
| S3 | 0,2337 | 10 |
| S4 | 0,1265 | 5 |
| S5 | 0,0816 | 2,5 |
| S6 | 0,0370 | 0 |
| Sampel | Absorbansi | Konsentrasi (ng/ml) |

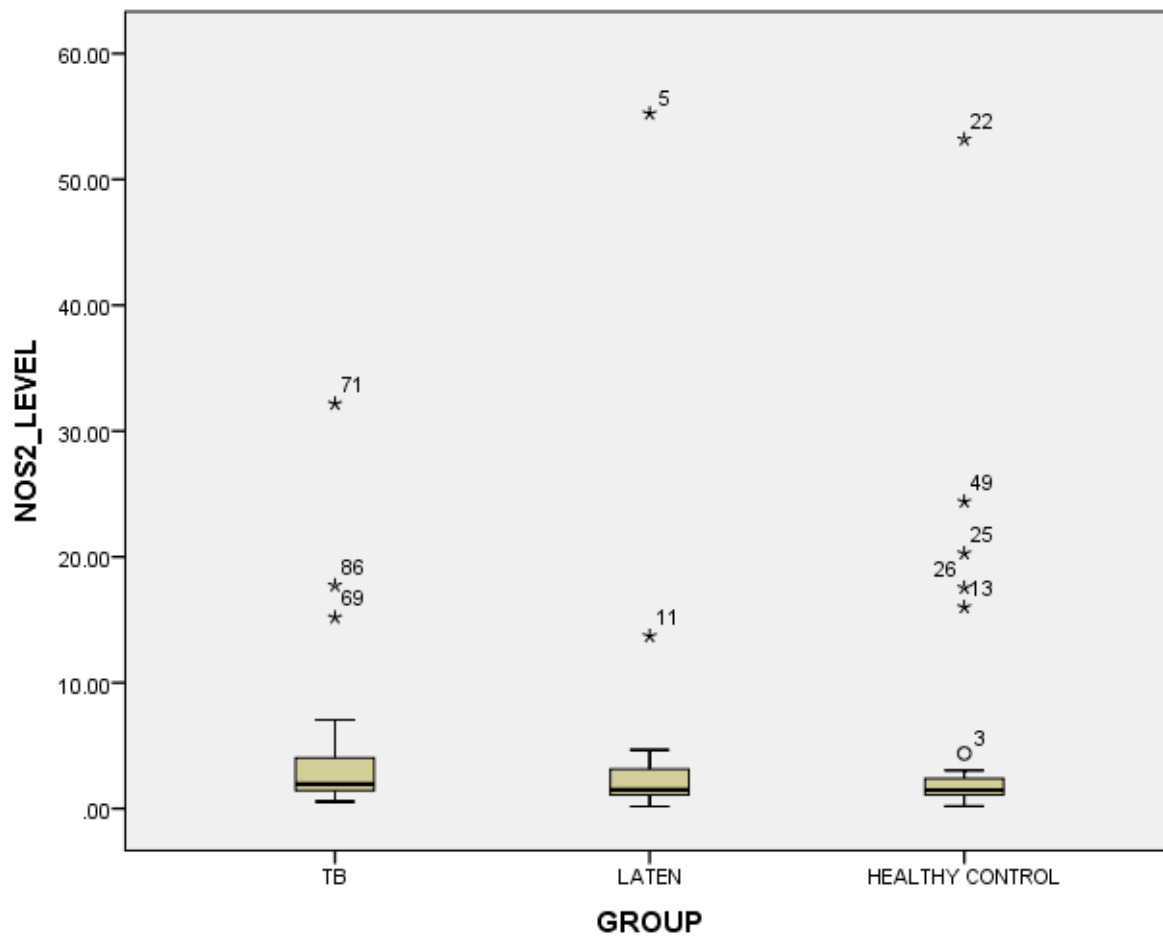
| | | |
|-----|--------|-------|
| H25 | 0,0672 | 1,49 |
| H30 | 0,3648 | 17,55 |
| H33 | 0,0983 | 3,17 |
| H34 | 0,0875 | 2,58 |
| H26 | 1,0251 | 53,18 |
| H31 | 0,0509 | 0,61 |
| H32 | 0,0691 | 1,59 |
| H27 | 0,0582 | 1,00 |
| H28 | 0,0673 | 1,49 |

| | | |
|------|--------|-------|
| H24 | 0,0596 | 1,08 |
| H23 | 0,0744 | 1,88 |
| H5 | 0,0820 | 2,29 |
| H6 | 0,0537 | 0,76 |
| H7 | 0,1209 | 4,39 |
| H8 | 0,0627 | 1,24 |
| H9 | 1,0631 | 55,23 |
| H10 | 0,0629 | 1,26 |
| H11 | 0,0597 | 1,08 |
| H12 | 0,0958 | 3,03 |
| H13 | 0,0427 | 0,17 |
| H14 | 0,0579 | 0,99 |
| H15 | 0,2937 | 13,71 |
| H16 | 0,0666 | 1,46 |
| H17 | 0,3362 | 16,00 |
| H18 | 0,0430 | 0,18 |
| H20 | 0,0772 | 2,03 |
| H21 | 0,0598 | 1,09 |
| H22 | 0,0596 | 1,08 |
| H19 | 0,0854 | 2,47 |
| H29 | 0,4155 | 20,28 |
| T52 | 0,1286 | 4,80 |
| T53 | 0,0779 | 2,07 |
| T54 | 0,0772 | 2,03 |
| T55 | 0,0641 | 1,32 |
| T56 | 0,0538 | 0,76 |
| T58 | 0,0557 | 0,87 |
| T59 | 0,0815 | 2,26 |
| T60 | 0,0559 | 0,88 |
| T61 | 0,3211 | 15,19 |
| T62 | 0,0675 | 1,50 |
| T64 | 0,6357 | 32,17 |
| T65 | 0,0643 | 1,33 |
| T66 | 0,0906 | 2,75 |
| T67 | 0,0741 | 1,86 |
| T69 | 0,0727 | 1,78 |
| T75 | 0,0735 | 1,83 |
| T76 | 0,0911 | 2,78 |
| T77 | 0,1554 | 6,25 |
| T159 | 0,1073 | 3,65 |
| T164 | 0,1141 | 4,02 |
| T168 | 0,0680 | 1,53 |
| T171 | 0,0499 | 0,55 |
| T173 | 0,0609 | 1,15 |
| T174 | 0,1365 | 5,23 |
| T175 | 0,0683 | 1,55 |

| | | |
|------|--------|-------|
| T177 | 0,3682 | 17,73 |
| T178 | 0,1701 | 7,04 |
| T184 | 0,1083 | 3,71 |
| T189 | 0,0664 | 1,44 |
| T190 | 0,0675 | 1,50 |
| K32 | 0,0596 | 1,08 |
| K33 | 0,0509 | 0,61 |
| K38 | 0,0515 | 0,64 |
| K39 | 0,0688 | 1,57 |
| K40 | 0,0570 | 0,94 |
| K41 | 0,0608 | 1,14 |
| K42 | 0,1011 | 3,32 |
| K44 | 0,0992 | 3,21 |
| K45 | 0,0633 | 1,28 |
| K46 | 0,0837 | 2,38 |
| K47 | 0,0633 | 1,28 |
| K48 | 0,0697 | 1,62 |
| K49 | 0,0707 | 1,68 |
| K52 | 0,0513 | 0,63 |
| K54 | 0,0615 | 1,18 |
| K55 | 0,1260 | 4,66 |
| K57 | 0,0635 | 1,29 |
| K59 | 0,0617 | 1,19 |
| K60 | 0,4915 | 24,39 |
| K61 | 0,0596 | 1,08 |
| K62 | 0,0658 | 1,41 |
| K64 | 0,0753 | 1,92 |
| K65 | 0,0967 | 3,08 |
| K66 | 0,0666 | 1,46 |
| K67 | 0,0669 | 1,47 |
| K72 | 0,0598 | 1,09 |
| K74 | 0,0575 | 0,96 |
| K77 | 0,0687 | 1,57 |
| K78 | 0,1033 | 3,44 |
| K80 | 0,0697 | 1,62 |

Tabel nilai statistik kadar protein NOS2 dengan metode ELISA

| Descriptives | | | Statistic | Std. Error | |
|-----------------|----|----------------------------------|-------------|------------|--|
| GROUP | | | | | |
| NOS2_LEVEL | TB | Mean | 4.3843 | 1.19527 | |
| | | 95% Confidence Interval for Mean | Lower Bound | 1.9397 | |
| | | | Upper Bound | 6.8289 | |
| | | 5% Trimmed Mean | 3.3172 | | |
| | | Median | 1.9450 | | |
| | | Variance | 42.860 | | |
| | | Std. Deviation | 6.54674 | | |
| | | Minimum | .55 | | |
| | | Maximum | 32.17 | | |
| | | Range | 31.62 | | |
| | | Interquartile Range | 2.80 | | |
| | | Skewness | 3.242 | .427 | |
| | | Kurtosis | 11.511 | .833 | |
| LATEN | | Mean | 4.2101 | 2.02187 | |
| | | 95% Confidence Interval for Mean | Lower Bound | .0541 | |
| | | | Upper Bound | 8.3661 | |
| | | 5% Trimmed Mean | 2.1919 | | |
| | | Median | 1.4932 | | |
| | | Variance | 110.374 | | |
| | | Std. Deviation | 10.50592 | | |
| | | Minimum | .17 | | |
| | | Maximum | 55.23 | | |
| | | Range | 55.07 | | |
| | | Interquartile Range | 2.09 | | |
| | | Skewness | 4.769 | .448 | |
| | | Kurtosis | 23.616 | .872 | |
| HEALTHY CONTROL | | Mean | 5.2685 | 1.83746 | |
| | | 95% Confidence Interval for Mean | Lower Bound | 1.5257 | |
| | | | Upper Bound | 9.0113 | |
| | | 5% Trimmed Mean | 3.5100 | | |
| | | Median | 1.4600 | | |
| | | Variance | 111.416 | | |
| | | Std. Deviation | 10.55539 | | |
| | | Minimum | .18 | | |
| | | Maximum | 53.18 | | |
| | | Range | 53.00 | | |
| | | Interquartile Range | 1.40 | | |
| | | Skewness | 3.445 | .409 | |
| | | Kurtosis | 13.392 | .798 | |



Grafik boxplot kadar NOS2 pada kelompok TB aktif, TB laten, dan orang sehat

Hasil uji beda nilai kadar protein NOS2 berdasarkan uji Kruskal-wallis

Ranks

| | GROUP | N | Mean Rank |
|------------|-----------------|----|-----------|
| NOS2_LEVEL | TB | 30 | 52.47 |
| | LATEN | 27 | 42.19 |
| | HEALTHY CONTROL | 33 | 41.88 |
| | Total | 90 | |

Test Statistics^{a,b}

| | NOS2_LEVEL |
|-------------|------------|
| Chi-Square | 3.202 |
| df | 2 |
| Asymp. Sig. | .202 |

a. Kruskal Wallis Test

b. Grouping Variable:
GROUP**NPar Tests****Notes**

| | | |
|------------------------|--------------------------------------|---|
| Output Created | | |
| Comments | | |
| | Data | |
| | Active Dataset | DataSet1 |
| Input | Filter | <none> |
| | Weight | <none> |
| | Split File | <none> |
| | N of Rows in Working Data File | 140 |
| | Definition of Missing | User-defined missing values are treated as missing. |
| Missing Value Handling | | Statistics for each test are based on all cases with valid data for the variable(s) used in that test. |
| | Cases Used | NPAR TESTS /K-W=NRAMP1_LEVEL NOS2_LEVEL BY GROUP(1 3) /MEDIAN=NRAMP1_LEVEL NOS2_LEVEL BY GROUP(1 3) /MISSING ANALYSIS. |
| Syntax | | |
| | Processor Time | 00:00:00.00 |
| Resources | Elapsed Time | 00:00:00.02 |
| | Number of Cases Allowed ^a | 98304 |

a. Based on availability of workspace memory.

Kruskal-Wallis Test

| Ranks | | | |
|--------------|-----------------|----|-----------|
| | GROUP | N | Mean Rank |
| NRAMP1_LEVEL | TB | 30 | 46.30 |
| | LATEN | 27 | 45.83 |
| | HEALTHY CONTROL | 33 | 44.50 |
| | Total | 90 | |
| NOS2_LEVEL | TB | 30 | 52.47 |
| | LATEN | 27 | 42.19 |
| | HEALTHY CONTROL | 33 | 41.88 |
| | Total | 90 | |

| Test Statistics ^{a,b} | | |
|--------------------------------|--------------|------------|
| | NRAMP1_LEVEL | NOS2_LEVEL |
| Chi-Square | .081 | 3.202 |
| df | 2 | 2 |
| Asymp. Sig. | .960 | .202 |

a. Kruskal Wallis Test

b. Grouping Variable: GROUP

| Ranks | | | | |
|--------------|-------|----|-----------|--------------|
| | GROUP | N | Mean Rank | Sum of Ranks |
| NRAMP1_LEVEL | TB | 30 | 29.05 | 871.50 |
| | LATEN | 27 | 28.94 | 781.50 |
| | Total | 57 | | |
| NOS2_LEVEL | TB | 30 | 32.23 | 967.00 |
| | LATEN | 27 | 25.41 | 686.00 |
| | Total | 57 | | |

| Test Statistics ^a | | |
|------------------------------|--------------|------------|
| | NRAMP1_LEVEL | NOS2_LEVEL |
| Mann-Whitney U | 403.500 | 308.000 |
| Wilcoxon W | 781.500 | 686.000 |
| Z | -.024 | -1.550 |
| Asymp. Sig. (2-tailed) | .981 | .121 |

a. Grouping Variable: GROUP

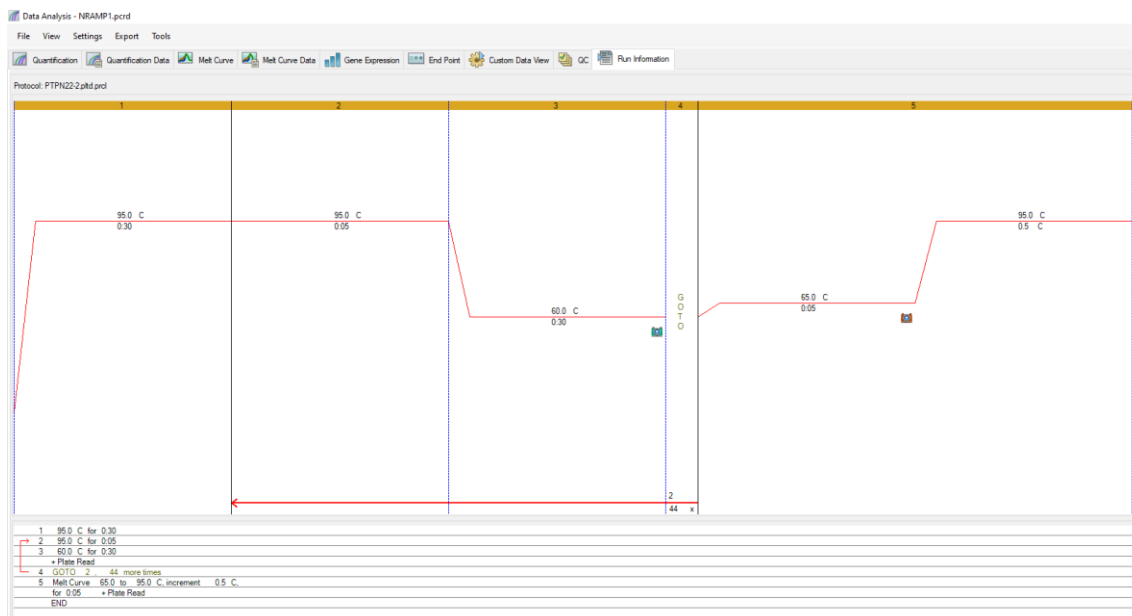
| KELOMPOK | KADAR PROTEIN NRAMP | P-VALUE |
|----------|---------------------|---------|
| TB AKTIF | 196,42 ± 258,57 | 0,96* |
| TB LATEN | 199,27 ± 270,74 | |
| SEHAT | 224,70 ± 314,32 | |

| KELOMPOK | KADAR PROTEIN NOS2 | P-VALUE |
|----------|--------------------|---------|
| TB AKTIF | 4,38 ± 6,55 | 0,202 |
| TB LATEN | 4,21 ± 10,51 | |
| SEHAT | 5,27 ± 10,56 | |

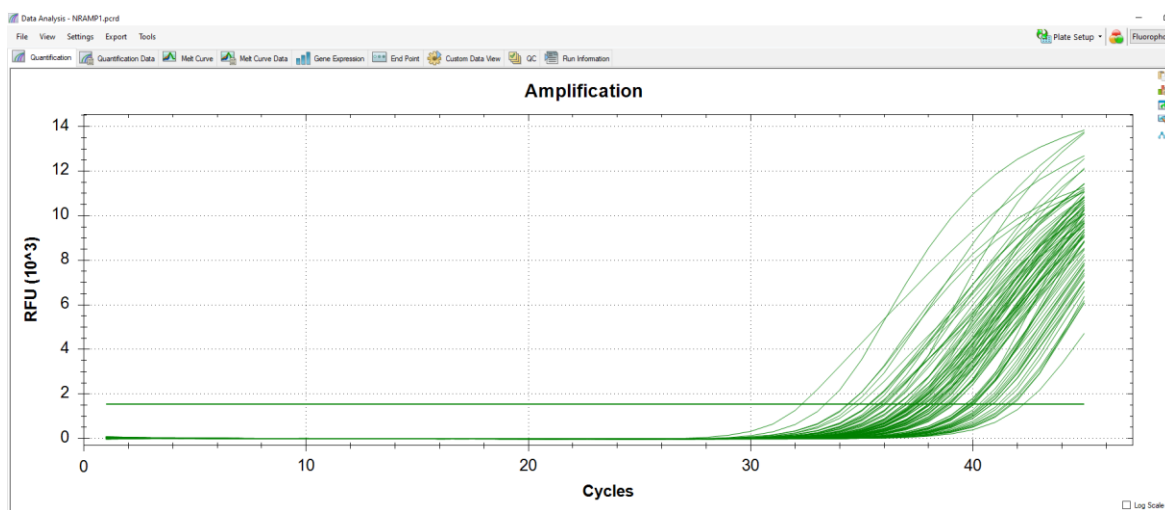
LAMPIRAN 4. PEMERIKSAAN EKSPRESI GEN *NRAMP1* DAN *NOS2A*

A. PEMERIKSAAN EKSPRESI GEN *NRAMP1*

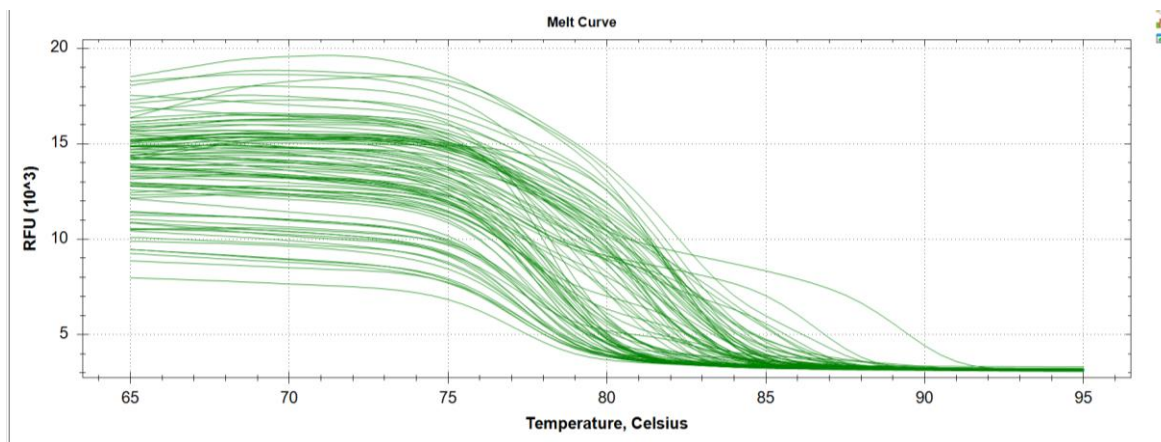
B.



Gambar siklus real-time PCR gen *NRAMP1*

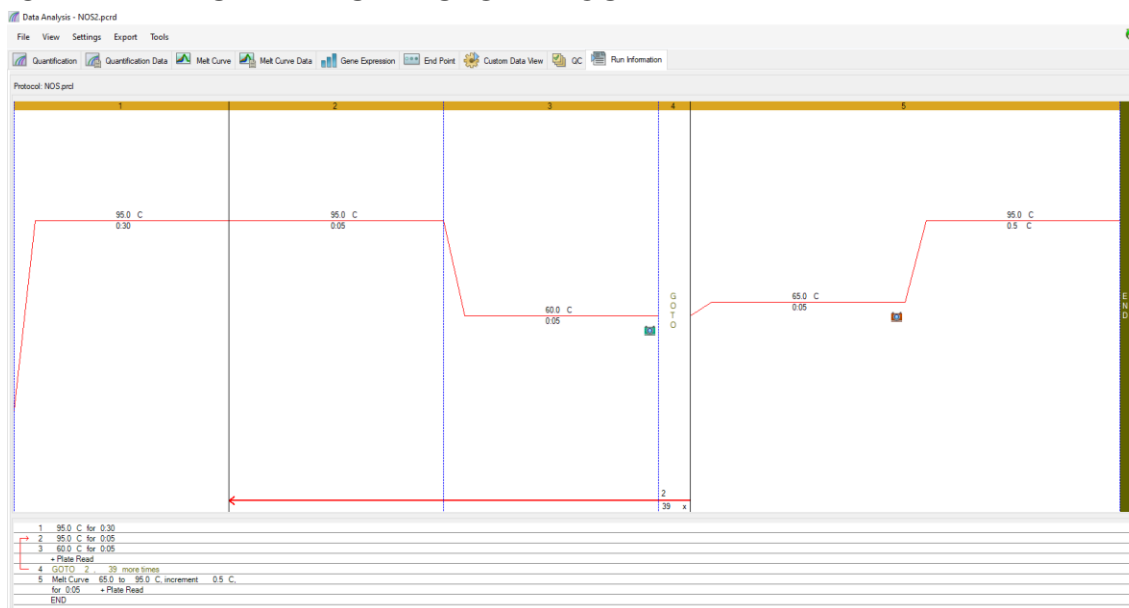


Grafik amplifikasi cDNA pemeriksaan ekspresi gen *NRAMP1*

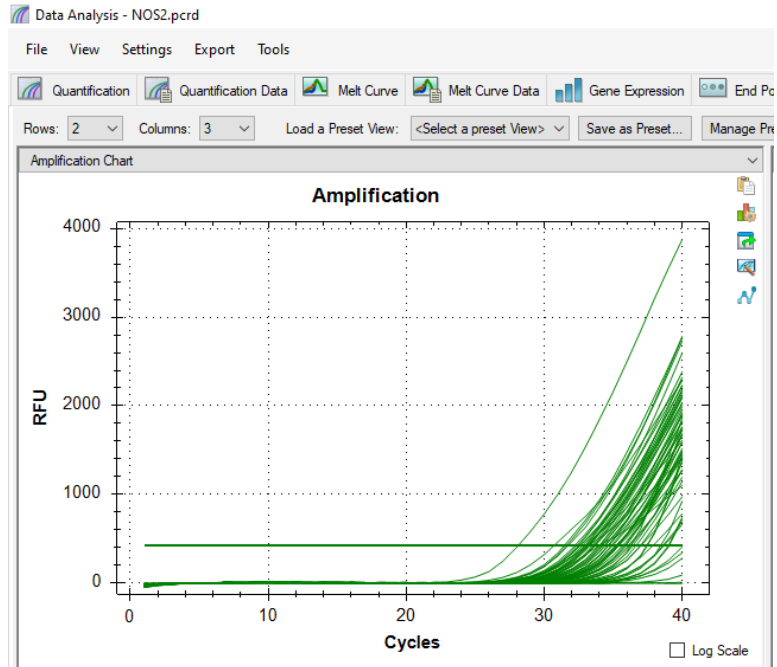


Grafik *melt curve* pada pemeriksaan ekspresi gen NRAMP1

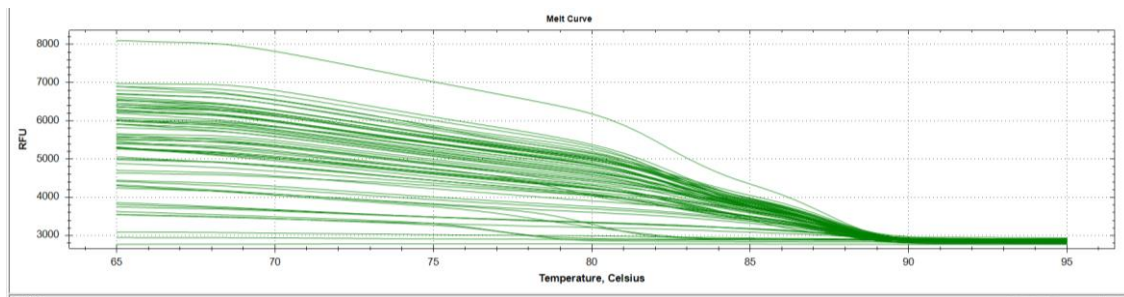
C. PEMERIKSAAN EKSPRESI GEN NOS2



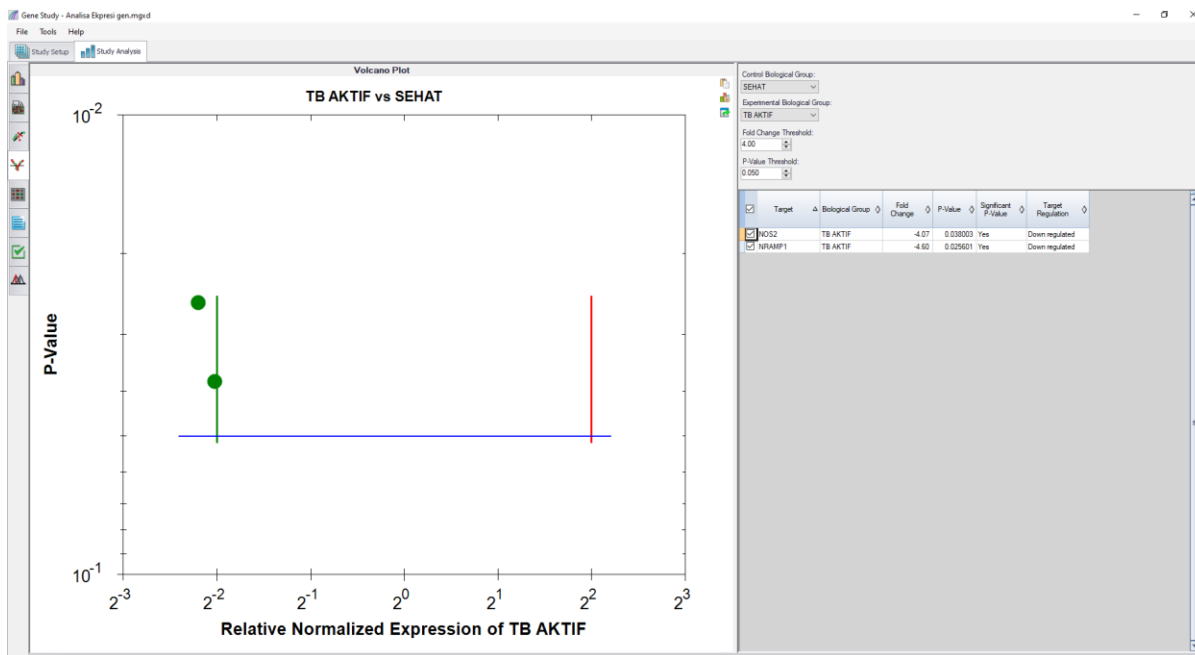
Gambar siklus real-time PCR gen NOS2



Grafik amplifikasi cDNA pemeriksaan ekspresi gen *NOS2A*

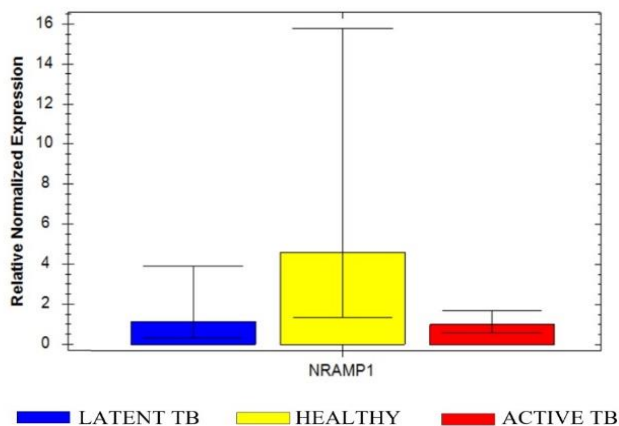


Grafik *melt curve* pada pemeriksaan ekspresi gen *NOS2A*

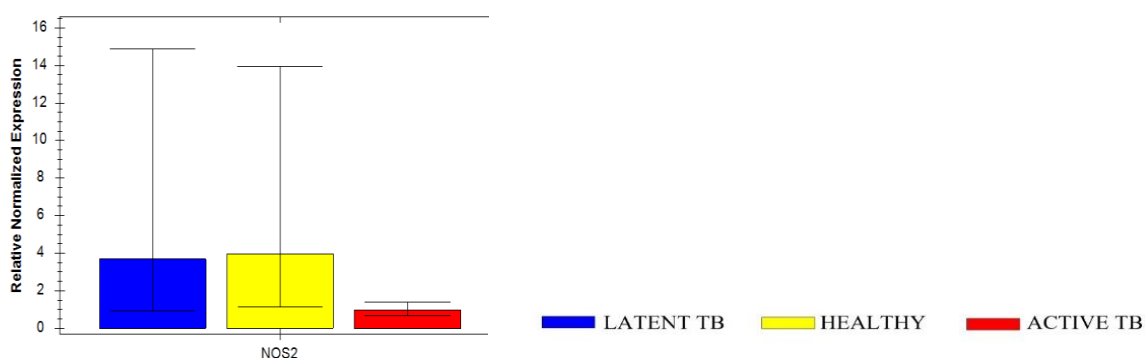


| Target | Biological Group | Fold Change | P-Value | Significant P-Value | Target Regulation |
|--------|------------------|-------------|----------|---------------------|-------------------|
| NOS2 | TB AKTIF | -4,07 | 0,038003 | Yes | Down regulated |
| NRAMP1 | TB AKTIF | -4,60 | 0,025601 | Yes | Down regulated |

Analisis Ekspresi Gen *NRAMP1* dan *NOSA* dengan hasil yang bermakna ($p < 0.05$) pada TB aktif dan orang sehat



Grafik nilai rerata hasil pengukuran ekspresi mRNA gen *NRAMP1* pada kelompok TB aktif, TB laten dan normal



Grafik nilai rerata hasil pengukuran ekspresi mRNA gen *NOS 2 A* pada kelompok TB aktif, TB laten dan normal

Tabel hasil analisis Ekspresi Gen *NRAMP1* dan *NOS2A* pada kelompok TB aktif, TB laten dan orang sehat

| Target | Biological Group | Control | Expression | Expression 95% CI Low | Expression 95% CI High | P-Value |
|--------|------------------|---------|------------|-----------------------|------------------------|----------|
| GAPDH | LATEN | | | | | |
| GAPDH | SEHAT | C | | | | |
| GAPDH | TB AKTIF | | | | | |
| NOS2 | LATEN | | 0,93170 | 0,23075 | 3,76184 | 0,939714 |
| NOS2 | SEHAT | C | 1,00000 | 0,28386 | 3,52284 | |
| NOS2 | TB AKTIF | | 0,24579 | 0,17074 | 0,35382 | 0,038003 |
| NRAMP1 | LATEN | | 0,24970 | 0,07341 | 0,84928 | 0,117868 |
| NRAMP1 | SEHAT | C | 1,00000 | 0,29127 | 3,43322 | |
| NRAMP1 | TB AKTIF | | 0,21752 | 0,12723 | 0,37188 | 0,025601 |

Tabel ekspresi gen *NRAMP1* dan *NOS2A* pada tiap sampel

| Target | Sample Biological Group | Expression | Expression SEM | Corrected Expression SEM | Mean Cq | Cq SEM | P-Value |
|--------|-------------------------|------------|----------------|--------------------------|---------|---------|---------|
| GAPDH | H10_SEHAT | | | | 28,46 | 0,00000 | |
| GAPDH | H11_SEHAT | | | | 31,32 | 0,00000 | |
| GAPDH | H12_SEHAT | | | | 29,24 | 0,00000 | |
| GAPDH | H13_LATEN | | | | 28,69 | 0,00000 | |
| GAPDH | H14_SEHAT | | | | 29,84 | 0,00000 | |
| GAPDH | H15_LATEN | | | | 29,08 | 0,00000 | |
| GAPDH | H16_SEHAT | | | | 23,95 | 0,00000 | |

| | | | | | | | |
|-------|-----------|--|--|--|-------|---------|--|
| GAPDH | H17_SEHAT | | | | 43,88 | 0,00000 | |
| GAPDH | H18_SEHAT | | | | 31,90 | 0,00000 | |
| GAPDH | H19_LATEN | | | | 34,64 | 0,00000 | |
| GAPDH | H20_LATEN | | | | 29,91 | 0,00000 | |
| GAPDH | H21_SEHAT | | | | 36,04 | 0,00000 | |
| GAPDH | H22_SEHAT | | | | 32,08 | 0,00000 | |
| GAPDH | H23_SEHAT | | | | 38,70 | 0,00000 | |
| GAPDH | H24_LATEN | | | | 33,65 | 0,00000 | |
| GAPDH | H25_SEHAT | | | | 39,20 | 0,00000 | |
| GAPDH | H26_SEHAT | | | | 34,47 | 0,00000 | |
| GAPDH | H27_SEHAT | | | | 39,93 | 0,00000 | |
| GAPDH | H28_LATEN | | | | 29,23 | 0,00000 | |
| GAPDH | H29_SEHAT | | | | 32,66 | 0,00000 | |
| GAPDH | H30_SEHAT | | | | 43,72 | 0,00000 | |
| GAPDH | H31_SEHAT | | | | 37,00 | 0,00000 | |
| GAPDH | H32_LATEN | | | | 36,23 | 0,00000 | |
| GAPDH | H33_LATEN | | | | 39,33 | 0,00000 | |
| GAPDH | H34_SEHAT | | | | 36,53 | 0,00000 | |
| GAPDH | H5_SEHAT | | | | 29,02 | 0,00000 | |
| GAPDH | H6_SEHAT | | | | 29,15 | 0,00000 | |
| GAPDH | H7_SEHAT | | | | 27,94 | 0,00000 | |
| GAPDH | H8_SEHAT | | | | 31,35 | 0,00000 | |
| GAPDH | H9_LATEN | | | | 31,23 | 0,00000 | |
| GAPDH | K32_LATEN | | | | 30,91 | 0,00000 | |
| GAPDH | K33_LATEN | | | | 29,28 | 0,00000 | |
| GAPDH | K38_LATEN | | | | 35,61 | 0,00000 | |
| GAPDH | K40_SEHAT | | | | 37,46 | 0,00000 | |
| GAPDH | K46_SEHAT | | | | 35,74 | 0,00000 | |
| GAPDH | K48_SEHAT | | | | 34,20 | 0,00000 | |
| GAPDH | K49_SEHAT | | | | 39,00 | 0,00000 | |
| GAPDH | K52_LATEN | | | | 36,44 | 0,00000 | |
| GAPDH | K54_LATEN | | | | 36,24 | 0,00000 | |
| GAPDH | K55_SEHAT | | | | 32,43 | 0,00000 | |
| GAPDH | K57_SEHAT | | | | 34,41 | 0,00000 | |
| GAPDH | K59_LATEN | | | | 38,28 | 0,00000 | |
| GAPDH | K60_SEHAT | | | | 28,81 | 0,00000 | |
| GAPDH | K61_SEHAT | | | | 33,28 | 0,00000 | |
| GAPDH | K62_LATEN | | | | 31,03 | 0,00000 | |
| GAPDH | K64_LATEN | | | | 27,44 | 0,00000 | |
| GAPDH | K65_LATEN | | | | 30,03 | 0,00000 | |
| GAPDH | K66_SEHAT | | | | 28,61 | 0,00000 | |

| | | | | | | | |
|-------|------------------|---------|---------|---------|-------|---------|--|
| GAPDH | K67_LATEN | | | | 29,76 | 0,00000 | |
| GAPDH | K72_LATEN | | | | 30,24 | 0,00000 | |
| GAPDH | K74_LATEN | | | | 33,07 | 0,00000 | |
| GAPDH | K77_SEHAT | | | | 32,90 | 0,00000 | |
| GAPDH | K78_LATEN | | | | 26,69 | 0,00000 | |
| GAPDH | K80_LATEN | | | | 29,17 | 0,00000 | |
| GAPDH | T159_TB AKTIF | | | | 28,13 | 0,00000 | |
| GAPDH | T164_TB AKTIF | | | | 30,07 | 0,00000 | |
| GAPDH | T168_TB AKTIF | | | | 29,36 | 0,00000 | |
| GAPDH | T171_TB AKTIF | | | | 26,98 | 0,00000 | |
| GAPDH | T173_TB AKTIF | | | | 28,54 | 0,00000 | |
| GAPDH | T174_TB AKTIF | | | | 28,52 | 0,00000 | |
| GAPDH | T175_TB AKTIF | | | | 31,41 | 0,00000 | |
| GAPDH | T177_TB AKTIF | | | | 28,62 | 0,00000 | |
| GAPDH | T178_TB AKTIF | | | | 30,50 | 0,00000 | |
| GAPDH | T184_TB AKTIF | | | | 27,29 | 0,00000 | |
| GAPDH | T189_TB AKTIF | | | | 28,34 | 0,00000 | |
| GAPDH | T190_TB AKTIF | | | | 29,24 | 0,00000 | |
| GAPDH | T52_TB AKTIF | | | | 28,19 | 0,00000 | |
| GAPDH | T53_TB AKTIF | | | | 32,03 | 0,00000 | |
| GAPDH | T54_TB AKTIF | | | | 29,09 | 0,00000 | |
| GAPDH | T55_TB AKTIF | | | | 30,13 | 0,00000 | |
| GAPDH | T56_TB AKTIF | | | | 28,67 | 0,00000 | |
| GAPDH | T58_TB AKTIF | | | | 32,20 | 0,00000 | |
| GAPDH | T59_TB AKTIF | | | | 30,84 | 0,00000 | |
| GAPDH | T60_TB AKTIF | | | | 34,46 | 0,00000 | |
| GAPDH | T61_TB AKTIF | | | | 35,21 | 0,00000 | |
| GAPDH | T62_TB AKTIF | | | | 34,15 | 0,00000 | |
| GAPDH | T64_TB AKTIF | | | | 33,29 | 0,00000 | |
| GAPDH | T65_TB AKTIF | | | | 31,90 | 0,00000 | |
| GAPDH | T67_TB AKTIF | | | | 29,06 | 0,00000 | |
| GAPDH | T69_TB AKTIF | | | | 32,47 | 0,00000 | |
| GAPDH | T71_TB AKTIF | | | | 30,58 | 0,00000 | |
| GAPDH | T75_TB AKTIF | | | | 31,70 | 0,00000 | |
| GAPDH | T76_TB AKTIF | | | | 32,41 | 0,00000 | |
| GAPDH | T77_TB AKTIF | | | | 29,59 | 0,00000 | |
| NOS2 | H10_SEHAT | 0,00032 | 0,00000 | 0,00000 | 39,08 | 0,00000 | |
| NOS2 | H11_SEHAT | 0,15884 | 0,00000 | 0,00000 | 32,97 | 0,00000 | |

| | | | | | | | |
|------|-----------|----------|---------|---------|-------|---------|----------|
| NOS2 | H12_SEHAT | 0,01176 | 0,00000 | 0,00000 | 34,65 | 0,00000 | |
| NOS2 | H13_LATEN | 0,02209 | 0,00000 | 0,00000 | 33,19 | 0,00000 | 0,939714 |
| NOS2 | H14_SEHAT | 0,00184 | 0,00000 | 0,00000 | 37,93 | 0,00000 | |
| NOS2 | H15_LATEN | 0,00730 | 0,00000 | 0,00000 | 35,18 | 0,00000 | 0,939714 |
| NOS2 | H16_SEHAT | 0,00001 | 0,00000 | 0,00000 | 39,03 | 0,00000 | |
| NOS2 | H17_SEHAT | 88,41552 | 0,00000 | 0,00000 | 36,41 | 0,00000 | |
| NOS2 | H18_SEHAT | 0,01058 | 0,00000 | 0,00000 | 37,46 | 0,00000 | |
| NOS2 | H19_LATEN | 0,18311 | 0,00000 | 0,00000 | 36,09 | 0,00000 | 0,939714 |
| NOS2 | H20_LATEN | 0,00832 | 0,00000 | 0,00000 | 35,81 | 0,00000 | 0,939714 |
| NOS2 | H21_SEHAT | 0,83588 | 0,00000 | 0,00000 | 35,30 | 0,00000 | |
| NOS2 | H22_SEHAT | 0,11923 | 0,00000 | 0,00000 | 34,15 | 0,00000 | |
| NOS2 | H23_SEHAT | 7,13592 | 0,00000 | 0,00000 | 34,86 | 0,00000 | |
| NOS2 | H24_LATEN | 0,80943 | 0,00000 | 0,00000 | 32,96 | 0,00000 | 0,939714 |
| NOS2 | H25_SEHAT | 7,03338 | 0,00000 | 0,00000 | 35,38 | 0,00000 | |
| NOS2 | H26_SEHAT | 0,51731 | 0,00000 | 0,00000 | 34,41 | 0,00000 | |
| NOS2 | H29_SEHAT | 0,05231 | 0,00000 | 0,00000 | 35,91 | 0,00000 | |
| NOS2 | H30_SEHAT | 19,11000 | 0,00000 | 0,00000 | 38,46 | 0,00000 | |
| NOS2 | H31_SEHAT | 2,59078 | 0,00000 | 0,00000 | 34,62 | 0,00000 | |
| NOS2 | H32_LATEN | 7,36119 | 0,00000 | 0,00000 | 32,35 | 0,00000 | 0,939714 |
| NOS2 | H33_LATEN | 69,04540 | 0,00000 | 0,00000 | 32,21 | 0,00000 | 0,939714 |
| NOS2 | H34_SEHAT | 8,21967 | 0,00000 | 0,00000 | 32,49 | 0,00000 | |
| NOS2 | H5_SEHAT | 0,04152 | 0,00000 | 0,00000 | 32,61 | 0,00000 | |
| NOS2 | H6_SEHAT | 0,02206 | 0,00000 | 0,00000 | 33,65 | 0,00000 | |
| NOS2 | H7_SEHAT | 0,03950 | 0,00000 | 0,00000 | 31,60 | 0,00000 | |
| NOS2 | H8_SEHAT | 0,13759 | 0,00000 | 0,00000 | 33,21 | 0,00000 | |
| NOS2 | H9_LATEN | 0,00930 | 0,00000 | 0,00000 | 36,98 | 0,00000 | 0,939714 |
| NOS2 | K32_LATEN | 0,02436 | 0,00000 | 0,00000 | 35,27 | 0,00000 | 0,939714 |
| NOS2 | K33_LATEN | 0,00773 | 0,00000 | 0,00000 | 35,29 | 0,00000 | 0,939714 |
| NOS2 | K38_LATEN | 0,31048 | 0,00000 | 0,00000 | 36,29 | 0,00000 | 0,939714 |
| NOS2 | K39_SEHAT | | | | 37,49 | 0,00000 | |
| NOS2 | K40_SEHAT | 0,22158 | 0,00000 | 0,00000 | 38,63 | 0,00000 | |
| NOS2 | K42_LATEN | | | | 35,39 | 0,00000 | 0,939714 |
| NOS2 | K44_LATEN | | | | 31,49 | 0,00000 | 0,939714 |
| NOS2 | K45_SEHAT | | | | 36,69 | 0,00000 | |
| NOS2 | K46_SEHAT | 0,83022 | 0,00000 | 0,00000 | 35,00 | 0,00000 | |
| NOS2 | K47_LATEN | | | | 36,26 | 0,00000 | 0,939714 |
| NOS2 | K48_SEHAT | 1,00000 | 0,00000 | 0,00000 | 33,20 | 0,00000 | |
| NOS2 | K49_SEHAT | 10,07221 | 0,00000 | 0,00000 | 34,67 | 0,00000 | |
| NOS2 | K52_LATEN | 3,79971 | 0,00000 | 0,00000 | 33,51 | 0,00000 | 0,939714 |
| NOS2 | K54_LATEN | 0,88876 | 0,00000 | 0,00000 | 35,40 | 0,00000 | 0,939714 |
| NOS2 | K55_SEHAT | 0,28711 | 0,00000 | 0,00000 | 33,23 | 0,00000 | |

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|------|------------------|---------|---------|---------|-------|---------|----------|
| NOS2 | K57_SEHAT | 0,07963 | 0,00000 | 0,00000 | 37,06 | 0,00000 | |
| NOS2 | K59_LATEN | 9,44174 | 0,00000 | 0,00000 | 34,04 | 0,00000 | 0,939714 |
| NOS2 | K60_SEHAT | 0,03093 | 0,00000 | 0,00000 | 32,82 | 0,00000 | |
| NOS2 | K61_SEHAT | 0,25797 | 0,00000 | 0,00000 | 34,24 | 0,00000 | |
| NOS2 | K62_LATEN | 0,29916 | 0,00000 | 0,00000 | 31,77 | 0,00000 | 0,939714 |
| NOS2 | K65_LATEN | 0,00121 | 0,00000 | 0,00000 | 38,71 | 0,00000 | 0,939714 |
| NOS2 | K66_SEHAT | 0,00361 | 0,00000 | 0,00000 | 35,72 | 0,00000 | |
| NOS2 | K72_LATEN | 0,06913 | 0,00000 | 0,00000 | 33,10 | 0,00000 | 0,939714 |
| NOS2 | K74_LATEN | 0,19855 | 0,00000 | 0,00000 | 34,40 | 0,00000 | 0,939714 |
| NOS2 | K77_SEHAT | 0,37155 | 0,00000 | 0,00000 | 33,32 | 0,00000 | |
| NOS2 | K78_LATEN | 0,00408 | 0,00000 | 0,00000 | 33,63 | 0,00000 | 0,939714 |
| NOS2 | K80_LATEN | 1,01615 | 0,00000 | 0,00000 | 28,15 | 0,00000 | 0,939714 |
| NOS2 | T159_TB AKTIF | 0,04373 | 0,00000 | 0,00000 | 31,65 | 0,00000 | 0,038003 |
| NOS2 | T164_TB AKTIF | 0,04061 | 0,00000 | 0,00000 | 33,69 | 0,00000 | 0,038003 |
| NOS2 | T168_TB AKTIF | 0,02424 | 0,00000 | 0,00000 | 33,73 | 0,00000 | 0,038003 |
| NOS2 | T171_TB AKTIF | 0,01006 | 0,00000 | 0,00000 | 32,62 | 0,00000 | 0,038003 |
| NOS2 | T173_TB AKTIF | 0,01106 | 0,00000 | 0,00000 | 34,03 | 0,00000 | 0,038003 |
| NOS2 | T174_TB AKTIF | 0,02836 | 0,00000 | 0,00000 | 32,66 | 0,00000 | 0,038003 |
| NOS2 | T175_TB AKTIF | 0,05231 | 0,00000 | 0,00000 | 34,66 | 0,00000 | 0,038003 |
| NOS2 | T177_TB AKTIF | 0,03646 | 0,00000 | 0,00000 | 32,40 | 0,00000 | 0,038003 |
| NOS2 | T178_TB AKTIF | 0,04244 | 0,00000 | 0,00000 | 34,06 | 0,00000 | 0,038003 |
| NOS2 | T184_TB AKTIF | 0,04538 | 0,00000 | 0,00000 | 30,75 | 0,00000 | 0,038003 |
| NOS2 | T189_TB AKTIF | 0,03301 | 0,00000 | 0,00000 | 32,26 | 0,00000 | 0,038003 |
| NOS2 | T190_TB AKTIF | 0,05094 | 0,00000 | 0,00000 | 32,53 | 0,00000 | 0,038003 |
| NOS2 | T52_TB AKTIF | 0,01501 | 0,00000 | 0,00000 | 33,25 | 0,00000 | 0,038003 |
| NOS2 | T53_TB AKTIF | 0,01569 | 0,00000 | 0,00000 | 37,02 | 0,00000 | 0,038003 |
| NOS2 | T54_TB AKTIF | 0,03285 | 0,00000 | 0,00000 | 33,02 | 0,00000 | 0,038003 |
| NOS2 | T55_TB AKTIF | 0,02114 | 0,00000 | 0,00000 | 34,69 | 0,00000 | 0,038003 |
| NOS2 | T56_TB AKTIF | 0,02072 | 0,00000 | 0,00000 | 33,26 | 0,00000 | 0,038003 |
| NOS2 | T58_TB AKTIF | 0,06116 | 0,00000 | 0,00000 | 35,23 | 0,00000 | 0,038003 |
| NOS2 | T59_TB AKTIF | 0,01026 | 0,00000 | 0,00000 | 36,45 | 0,00000 | 0,038003 |
| NOS2 | T60_TB AKTIF | 0,15637 | 0,00000 | 0,00000 | 36,13 | 0,00000 | 0,038003 |
| NOS2 | T61_TB AKTIF | 0,31865 | 0,00000 | 0,00000 | 35,86 | 0,00000 | 0,038003 |
| NOS2 | T62_TB AKTIF | 0,21913 | 0,00000 | 0,00000 | 35,34 | 0,00000 | 0,038003 |
| NOS2 | T64_TB AKTIF | 0,26853 | 0,00000 | 0,00000 | 34,19 | 0,00000 | 0,038003 |
| NOS2 | T65_TB AKTIF | 0,06231 | 0,00000 | 0,00000 | 34,90 | 0,00000 | 0,038003 |
| NOS2 | T67_TB AKTIF | 0,03222 | 0,00000 | 0,00000 | 33,01 | 0,00000 | 0,038003 |
| NOS2 | T69_TB AKTIF | 0,06381 | 0,00000 | 0,00000 | 35,43 | 0,00000 | 0,038003 |

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|--------|--------------|----------|---------|---------|-------|---------|----------|
| NOS2 | T71_TB AKTIF | 0,01207 | 0,00000 | 0,00000 | 35,95 | 0,00000 | 0,038003 |
| NOS2 | T75_TB AKTIF | 0,07403 | 0,00000 | 0,00000 | 34,46 | 0,00000 | 0,038003 |
| NRAMP1 | H10_SEHAT | 0,00246 | 0,00000 | 0,00000 | 37,27 | 0,00000 | |
| NRAMP1 | H11_SEHAT | 0,00098 | 0,00000 | 0,00000 | 41,47 | 0,00000 | |
| NRAMP1 | H12_SEHAT | 0,00013 | 0,00000 | 0,00000 | 42,27 | 0,00000 | |
| NRAMP1 | H13_LATEN | 0,00151 | 0,00000 | 0,00000 | 38,21 | 0,00000 | 0,117868 |
| NRAMP1 | H14_SEHAT | 0,00061 | 0,00000 | 0,00000 | 40,68 | 0,00000 | |
| NRAMP1 | H15_LATEN | 0,00108 | 0,00000 | 0,00000 | 39,09 | 0,00000 | 0,117868 |
| NRAMP1 | H16_SEHAT | 0,00002 | 0,00000 | 0,00000 | 39,99 | 0,00000 | |
| NRAMP1 | H17_SEHAT | 15,83789 | 0,00000 | 0,00000 | 40,05 | 0,00000 | |
| NRAMP1 | H18_SEHAT | 0,02428 | 0,00000 | 0,00000 | 37,41 | 0,00000 | |
| NRAMP1 | H19_LATEN | 0,03049 | 0,00000 | 0,00000 | 39,83 | 0,00000 | 0,117868 |
| NRAMP1 | H20_LATEN | 0,00056 | 0,00000 | 0,00000 | 40,86 | 0,00000 | 0,117868 |
| NRAMP1 | H21_SEHAT | 0,24024 | 0,00000 | 0,00000 | 38,25 | 0,00000 | |
| NRAMP1 | H22_SEHAT | 0,00285 | 0,00000 | 0,00000 | 40,69 | 0,00000 | |
| NRAMP1 | H23_SEHAT | 0,37472 | 0,00000 | 0,00000 | 40,27 | 0,00000 | |
| NRAMP1 | H24_LATEN | 0,02741 | 0,00000 | 0,00000 | 39,00 | 0,00000 | 0,117868 |
| NRAMP1 | H25_SEHAT | 2,58996 | 0,00000 | 0,00000 | 37,98 | 0,00000 | |
| NRAMP1 | H26_SEHAT | 0,09070 | 0,00000 | 0,00000 | 38,08 | 0,00000 | |
| NRAMP1 | H27_SEHAT | 4,26713 | 0,00000 | 0,00000 | 37,99 | 0,00000 | |
| NRAMP1 | H28_LATEN | 0,00048 | 0,00000 | 0,00000 | 40,40 | 0,00000 | 0,117868 |
| NRAMP1 | H29_SEHAT | 0,33390 | 0,00000 | 0,00000 | 34,39 | 0,00000 | |
| NRAMP1 | H30_SEHAT | 40,76762 | 0,00000 | 0,00000 | 38,53 | 0,00000 | |
| NRAMP1 | H31_SEHAT | 0,44690 | 0,00000 | 0,00000 | 38,31 | 0,00000 | |
| NRAMP1 | H32_LATEN | 0,08000 | 0,00000 | 0,00000 | 40,03 | 0,00000 | 0,117868 |
| NRAMP1 | H33_LATEN | 0,47082 | 0,00000 | 0,00000 | 40,57 | 0,00000 | 0,117868 |
| NRAMP1 | H34_SEHAT | 0,78518 | 0,00000 | 0,00000 | 37,03 | 0,00000 | |
| NRAMP1 | H5_SEHAT | 0,00474 | 0,00000 | 0,00000 | 36,90 | 0,00000 | |
| NRAMP1 | H6_SEHAT | 0,00781 | 0,00000 | 0,00000 | 36,30 | 0,00000 | |
| NRAMP1 | H7_SEHAT | 0,02628 | 0,00000 | 0,00000 | 33,34 | 0,00000 | |
| NRAMP1 | H8_SEHAT | 0,03606 | 0,00000 | 0,00000 | 36,30 | 0,00000 | |
| NRAMP1 | H9_LATEN | 0,00075 | 0,00000 | 0,00000 | 41,77 | 0,00000 | 0,117868 |
| NRAMP1 | K32_LATEN | 0,00953 | 0,00000 | 0,00000 | 37,78 | 0,00000 | 0,117868 |
| NRAMP1 | K33_LATEN | 0,00433 | 0,00000 | 0,00000 | 37,29 | 0,00000 | 0,117868 |
| NRAMP1 | K38_LATEN | 0,02406 | 0,00000 | 0,00000 | 41,14 | 0,00000 | 0,117868 |
| NRAMP1 | K39_SEHAT | | | | 40,70 | 0,00000 | |
| NRAMP1 | K40_SEHAT | 0,20987 | 0,00000 | 0,00000 | 39,87 | 0,00000 | |
| NRAMP1 | K41_LATEN | | | | 39,79 | 0,00000 | 0,117868 |
| NRAMP1 | K42_LATEN | | | | 38,92 | 0,00000 | 0,117868 |
| NRAMP1 | K44_LATEN | | | | 35,55 | 0,00000 | 0,117868 |
| NRAMP1 | K45_SEHAT | | | | 38,08 | 0,00000 | |

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|--------|------------------|---------|---------|---------|-------|---------|----------|
| NRAMP1 | K46_SEHAT | 0,18051 | 0,00000 | 0,00000 | 38,36 | 0,00000 | |
| NRAMP1 | K47_LATEN | | | | 38,23 | 0,00000 | 0,117868 |
| NRAMP1 | K48_SEHAT | 1,00000 | 0,00000 | 0,00000 | 34,35 | 0,00000 | |
| NRAMP1 | K49_SEHAT | 0,17255 | 0,00000 | 0,00000 | 41,69 | 0,00000 | |
| NRAMP1 | K52_LATEN | 0,20858 | 0,00000 | 0,00000 | 38,85 | 0,00000 | 0,117868 |
| NRAMP1 | K54_LATEN | 0,17861 | 0,00000 | 0,00000 | 38,87 | 0,00000 | 0,117868 |
| NRAMP1 | K55_SEHAT | 0,10964 | 0,00000 | 0,00000 | 35,77 | 0,00000 | |
| NRAMP1 | K57_SEHAT | 0,01638 | 0,00000 | 0,00000 | 40,49 | 0,00000 | |
| NRAMP1 | K59_LATEN | 3,59835 | 0,00000 | 0,00000 | 36,58 | 0,00000 | 0,117868 |
| NRAMP1 | K60_SEHAT | 0,00727 | 0,00000 | 0,00000 | 36,07 | 0,00000 | |
| NRAMP1 | K61_SEHAT | 0,02473 | 0,00000 | 0,00000 | 38,77 | 0,00000 | |
| NRAMP1 | K62_LATEN | 0,07739 | 0,00000 | 0,00000 | 34,87 | 0,00000 | 0,117868 |
| NRAMP1 | K64_LATEN | 0,00006 | 0,00000 | 0,00000 | 41,55 | 0,00000 | 0,117868 |
| NRAMP1 | K65_LATEN | 0,00117 | 0,00000 | 0,00000 | 39,92 | 0,00000 | 0,117868 |
| NRAMP1 | K66_SEHAT | 0,00053 | 0,00000 | 0,00000 | 39,64 | 0,00000 | |
| NRAMP1 | K67_LATEN | 0,00261 | 0,00000 | 0,00000 | 38,50 | 0,00000 | 0,117868 |
| NRAMP1 | K71_LATEN | | | | 37,43 | 0,00000 | 0,117868 |
| NRAMP1 | K74_LATEN | 0,05588 | 0,00000 | 0,00000 | 37,38 | 0,00000 | 0,117868 |
| NRAMP1 | K77_SEHAT | 0,02357 | 0,00000 | 0,00000 | 38,46 | 0,00000 | |
| NRAMP1 | K78_LATEN | 0,00075 | 0,00000 | 0,00000 | 37,24 | 0,00000 | 0,117868 |
| NRAMP1 | K80_LATEN | 0,12755 | 0,00000 | 0,00000 | 32,30 | 0,00000 | 0,117868 |
| NRAMP1 | T159_TB AKTIF | 0,00771 | 0,00000 | 0,00000 | 35,30 | 0,00000 | 0,025601 |
| NRAMP1 | T164_TB AKTIF | 0,01212 | 0,00000 | 0,00000 | 36,59 | 0,00000 | 0,025601 |
| NRAMP1 | T168_TB AKTIF | 0,00350 | 0,00000 | 0,00000 | 37,67 | 0,00000 | 0,025601 |
| NRAMP1 | T171_TB AKTIF | 0,00335 | 0,00000 | 0,00000 | 35,36 | 0,00000 | 0,025601 |
| NRAMP1 | T173_TB AKTIF | 0,00203 | 0,00000 | 0,00000 | 37,63 | 0,00000 | 0,025601 |
| NRAMP1 | T174_TB AKTIF | 0,00700 | 0,00000 | 0,00000 | 35,83 | 0,00000 | 0,025601 |
| NRAMP1 | T175_TB AKTIF | 0,07427 | 0,00000 | 0,00000 | 35,31 | 0,00000 | 0,025601 |
| NRAMP1 | T177_TB AKTIF | 0,00519 | 0,00000 | 0,00000 | 36,37 | 0,00000 | 0,025601 |
| NRAMP1 | T178_TB AKTIF | 0,00824 | 0,00000 | 0,00000 | 37,58 | 0,00000 | 0,025601 |
| NRAMP1 | T184_TB AKTIF | 0,00266 | 0,00000 | 0,00000 | 36,00 | 0,00000 | 0,025601 |
| NRAMP1 | T189_TB AKTIF | 0,00563 | 0,00000 | 0,00000 | 35,96 | 0,00000 | 0,025601 |
| NRAMP1 | T190_TB AKTIF | 0,00398 | 0,00000 | 0,00000 | 37,37 | 0,00000 | 0,025601 |
| NRAMP1 | T52_TB AKTIF | 0,00178 | 0,00000 | 0,00000 | 37,48 | 0,00000 | 0,025601 |
| NRAMP1 | T53_TB AKTIF | 0,01666 | 0,00000 | 0,00000 | 38,09 | 0,00000 | 0,025601 |
| NRAMP1 | T54_TB AKTIF | 0,00595 | 0,00000 | 0,00000 | 36,64 | 0,00000 | 0,025601 |
| NRAMP1 | T55_TB AKTIF | 0,00813 | 0,00000 | 0,00000 | 37,22 | 0,00000 | 0,025601 |
| NRAMP1 | T56_TB AKTIF | 0,00838 | 0,00000 | 0,00000 | 35,72 | 0,00000 | 0,025601 |

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|--------|--------------|---------|---------|---------|-------|---------|----------|
| NRAMP1 | T58_TB AKTIF | 0,02277 | 0,00000 | 0,00000 | 37,81 | 0,00000 | 0,025601 |
| NRAMP1 | T59_TB AKTIF | 0,01040 | 0,00000 | 0,00000 | 37,59 | 0,00000 | 0,025601 |
| NRAMP1 | T60_TB AKTIF | 0,17015 | 0,00000 | 0,00000 | 37,17 | 0,00000 | 0,025601 |
| NRAMP1 | T61_TB AKTIF | 0,15836 | 0,00000 | 0,00000 | 38,02 | 0,00000 | 0,025601 |
| NRAMP1 | T62_TB AKTIF | 0,02429 | 0,00000 | 0,00000 | 39,67 | 0,00000 | 0,025601 |
| NRAMP1 | T64_TB AKTIF | 0,06763 | 0,00000 | 0,00000 | 37,33 | 0,00000 | 0,025601 |
| NRAMP1 | T65_TB AKTIF | 0,03519 | 0,00000 | 0,00000 | 36,88 | 0,00000 | 0,025601 |
| NRAMP1 | T67_TB AKTIF | 0,00140 | 0,00000 | 0,00000 | 38,69 | 0,00000 | 0,025601 |
| NRAMP1 | T69_TB AKTIF | 0,01101 | 0,00000 | 0,00000 | 39,13 | 0,00000 | 0,025601 |
| NRAMP1 | T71_TB AKTIF | 0,06807 | 0,00000 | 0,00000 | 34,61 | 0,00000 | 0,025601 |
| NRAMP1 | T75_TB AKTIF | 0,02814 | 0,00000 | 0,00000 | 37,01 | 0,00000 | 0,025601 |
| NRAMP1 | T76_TB AKTIF | 0,00316 | 0,00000 | 0,00000 | 40,87 | 0,00000 | 0,025601 |
| NRAMP1 | T77_TB AKTIF | 0,00034 | 0,00000 | 0,00000 | 41,27 | 0,00000 | 0,025601 |

LAMPIRAN 5 :PRIMER YANG DIGUNAKAN:

PRIMER *NRAMP1* F:5'-GCATCTCCCAATTCATGGT-3', 17863-17882 (244 bp)

R:5'-AACTGTCCCACTCTATCCTG -3' 18106-18087

PRIMER *NOS2A* F:5'-CAGAGGACCCAGGGACAA -3', 17763-17782

R:5'-TATGTACAACGTTATCCCAC -3' 18061-18042

| |
|-----------|
| (299 bp) |
|-----------|

LAMPIRAN 6. HOUSE KEEPING GENE

Homo sapiens glyceraldehyde-3-phosphate dehydrogenase (GAPDH), transcript variant 7, mRNA

NCBI Reference Sequence: NM_001357943.2

FASTA Graphics

Go to:

LOCUS NM_001357943 1231 bp mRNA linear PRI 18-NOV-2020

DEFINITION Homo sapiens glyceraldehyde-3-phosphate dehydrogenase (GAPDH), transcript variant 7, mRNA.

ACCESSION NM_001357943

VERSION NM_001357943.2

KEYWORDS RefSeq.

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.

REFERENCE 1 (bases 1 to 1231)

AUTHORS Haenig C, Atias N, Taylor AK, Mazza A, Schaefer MH, Russ J, Riechers SP, Jain S, Coughlin M, Fontaine JF, Freibaum BD, Brusendorf L, Zenkner M, Porras P, Stroedicke M, Schnoegl S, Arnsburg K, Boeddrich A, Pigazzini L, Heutink P, Taylor JP, Kirstein J, Andrade-Navarro MA, Sharan R and Wanker EE.

TITLE Interactome Mapping Provides a Network of Neurodegenerative Disease Proteins and Uncovers Widespread Protein Aggregation in Affected Brains

JOURNAL Cell Rep 32 (7), 108050 (2020)

PUBMED 32814053

REFERENCE 2 (bases 1 to 1231)

AUTHORS Tsai CW, Tsai CF, Lin KH, Chen WJ, Lin MS, Hsieh CC and Lin CC.

TITLE An investigation of the correlation between the S-glutathionylated GAPDH levels in blood and Alzheimer's disease progression

JOURNAL PLoS One 15 (5), e0233289 (2020)

PUBMED 32469899

REMARK GeneRIF: An investigation of the correlation between the S-glutathionylated GAPDH levels in blood and Alzheimer's disease progression.
Publication Status: Online-Only

REFERENCE 3 (bases 1 to 1231)

AUTHORS Monrad I, Madsen C, Lauridsen KL, Honore B, Plesner TL, Hamilton-Dutoit S, d'Amore F and Ludvigsen M.

TITLE Glycolytic biomarkers predict transformation in patients with follicular lymphoma

JOURNAL PLoS One 15 (5), e0233449 (2020)

PUBMED 32442224

- REMARK GeneriF: Glycolytic biomarkers predict transformation in patients with follicular lymphoma.
Publication Status: Online-Only
- REFERENCE 4 (bases 1 to 1231)
- AUTHORS Bednarz-Misa I, Neubauer K, Zacharska E, Kapturkiewicz B and Krzystek-Korpacka M.
- TITLE Whole blood ACTB, B2M and GAPDH expression reflects activity of inflammatory bowel disease, advancement of colorectal cancer, and correlates with circulating inflammatory and angiogenic factors: Relevance for real-time quantitative PCR
- JOURNAL Adv Clin Exp Med 29 (5), 547-556 (2020)
- PUBMED 32424999
- REMARK GeneriF: Whole blood ACTB, B2M and GAPDH expression reflects activity of inflammatory bowel disease, advancement of colorectal cancer, and correlates with circulating inflammatory and angiogenic factors: Relevance for real-time quantitative PCR.
- REFERENCE 5 (bases 1 to 1231)
- AUTHORS Wagener J, Schneider JJ, Baxmann S, Kalbacher H, Borelli C, Nuding S, Kuchler R, Wehkamp J, Kaeser MD, Mailander-Sanchez D, Braunsdorf C, Hube B, Schild L, Forssmann WG, Korting HC, Liepke C and Schaller M.
- TITLE A peptide derived from the highly conserved protein GAPDH is involved in tissue protection by different antifungal strategies and epithelial immunomodulation
- JOURNAL J Invest Dermatol 133 (1), 144-153 (2013)
- PUBMED 22832495
- REMARK GeneriF: The protein encoded by this gene contains a peptide that displays antimicrobial activity against *E. coli*, *P. aeruginosa*, and *C. albicans*.
- REFERENCE 6 (bases 1 to 1231)
- AUTHORS Tristan C, Shahani N, Sedlak TW and Sawa A.
- TITLE The diverse functions of GAPDH: views from different subcellular compartments
- JOURNAL Cell Signal 23 (2), 317-323 (2011)
- PUBMED 20727968
- REMARK GeneriF: GAPDH is a moonlighting protein that functions as a glycolytic enzyme as well as a uracil DNA glycosylase.
Review article
- REFERENCE 7 (bases 1 to 1231)
- AUTHORS Serville, F., Junien, C., Kaplan, J.C., Gachet, M., Cadoux, J. and Broustet, A.
- TITLE Gene dosage effect for human triosephosphate isomerase and glyceraldehyde-3-phosphate dehydrogenase in partial trisomy 12p13 and trisomy 18p
- JOURNAL Hum Genet 45 (1), 63-69 (1978)
- PUBMED 730182
- REFERENCE 8 (bases 1 to 1231)
- AUTHORS Edwards, Y.H., Clark, P. and Harris, H.
- TITLE Isozymes of glyceraldehyde-3-phosphate dehydrogenase in man and other mammals
- JOURNAL Ann Hum Genet 40 (1), 67-77 (1976)
- PUBMED 183598
- REFERENCE 9 (bases 1 to 1231)

AUTHORS Mercer, W.D., Winn, S.I. and Watson, H.C.
 TITLE Twinning in crystals of human skeletal muscle
 D-glyceraldehyde-3-phosphate dehydrogenase
 JOURNAL J Mol Biol 104 (1), 277-283 (1976)
 PUBMED 957435
 REFERENCE 10 (bases 1 to 1231)
 AUTHORS Bruns, G.A. and Gerald, P.S.
 TITLE Human glyceraldehyde-3-phosphate dehydrogenase in man-rodent
 somatic cell hybrids
 JOURNAL Science 192 (4234), 54-56 (1976)
 PUBMED 176725
 COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The
 reference sequence was derived from AC006064.10.
 On Jun 1, 2019 this sequence version replaced NM_001357943.1.

Summary: This gene encodes a member of the
 glyceraldehyde-3-phosphate dehydrogenase protein family. The
 encoded protein has been identified as a moonlighting protein
 based on its ability to perform mechanistically distinct functions. The
 in product of this gene catalyzes an important energy-yielding step
 in carbohydrate metabolism, the reversible oxidative phosphorylation
 of glyceraldehyde-3-phosphate in the presence of inorganic
 encoded phosphate and nicotinamide adenine dinucleotide (NAD). The
 a protein has additionally been identified to have uracil DNA
 glycosylase activity in the nucleus. Also, this protein contains
 mouse peptide that has antimicrobial activity against *E. coli*, *P.*
aeruginosa, and *C. albicans*. Studies of a similar protein in
 surface have assigned a variety of additional functions including
 nitrosylation of nuclear proteins, the regulation of mRNA
 stability, and acting as a transferrin receptor on the cell
 site of macrophage. Many pseudogenes similar to this locus are present
 in the human genome. Alternative splicing results in multiple
 transcript variants. [provided by RefSeq, Nov 2014].

Transcript Variant: This variant (7) uses an alternate splice
 site but retains the reading frame compared to variant 1. The encoded
 isoform (4) is shorter than isoform 1.

Sequence Note: The RefSeq transcript and protein were derived
 from genomic sequence to make the sequence consistent with the
 reference genome assembly. The genomic coordinates used for the transcript
 record were based on alignments.

Publication Note: This RefSeq record includes a subset of the
 Gene publications that are available for this gene. Please see the
 record to access additional publications.

```
##Evidence-Data-START##
Transcript exon combination :: BM916497.1 [ECO:0000332]
RNAseq introns              :: single sample supports all introns
                               SAMEA2145743, SAMEA2151741
                               [ECO:0000348]
```

```
##Evidence-Data-END##
```

```
##RefSeq-Attributes-START##
multifunctional gene product(s) :: PMID: 20727968
Protein has antimicrobial activity :: PMID: 22832495
##RefSeq-Attributes-END##
```

```
COMPLETENESS: complete on the 3' end.
```

| PRIMARY | REFSEQ_SPAN | PRIMARY_IDENTIFIER | PRIMARY_SPAN | COMP |
|---------|-------------|--------------------|--------------|------|
| | 1-53 | AC006064.10 | 91598-91650 | |
| | 54-105 | AC006064.10 | 91891-91942 | |
| | 106-205 | AC006064.10 | 93575-93674 | |
| | 206-258 | AC006064.10 | 93819-93871 | |
| | 259-349 | AC006064.10 | 94001-94091 | |
| | 350-465 | AC006064.10 | 94182-94297 | |
| | 466-547 | AC006064.10 | 94390-94471 | |
| | 548-960 | AC006064.10 | 94665-95077 | |
| | 961-1231 | AC006064.10 | 95182-95452 | |


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FEATURES
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                /db_xref="HGNC:HGNC:4141"
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                /EC_number="1.2.1.12"
                /note="isoform 4 is encoded by transcript variant 7;
                aging-associated gene 9 protein; peptidyl-cysteine
                S-nitrosylase GAPDH; epididymis secretory sperm binding
                protein Li 162eP; Oct1 coactivator in S phase, 38 Kd
                component; OCAS, p38 component"
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                /product="glyceraldehyde-3-phosphate dehydrogenase"
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TANVSVVDLTCRLEKPAKYDDIKKVVVKQASEGPLKGILGYTEHQVVSSDFNSDTHSST
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                  /product="hGAPDH (2-32)"
                  /experiment="DESCRIPTION:antimicrobial
                  peptide[PMID:22832495]"
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                  /inference="alignment:Splign:2.1.0"
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                  /gene="GAPDH"
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                  /gene="GAPDH"
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exon              548..960
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regulatory        1208..1213
                  /regulatory_class="polyA_signal_sequence"
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                  /note="hexamer: AATAAA"
polyA_site        1231
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                  /gene_synonym="G3PD; GAPD; HEL-S-162eP"

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/note="major polyA site"

ORIGIN

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121 ggcctggtc accagggctg cttttaactc tggtaaagtg gatattgttg ccatcaatga

181 ccccttcatt gacctcaact acatggctga gaacgggaag cttgtcatca atggaaatcc

241 catcaccatc ttccaggagc gagatccctc caaaatcaag tggggcgatg ctggcgtga

301 gtacgtcgtg gagtccactg gcgtcttcac caccatggag aaggctgggg ctcatattga

361 ggggggagcc aaaaggtca tcatctctgc cccctctgct gatgccccca tgttcgtcat

GAPDH forward 5'-cctgcac

421 ggggtgtaac catgagaagt atgacaacag cctcaagatc atcagcaatg cctcctgcac

caccaactgc tta-3' 474-490

481 caccaactgc ttatgcacccc tggccaaggt catccatgac aactttggta tcgtggaagg

GAPDH reverse 5'- ggccatcc acagtcttct ggg -3' 575-593

cccagaag actgtggatg gcc (120 bp)

541 actcatgacc acagtccatg ccatcactgc caaccagaag actgtggatg gccctcctc

601 gaaactgtgg cgtgatggcc gcggggctct ccagaacatc atccctgcct ctactggcgc

661 tgccaaggct gtgggcaagg tcatccctga gctgaacggg aagctcactg gcatggcctt

721 ccgtgtcccc actgccaacg tgtcagtggg ggacctgacc tgccgtctag aaaaacctgc

781 caaatatgat gacatcaaga aggtggtgaa gcaggcgtcg gagggcccc tcaagggcat

841 cctgggctac actgagcacc aggtggtctc ctctgacttc aacagcgaca cccactcctc

901 cacctttgac gctggggctg gcattgccct caacgaccac tttgtcaagc tcatttcctg

961 gtatgacaac gaatttggct acagcaacag ggtggtggac ctcatggccc acatggcctc

1021 caaggagtaa gaccctgga ccaccagccc cagcaagagc acaagaggaa gagagagacc

1081 ctcaactgctg gggagtccct gccacactca gtccccacc aactgaatc tcccctcctc

1141 acagttgcca tgtagacccc ttgaagaggg gaggggccta gggagccgca ccttgtcatg

1201 taccatcaat aaagtaccct gtgctcaacc a

//

LAMPIRAN 7.POSISI PRIMER PADA SEKUENS GEN *NRAMP1*

- PRIMER *NRAMP1*
 - F:5'-GCATCTCCCCAATTCATGGT-3', 17863-17882

Homo sapiens solute carrier family 11 member 1 (SLC11A1), RefSeqGene on chromosome 2
 Sequence ID: [NG_012128.1](#) Length: 21866 Number of Matches: 1

Range 1: 17863 to 17882 [GenBank](#) [Graphics](#) [Next Match](#) [Previous Match](#)

| Score | Expect | Identities | Gaps | Strand |
|---------------|--------|-------------|----------|-----------|
| 40.1 bits(20) | 0.020 | 20/20(100%) | 0/20(0%) | Plus/Plus |

```

Query 1      GCATCTCCCCAATTCATGGT  20
             |||
Sbjct 17863 GCATCTCCCCAATTCATGGT 17882
  
```

- R:5'-AACTGTCCCCTCTATCCTG -3' 18106-18087

Homo sapiens solute carrier family 11 member 1 (SLC11A1), RefSeqGene on chromosome 2
 Sequence ID: [NG_012128.1](#) Length: 21866 Number of Matches: 1

Range 1: 18087 to 18106 [GenBank](#) [Graphics](#) [Next Match](#) [Previous Match](#)

| Score | Expect | Identities | Gaps | Strand |
|---------------|--------|-------------|----------|------------|
| 40.1 bits(20) | 0.020 | 20/20(100%) | 0/20(0%) | Plus/Minus |

```

Query 1      AACTGTCCCCTCTATCCTG  20
             |||
Sbjct 18106 AACTGTCCCCTCTATCCTG 18087
  
```

GenBank [Send to:](#)

Homo sapiens solute carrier family 11 member 1 (SLC11A1), RefSeqGene on chromosome 2

NCBI Reference Sequence: [NG_012128.1](#)
[FASTA](#) [Graphics](#)

[Go to:](#)

LOCUS NG_012128 21866 bp DNA linear PRI 12-JUN-2020
 DEFINITION Homo sapiens solute carrier family 11 member 1 (SLC11A1), RefSeqGene on chromosome 2.
 ACCESSION NG_012128
 VERSION NG_012128.1
 KEYWORDS RefSeq; RefSeqGene.
 SOURCE Homo sapiens (human)
 ORGANISM Homo sapiens

Change region shown

Whole sequence
 Selected region
 from: to:

Customize view

Analyze this sequence

```

17581 tgagcctctc tcgtgtcccc caggctgaac aaggtcgtca cctcttccat catggtgcta
17641 gtctgggcca tcaacctcta cttcgtggtc agctatctgc ccagcctgcc ccaccctgcc
17701 tacttcggcc ttgcagcctt gctggccgca gcctacctgg gcctcagcac ctacctggta
17761 cagtagggcc aggggatgcc ttgggaatgg atgaggggaag gacaagaggc aaccaatggg
PRIMER NRAMP1 F:5'-gcactctcc ccaattcatg
17821 gagggtttgg ggggacacaa tggggcttcc ccagaggtct tggcactctcc ccaattcatg
gt-3', 17863-17882 (244 bp)
17881 gttggccctc cccaggtct ggacctgttg ccttgcccac ggagccacct ttctggcca
17941 cagctcccac caccacttcc tgtatgggct ccttgaagag gaccagaaag gggagacctc
18001 tggctaggcc cacaccaggg cctggctggg agtggcatgt atgacgtgac tggcctgctg
R:5'- aact gtcccactct atcctg -3' 18106-18087
cagg atagagtggg acagtt
18061 gatgtggagg gggcgcgtgc aggcagcagg atagagtggg acagttcctg agaccagcca
18121 acctgggggc tttagggacc tgtgtttcc tagcgcagcc atgtgattac cctctgggtc
.....

```

LAMPIRAN 8.**POSISI PRIMER PADA SEKUENS GEN NOS2A**

- PRIMER NOS2
 - F:5'- CAGAGGACCCAGGGACAA -3', 17763-17782

Homo sapiens nitric oxide synthase 2 (NOS2), RefSeqGene on chromosome 17
 Sequence ID: [NG 011470.1](#) Length: 50764 Number of Matches: 1

Range 1: 17763 to 17780 [GenBank](#) [Graphics](#) [▼ Next Match](#) [▲ Previous Match](#)

| Score | Expect | Identities | Gaps | Strand |
|---------------|--------|-------------|----------|-----------|
| 36.2 bits(18) | 0.21 | 18/18(100%) | 0/18(0%) | Plus/Plus |

```

Query 1      CAGAGGACCCAGGGACAA 18
             |||
Sbjct 17763  CAGAGGACCCAGGGACAA 17780
  
```

- R:5'- AACTGTCCCACTCTATCCTG -3' 18106-18087

Homo sapiens nitric oxide synthase 2 (NOS2), RefSeqGene on chromosome 17Sequence ID: [NG 011470.1](#) Length: 50764 Number of Matches: 1Range 1: 18042 to 18061 [GenBank](#) [Graphics](#)[▼ Next Match](#) [▲ Previous Match](#)

| Score | Expect | Identities | Gaps | Strand |
|---------------|--------|-------------|----------|------------|
| 40.1 bits(20) | 0.020 | 20/20(100%) | 0/20(0%) | Plus/Minus |

```

Query 1      TATGTACAACGTTATCCCAC 20
             |||
Sbjct 18061  TATGTACAACGTTATCCCAC 18042
  
```

GenBank

Send to: ▾

Showing 5.71kb region from base 17763 to 23468.

Homo sapiens nitric oxide synthase 2 (NOS2), RefSeqGene on chromosome 17

NCBI Reference Sequence: NG_011470.1

[FASTA](#) [Graphics](#)

LOCUS NG_011470 5706 bp DNA linear PRI 08-JUN-2020

DEFINITION Homo sapiens nitric oxide synthase 2 (NOS2), RefSeqGene on chromosome 17.

ACCESSION [NG_011470](#) REGION: 17763..23468

VERSION NG_011470.1

KEYWORDS RefSeq; RefSeqGene.

SOURCE Homo sapiens (human)

ORGANISM [Homo sapiens](#)

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.

COMMENT REVIEWED [REFSEQ](#): This record has been curated by NCBI staff. The reference sequence was derived from [AC130289.11](#). This sequence is a reference standard in the [RefSeqGene](#) project.

Summary: Nitric oxide is a reactive free radical which acts as a biologic mediator in several processes, including neurotransmission and antimicrobial and antitumoral activities. This gene encodes a nitric oxide synthase which is expressed in liver and is inducible by a combination of lipopolysaccharide and certain cytokines. Three related pseudogenes are located within the Smith-Magenis syndrome region on chromosome 17. [provided by RefSeq, Jul 2008].

| PRIMARY | REFSEQ_SPAN | PRIMARY_IDENTIFIER | PRIMARY_SPAN | COMP |
|---------|-------------|--------------------|--------------|------|
| | 1-50764 | AC130289.11 | 61545-112308 | c |

Change region shown Whole sequence Selected region

from: 17763 to: 23468

Update View

Customize view**Analyze this sequence**

Run BLAST

Pick Primers

Highlight Sequence Features

Find in this Sequence

Articles about the NOS2 gene

Active modulation of human erythrocyte mechanics. [Am J Physiol Cell Physiol. 2020]

Evaluation of iNOS -2087A>G polymorphism in recurrent pre [Rom J Morphol Embryol. 2019]


Fatal Cytomegalovirus Infection in an Adult with Inherited NOS2 Deficiency [N Engl J Med. 2020]

```


17581 ggagaagagg tgcagggagc cggagcagcc agagaggagc caggtggcca ggagagctgg
17641 cccagagga gggtagcaag aggccgaatg gccaccctc accactgac tctctcttc
17701 cagattttaa cttgcaggtc caaatcttgc ctgggggtcca ttatgactcc caaaagttg
      F 5'-cagaggac ccagggacaa gc-3' Primer F NOS2 17763-17782, |
17761 accagaggac ccagggacaa gcctaccctc ccagatgagc ttctacctca agctatcgaa
17821 tttgtcaacc aatattacgg ctcttcaaa gagtaaggct tgcctcctgc agggtcgctg
17881 cctcctgccc ttctcctgc tctcctgtct ctaccatca cctctgatc ctagctagat
17941 cccttttctt tccagatttg tgggttaaa tcaactatgat tttgcagagc gaaaatcacg
      R 5'-tatgtacaa cgttatccca
      5'-gtgggataa cgttgtacat
18001 gttttctagg ggagaagacc ctggagcagg ttctcataat gtgggataa cgttgtacat
      c-3' Primer R NOS2 18042-18061
      a-3'
18061 agcaatacca gttaaaagt actgaattcg aaccctggct cccgattgt gtctgaacgt
18121 cctcatcata ttaatggcaa aaactgcaac tacttttgca ccaacctaata ataaatggg

```

LAMPIRAN 9. .REKOMENDASI PERSETUJUAN ETIK PENELITIAN

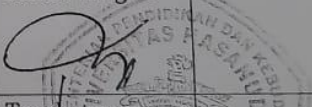



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN KESEHATAN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR, 90245.
Contact Person: dr. Agussalim Bukhari, MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431



REKOMENDASI PERSETUJUAN ETIK
Nomor : 1125/UN4.6.4.5.31/ PP36/ 2019
Tanggal: 26 Nopember 2019

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

| | | | |
|--|--|--|---------------------------|
| No Protokol | UH19100800 | No Sponsor | |
| Peneliti Utama | dr. Irda Handayani, SpPK | Protokol | |
| Judul Peneliti | Analisis Ekspresi Gen NRAMP 1 dan no S2A dan Kadar Protein Pada Penderita Tuberkulosis Aktif dan Laten di Makassar | | |
| No Versi Protokol | 2 | Tanggal Versi | 20 Nopember 2019 |
| No Versi PSP | 2 | Tanggal Versi | 20 Nopember 2019 |
| Tempat Penelitian | Unit Penelitian RS Universitas Hasanuddin Makassar | | |
| Jenis Review | <input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal | Masa Berlaku 26 Nopember 2019 sampai 26 Nopember 2020 | Frekuensi review lanjutan |
| Ketua Komisi Etik Penelitian Kesehatan FKUH | Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K) | Tanda tangan  | |
| Sekretaris Komisi Etik Penelitian Kesehatan FKUH | 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 Laporan 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 protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

LAMPIRAN 10. CURICULUM VITAE

A.DATA PRIBADI

- 1.Nama ; irda handayani
- 2.Tempat /tgl lahir : Makassar,24 Mei 1967
- 3.Alat : Jl.Pelanduk no28 Makassar
- 4.Status Sipil :
- a>Nama Suami : Muhammad Nasrum Massi
- b>Nama Anak : - Ayu Andini Wulandari
- Nada Indira Ramadhani
- Aulia Puspita Dewi

B.RIWAYAT PENDIDIKAN

a.Pendidikan Formal :

- Tamat SD Tahun 1979 di Makassar
- Tamat SMP Tahun 1982 di Makassar
- Tamat SMA Tahun 1985 di Makassar
- Sarjana (S1) Tahun 1994 di UNHAS
- Magister(S2) Tahun 2008 di UNHAS

b.Pendidikan Non Formal

C.PEKERJAAN DAN RIWAYAT PEKERJAAN

- Pekerjaan : PNS
- NIP : 196705241998032001
- Pangkat/gol :. Pembina Tingkat 1 / IV b
- Jabatan : Dokter Pendidik Klinis Madya

