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LAMPIRAN

Lampiran 2. Gen Pengkode fbpA pada Genom *Mycobacterium tuberculosis H37Rv*

Mycobacterium tuberculosis H37Rv, complete genome

GenBank: CP003248.2

[GenBank](#) [Graphics](#)

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>CP003248.2:4265809-4266707 Mycobacterium tuberculosis H37Rv, complete genome
TCTGTTCCGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGCCCGTTGCAGGT
CGGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGTACCGCTGTCCGGGAAGTCGAA
CACGCCGTTGTGGCCGCCACCGCGTTGTAGGCGTCTTGAACTTGATGTTGCTGGTCCGCACGAAGCCC
TCGAGGAACTTGGCCGGCAGGTTGTTGCCACCCAGATCCGACGGCTTGCCGTTGCCGCAGTACACCCAGA
CGCGGGTGTGTTGGCGATCAGCTTCCCGACGTTCAACAGCGGGTCGTTGCGCTGCCACGCCGGTCTCTC
CTTCGGGCCCCACATGTCGGAGGCCTTGTAGCCGCCAGCGTCACCCATCGCCAGGCCGATCAGGGTGGGA
CCCATCGCTGGGAGGGTCCAACAGGCCCGACATCGCTCCCGCTAGACGAACTGCTGGGGGTGATAGA
TCGCCAGCGTCAGCGCCGAAGAAGCAGCCATCGAAAAGACCGACGACGGCGCTTCCGGTGGGCTTGACGTG
CCTGTTGGCCTGCAGCCACCCCGCAGCTCGCTGGTCAGGAAGGTCTCCCACTTGTAAGTCTGGCAACCG
GCCTTGCCGCAGGCGGGCTGGTACCAGTCGGAGTAGAAGCTTGACTGGCCACCCACCGGCATGACCACCG
ACAGGCCCGACTGGTCGTACCACTCGAACGCCGGGGTGTGATGTCCAGCCGCTGAAGTCGTCTGCGC
GCGCAGGCCGTCGAGCAGGTACAGGGCGGGCGAGTTGGCACCACCACTTTGGAATTGGACCTTGATGTCA
CGGCCCATCGACGGCGACGGCACCTGCAGGTACTCCACCGCAAGCCCGGCCGGGAAAA
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Lampiran 3. Hasil BLAST Sampel

A. Hasil BLAST Sampel B1

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Query: None Query ID: lc1|Query_121603 Length: 888

>Mycobacterium tuberculosis strain H37Rv-1 chromosome, complete genome
Sequence ID: CP118619.1 Length: 4417942
Range 1: 4272842 to 4272989

Score:1608 bits(866), Expect:0.0,
Identities:867/868(99%), Gaps:0/868(0%), Strand: Plus/Plus

Query 7      TCTGTTCCGAGCTAGGCGCCCTG99GCGCG99GCCCGGTGTTG99CGTG99CACCCAGTGCC 66
            |||
Sbjct 4272842 TCTGTTCCGAGCTAGGCGCCCTG99GCGCG99GCCCGGTGTTG99CGTG99CACCCAGTGCC 4272181

Query 67     CGTTGCAGGTC99GCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCCAGCTGTGCGTA 126
            |||
Sbjct 4272182 CGTTGCAGGTC99GCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCCAGCTGTGCGTA 4272161

Query 127    CCGCTGTCCG99AAGTCGAACACGCCGTTGTGGCCGCCACCGGCGTTGTAGGCGCTTTGG 186
            |||
Sbjct 4272162 CCGCTGTCCG99AAGTCGAACACGCCGTTGTGGCCGCCACCGGCGTTGTAGGCGCTTTGG 4272221

Query 187    AACTTGATGTTGCTGGTCCGACGAAGCCCTCGAG99AACTTGGCCG99CAGGTTGTTGCCA 246
            |||
Sbjct 4272222 AACTTGATGTTGCTGGTCCGACGAAGCCCTCGAG99AACTTGGCCG99CAGGTTGTTGCCA 4272281

Query 247    CCCAGATCCGACGGCTTGCCGTTGCCGCGAGTACACCCAGACGCG99GTTGTTGGCGATC 306
            |||
Sbjct 4272282 CCCAGATCCGACGGCTTGCCGTTGCCGCGAGTACACCCAGACGCG99GTTGTTGGCGATC 4272341

Query 387    AGCTTCCCAGCTTCAACAGCG99GTCGTTGCGCTGCCACGCG99GTCCTCCTTC99GCC 366
            |||
Sbjct 4272342 AGCTTCCCAGCTTCAACAGCG99GTCGTTGCGCTGCCACGCG99GTCCTCCTTC99GCC 4272401

Query 367    CACATGTCG99AGGCTTGTAGCCGCCAGCGTCAACCATCGCCAG99CGATCAG99TGGGA 426
            |||
Sbjct 4272482 CACATGTCG99AGGCTTGTAGCCGCCAGCGTCAACCATCGCCAG99CGATCAG99TGGGA 4272461

Query 427    CCCATCGCCTG99AG99GTCACACAG99CCGACATCGCTCCC99GTCAGACGA99TGTGG 486
            |||
Sbjct 4272462 CCCATCGCCTG99AG99GTCACACAG99CCGACATCGCTCCC99GTCAGACGA99TGTGG 4272521

Query 487    G99TGATAGATCGCCAGCGTCAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGACGGCG 546
            |||
Sbjct 4272522 G99TGATAGATCGCCAGCGTCAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGACGGCG 4272581

Query 547    CTTCCGGTGG99CTTGACGTGCCTGTTGGCCTGCAGCCACCCCG99CAGCTCGCTGGTCAG 606
            |||
Sbjct 4272582 CTTCCGGTGG99CTTGACGTGCCTGTTGGCCTGCAGCCACCCCG99CAGCTCGCTGGTCAG 4272641

Query 687    AAGTCTCCCACCTTGTAA99TCTG99CAACCG99CTTGCCGAC99CG99TGGTACCAGTCG 666
            |||
Sbjct 4272642 AAGTCTCCCACCTTGTAA99TCTG99CAACCG99CTTGCCGAC99CG99TGGTACCAGTCG 4272701

Query 667    GAGTAGAAGCTTGTACTG99CACCCACCG99CATGACCACCGACAG99CCGACTGGTCGTAC 726
            |||
Sbjct 4272782 GAGTAGAAGCTTGTACTG99CACCCACCG99CATGACCACCGACAG99CCGACTGGTCGTAC 4272761

Query 727    CACTCGAACGCG99GTTGATGTCCCAGCGCTGAAGTCGTCCTGCGCGCGCAG99CG 786
            |||
Sbjct 4272762 CACTCGAACGCG99GTTGATGTCCCAGCGCTGAAGTCGTCCTGCGCGCGCAG99CG 4272821

Query 787    TCGAGCAGGTACAG99CG99GAGTTGGCACCACCACTTTGGAATGGACCTTGTATGCA 846
            |||
Sbjct 4272822 TCGAGCAGGTACAG99CG99GAGTTGGCACCACCACTTTGGAATGGACCTTGTATGCA 4272881

Query 847    CG99CCATCGACG99CGACGGCACATGCA 874
            |||
Sbjct 4272882 CG99CCATCGACG99CGACGGCACCTGCA 4272989

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B. Hasil BLAST Sampel B2

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Query: None Query ID: lcl|Query_91075 Length: 887

>Mycobacterium tuberculosis strain H37Rv-1 chromosome, complete genome
Sequence ID: CP118619.1 Length: 4417942
Range 1: 4272842 to 4272910

Score:1600 bits(866), Expect:0.0,
Identities:869/870(99%), Gaps:1/870(0%), Strand: Plus/Plus

Query 8      TCTGGTTCCGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGC 67
            |||
Sbjct 4272842 TCT-GTTCGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGC 4272100

Query 68      CCGTTGCAGGTCGGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGT 127
            |||
Sbjct 4272101 CCGTTGCAGGTCGGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGT 4272160

Query 128     ACCGCTGTCCGGSAAGTCSAACACGCGCTTGTGGCCGCCACCGGCGTGTAGGCGTCTTG 187
            |||
Sbjct 4272161 ACCGCTGTCCGGSAAGTCSAACACGCGCTTGTGGCCGCCACCGGCGTGTAGGCGTCTTG 4272220

Query 188     GAAC TTGATGTTGCTGGTCCGACGAAAGCCCTCGAGGAACTTGGCCGGCAGGTTGTTGCC 247
            |||
Sbjct 4272221 GAAC TTGATGTTGCTGGTCCGACGAAAGCCCTCGAGGAACTTGGCCGGCAGGTTGTTGCC 4272280

Query 248     ACCCAGATCCGACGGCTTGCCGTTGCCGAGTACACCCAGACGCGGGTGTGTTGGCGAT 307
            |||
Sbjct 4272281 ACCCAGATCCGACGGCTTGCCGTTGCCGAGTACACCCAGACGCGGGTGTGTTGGCGAT 4272340

Query 308     CAGCTTCCCGACGTTCAACAGCGGGTGGTGGCTGCCACGCCGGGTCTCTTCGGGCC 367
            |||
Sbjct 4272341 CAGCTTCCCGACGTTCAACAGCGGGTGGTGGCTGCCACGCCGGGTCTCTTCGGGCC 4272400

Query 368     CCACATGTCGAGGACCTTGTAGCCGCCAGCGTCAACCCATCGCCAGGCCGATCAGGGTGGG 427
            |||
Sbjct 4272401 CCACATGTCGAGGACCTTGTAGCCGCCAGCGTCAACCCATCGCCAGGCCGATCAGGGTGGG 4272460

Query 428     ACCCATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAACTGCTG 487
            |||
Sbjct 4272461 ACCCATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAACTGCTG 4272520

Query 488     GGGGTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGCGGC 547
            |||
Sbjct 4272521 GGGGTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGCGGC 4272580

Query 548     GCTTCCGGTGGGCTTGACGTGCCCTGTTGGCTGCAGCCACCCCGGCAGCTCGCTGGTCAG 607
            |||
Sbjct 4272581 GCTTCCGGTGGGCTTGACGTGCCCTGTTGGCTGCAGCCACCCCGGCAGCTCGCTGGTCAG 4272640

Query 608     GAAGGTCCTCCACTTGTAGTCTGGCAACCGGCTTGCCGCAAGCGGGCTGGTACCACTC 667
            |||
Sbjct 4272641 GAAGGTCCTCCACTTGTAGTCTGGCAACCGGCTTGCCGCAAGCGGGCTGGTACCACTC 4272700

Query 668     GGAGTAGAAGCTTGACTGGCCACCCACCGGATGACCACCGACAGGCCCGACTGGTTCGTA 727
            |||
Sbjct 4272701 GGAGTAGAAGCTTGACTGGCCACCCACCGGATGACCACCGACAGGCCCGACTGGTTCGTA 4272760

Query 728     CCACTCGAACGCCGGGTTGATGTCCCAGCCGCTGAAGTGTCTTGCAGCGCGCAGGCC 787
            |||
Sbjct 4272761 CCACTCGAACGCCGGGTTGATGTCCCAGCCGCTGAAGTGTCTTGCAGCGCGCAGGCC 4272820

Query 788     GTCGAGCAGGTACAGGGCGGGCGAGTTGGCACCACCACTTTGSAATTGGACCTTGATGTC 847
            |||
Sbjct 4272821 GTCGAGCAGGTACAGGGCGGGCGAGTTGGCACCACCACTTTGSAATTGGACCTTGATGTC 4272880

Query 848     ACGGCCCATCGACGGCGACGGCACCTGCAG 877
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Sbjct 4272881 ACGGCCCATCGACGGCGACGGCACCTGCAG 4272910

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C. Hasil BLAST Sampel B3

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Query: None Query ID: lcl|Query_17515 Length: 898

>Mycobacterium tuberculosis strain H37Rv-1 chromosome, complete genome
Sequence ID: CP118619.1 Length: 4417942
Range 1: 4272844 to 4272918

Score:1682 bits(867), Expect:0.0,
Identities:867/867(100%), Gaps:0/867(0%), Strand: Plus/Plus

Query 13      TGTTCGGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGCCCG 72
            |||
Sbjct 4272844 TGTTCGGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGCCCG 4272183

Query 73      TTGCAGGTGCGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGTACC 132
            |||
Sbjct 4272184 TTGCAGGTGCGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGTACC 4272163

Query 133     GCTGTCCGGGAAGTCGAACACGCCGTTGTGGCCGCCACCGGCGTTGTAGGCGTCTTGGAA 192
            |||
Sbjct 4272164 GCTGTCCGGGAAGTCGAACACGCCGTTGTGGCCGCCACCGGCGTTGTAGGCGTCTTGGAA 4272223

Query 193     CTTGATGTTGCTGGTCCGACACGAAGCCCTCGAGGAACCTGGCCGGCAGGTTGTTGCCACC 252
            |||
Sbjct 4272224 CTTGATGTTGCTGGTCCGACACGAAGCCCTCGAGGAACCTGGCCGGCAGGTTGTTGCCACC 4272283

Query 253     CAGATCCGACGGCTTGCCGTTGCCGCACTACACCCAGACGCGGTTGTTGGCGATCAG 312
            |||
Sbjct 4272284 CAGATCCGACGGCTTGCCGTTGCCGCACTACACCCAGACGCGGTTGTTGGCGATCAG 4272343

Query 313     CTTCCCGACGTTCAACAGCGGGTGTGCGCTGCCACGCCGGGTCCTCCTTCGGGCCCA 372
            |||
Sbjct 4272344 CTTCCCGACGTTCAACAGCGGGTGTGCGCTGCCACGCCGGGTCCTCCTTCGGGCCCA 4272403

Query 373     CATGTCGGAGGCCCTTGTAGCCGCCAGCGTCAACCCATCGCCAGGCCGATCAGGGTGGGACC 432
            |||
Sbjct 4272404 CATGTCGGAGGCCCTTGTAGCCGCCAGCGTCAACCCATCGCCAGGCCGATCAGGGTGGGACC 4272463

Query 433     CATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAACGCTGGGG 492
            |||
Sbjct 4272464 CATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAACGCTGGGG 4272523

Query 493     GTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAAAGACCCGACGACGCGCT 552
            |||
Sbjct 4272524 GTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAAAGACCCGACGACGCGCT 4272583

Query 553     TCCGTTGGGCTTGACGTGCTGTTGGCTTGCAGCCACCCCGGCGAGCTCGCTGGTCAGGAA 612
            |||
Sbjct 4272584 TCCGTTGGGCTTGACGTGCTGTTGGCTTGCAGCCACCCCGGCGAGCTCGCTGGTCAGGAA 4272643

Query 613     GGTCTCCCACTTGTAGTCTGGCAACCGGCTTGCOCGAGGCGGGCTGGTACCACTCGGA 672
            |||
Sbjct 4272644 GGTCTCCCACTTGTAGTCTGGCAACCGGCTTGCOCGAGGCGGGCTGGTACCACTCGGA 4272703

Query 673     GTAGAAGCTTGACTGGCCACCCACCGGATGACCACCGACAGGCCCGACTGGTGTACCA 732
            |||
Sbjct 4272704 GTAGAAGCTTGACTGGCCACCCACCGGATGACCACCGACAGGCCCGACTGGTGTACCA 4272763

Query 733     CTCGAACGCCGGGTTGATGTCCCAGCCGCTGAAGTCGTCCTGCGCGCGCAGGCCGTC 792
            |||
Sbjct 4272764 CTCGAACGCCGGGTTGATGTCCCAGCCGCTGAAGTCGTCCTGCGCGCGCAGGCCGTC 4272823

Query 793     GAGCAGGTACAGGGCGGGCGAGTTGGCACCACCCTTTGGAATTGGACCTTGATGTCAG 852
            |||
Sbjct 4272824 GAGCAGGTACAGGGCGGGCGAGTTGGCACCACCCTTTGGAATTGGACCTTGATGTCAG 4272883

Query 853     GCCCATCGACGGCGACGGCACCTGCAG 879
            |||
Sbjct 4272884 GCCCATCGACGGCGACGGCACCTGCAG 4272918

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D. Hasil BLAST Sampel B4

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Query: None Query ID: lcl|Query_80697 Length: 889

>Mycobacterium tuberculosis strain H37Rv-1 chromosome, complete genome
Sequence ID: CP110619.1 Length: 4417942
Range 1: 4272846 to 4272989

Score:1585 bits(858), Expect:0.0,
Identities:862/864(99%), Gaps:0/864(0%), Strand: Plus/Plus

Query 14      TTCGGAGCTAGGCGCCCTG999GCGCG999CCCGGTGTTGG9CGTGGCACCCAGTGCCCGTT 73
              |||
Sbjct 4272846 TTCGGAGCTAGGCGCCCTG999GCGCG999CCCGGTGTTGG9CGTGGCACCCAGTGCCCGTT 4272185

Query 74      GCAGGTC999CTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCCAGCTGTGCGTACCGC 133
              |||
Sbjct 4272186 GCAGGTC999CTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCCAGCTGTGCGTACCGC 4272165

Query 134     TGTCCG99AAGTCGAACACGCCGTTGTG999GCGCCACCG99GTTGTAG9CGTCTTGGAACT 193
              |||
Sbjct 4272166 TGTCCG99AAGTCGAACACGCCGTTGTG999GCGCCACCG99GTTGTAG9CGTCTTGGAACT 4272225

Query 194     TGATGTTGCTGGTCCGACGAAGCCCTCGAG9AACTTGGCC99CAG9TGTGTTGCCACCCA 253
              |||
Sbjct 4272226 TGATGTTGCTGGTCCGACGAAGCCCTCGAG9AACTTGGCC99CAG9TGTGTTGCCACCCA 4272285

Query 254     GATCCGAC99CTTGCCGTTGCCGCGAGTACACCCAGACGCG99GTTGTTGGCGATCAGCT 313
              |||
Sbjct 4272286 GATCCGAC99CTTGCCGTTGCCGCGAGTACACCCAGACGCG99GTTGTTGGCGATCAGCT 4272345

Query 314     TCCCAGCGTTCAACAGCG99GTCGTTGCGCTGCCACGCG99GTCCTCCTTCG999CCCA 373
              |||
Sbjct 4272346 TCCCAGCGTTCAACAGCG99GTCGTTGCGCTGCCACGCG99GTCCTCCTTCG999CCCA 4272485

Query 374     TGTCCGAG99CTTGTAGCCGCCAGCGTCACCCATCGCCAG99CGATCAG99TGG9ACCCA 433
              |||
Sbjct 4272486 TGTCCGAG99CTTGTAGCCGCCAGCGTCACCCATCGCCAG99CGATCAG99TGG9ACCCA 4272465

Query 434     TCGCCTG99AG999GTCGAACAG99CCGACATCGCTCCCGCGTAGACGA99TGTG999GT 493
              |||
Sbjct 4272466 TCGCCTG99AG999GTCGAACAG99CCGACATCGCTCCCGCGTAGACGA99TGTG999GT 4272525

Query 494     GATAGATCGCCAGCGTCAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGACG99GCTTC 553
              |||
Sbjct 4272526 GATAGATCGCCAGCGTCAGCGCCGAAGAAGCAGCCATCGAAAGACCGACGACG99GCTTC 4272585

Query 554     CGGTGG99CTTGACGTGCCGTTGG99CTGCAG99CACCCCG99CAGCTCGCTGGTCAG99A99 613
              |||
Sbjct 4272586 CGGTGG99CTTGACGTGCCGTTGG99CTGCAG99CACCCCG99CAGCTCGCTGGTCAG99A99 4272645

Query 614     TCTCCCACCTTGTAA99TCTG99CAACCG99CTTGCCGCGAG99CG99CTGGTACCAGTC99AGT 673
              |||
Sbjct 4272646 TCTCCCACCTTGTAA99TCTG99CAACCG99CTTGCCGCGAG99CG99CTGGTACCAGTC99AGT 4272705

Query 674     AGAAGCTTGACTG99CACCCACCG99CATGACCACCGACAG99CCGACTGGTGGTACCACT 733
              |||
Sbjct 4272706 AGAAGCTTGACTG99CACCCACCG99CATGACCACCGACAG99CCGACTGGTGGTACCACT 4272765

Query 734     CGAACGCG999GTTGATGTCCCAGCCGCTGAAGTCGTCCTGCGCGCGCAG99CGTCCA 793
              |||
Sbjct 4272766 CGAACGCG999GTTGATGTCCCAGCCGCTGAAGTCGTCCTGCGCGCGCAG99CGTCCA 4272825

Query 794     GCAGGTACAG99CG999GAGTGG99CACCCACTTTG99AATTGG99CTTGTATGTCAC99G 853
              |||
Sbjct 4272826 GCAGGTACAG99CG999GAGTGG99CACCCACTTTG99AATTGG99CTTGTATGTCAC99G 4272885

Query 854     CCAATCGAC999GACGCAACCTGCA 877
              |||
Sbjct 4272886 CCAATCGAC999GACGCAACCTGCA 4272989

```

E. Hasil BLAST Sampel B5

```

Query: None Query ID: lcl|Query_118677 Length: 889

>Mycobacterium tuberculosis strain H37Rv-1 chromosome, complete genome
Sequence ID: CP118619.1 Length: 4417942
Range 1: 4272844 to 4272989

Score:1594 bits(863), Expect:0.0,
Identities:865/866(99%), Gaps:0/866(0%), Strand: Plus/Plus

Query 11      TGTTTGGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGCCCG 70
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272844  TGTTCGGAGCTAGGCGCCCTGGGGCGCGGGCCCGGTGTTGGGCGTGGCACCCAGTGCCCG 4272183

Query 71      TTGCAGGTCGGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGTACC 130
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272184  TTGCAGGTCGGGCTTCATAGCGTTGAGCTGCGCGCCCCAGTACTCCAGCTGTGCGTACC 4272163

Query 131     GCTGTCCGGGAAGTCGAACACGCCGTTGTGGCCGCCACCGGGGTTGTAGGCGTCTTGGAA 190
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272164  GCTGTCCGGGAAGTCGAACACGCCGTTGTGGCCGCCACCGGGGTTGTAGGCGTCTTGGAA 4272223

Query 191     CTTGATGTTGCTGGTCCGACACGAAGCCCTCGAGGAAC TTGGCCGGCAGGTTGTTGCCACC 250
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272224  CTTGATGTTGCTGGTCCGACACGAAGCCCTCGAGGAAC TTGGCCGGCAGGTTGTTGCCACC 4272283

Query 251     CAGATCCGACGGCTTGCCGTTGCCGACGTACACCCAGACGCGGGTGTGTTGGCGATCAG 310
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272284  CAGATCCGACGGCTTGCCGTTGCCGACGTACACCCAGACGCGGGTGTGTTGGCGATCAG 4272343

Query 311     CTTCCCGACGTTCAACAGCGGGTGGTGGCTGCCACGCCGGGTCCTCCTTCGGGCCCCA 370
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272344  CTTCCCGACGTTCAACAGCGGGTGGTGGCTGCCACGCCGGGTCCTCCTTCGGGCCCCA 4272403

Query 371     CATGTCCGAGGGCTTGTAGCCGCCAGCGTCACCCATCGCCAGGCCGATCAGGGTGGGACC 430
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272484  CATGTCCGAGGGCTTGTAGCCGCCAGCGTCACCCATCGCCAGGCCGATCAGGGTGGGACC 4272463

Query 431     CATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAAC TGTGGGG 490
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272464  CATCGCCTGGGAGGGGTCCAACAGGCCCGACATCGCTCCCGCGTAGACGAAC TGTGGGG 4272523

Query 491     GTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAANGACCCGACGACGGCGCT 550
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272524  GTGATAGATCGCCAGCGTCAAGCGCCGAAGAAGCAGCCATCGAANGACCCGACGACGGCGCT 4272583

Query 551     TCCGGTGGGCTTGACGTGCTGTTGGCCGTCAGCCACCCCGGCAGCTCGCTGGTCAGGAA 610
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272584  TCCGGTGGGCTTGACGTGCTGTTGGCCGTCAGCCACCCCGGCAGCTCGCTGGTCAGGAA 4272643

Query 611     GGTCTCCCACTTGTAAAGTCTGGCAACCAGGCTTGCCGACGGCGGGCTGGTACCAGTCGGA 670
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272644  GGTCTCCCACTTGTAAAGTCTGGCAACCAGGCTTGCCGACGGCGGGCTGGTACCAGTCGGA 4272703

Query 671     GTAGAAGCTTGACTGGCCACCCACCGCATGACCACCGACAGGCCCGACTGGTTCGTACCA 730
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272784  GTAGAAGCTTGACTGGCCACCCACCGCATGACCACCGACAGGCCCGACTGGTTCGTACCA 4272763

Query 731     CTCGAACGCCGGGGTGTGATGTCCAGCCGCTGAAGTCGTCTTGCAGCGCGCAGGCCGTC 790
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272764  CTCGAACGCCGGGGTGTGATGTCCAGCCGCTGAAGTCGTCTTGCAGCGCGCAGGCCGTC 4272823

Query 791     GAGCAGGTACAGGGCGGGCGAGTTGGCACCCACTTTGGAATTGGACCTTGATGTCACG 850
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272824  GAGCAGGTACAGGGCGGGCGAGTTGGCACCCACTTTGGAATTGGACCTTGATGTCACG 4272883

Query 851     GCCCATCGACGGCGACGGCACCTGCA 876
            ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct 4272884  GCCCATCGACGGCGACGGCACCTGCA 4272989

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Lampiran 4. Rekomendasi Persetujuan Etik



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
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 : 189/UN4.6.4.5.31/ PP36/ 2023

Tanggal: 27 Maret 2023

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

No Protokol	UH23030177		No Sponsor	
Peneliti Utama	Sitti Rahmah Mustakin, S.Tr.Kes		Sponsor	
Judul Peneliti	Analisis Mutasi Gen fbpA Mycobacterium tuberculosis pada Penderita Tuberkulosis Aktif dan Tuberkulosis Laten di Kota Makassar			
No Versi	1	Tanggal	20 Maret 2023	
No Versi PSP		Tanggal		
Tempat Penelitian	RS Universitas Hasanuddin Makassar			
Jenis Review	<input checked="" type="checkbox"/> Exempted	Masa Berlaku	Frekuensi review lanjutan	
	<input type="checkbox"/> Expedited	27 Maret 2023 sampai 27 Maret 2024		
	<input type="checkbox"/> Fullboard Tanggal			
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 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 prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

Lampiran 5. Permintaan Izin Etik Penelitian



**KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
SEKOLAH PASCASARJANA**

Jalan Perintis Kemerdekaan km. 10 Makassar 90245 Telp. : (0411) 585034, 585036
Fax. : (0411) 585868, E-mail : info@pasca.unhas.ac.id, <http://pasca.unhas.ac.id>

Nomor : 235 /UN4.20.1/PT.01.04/2023 09 Januari 2023
Perihal : Permintaan Izin Etik Penelitian

Yth. Ketua Komisi Etik Penelitian Fakultas Kedokteran
Universitas Hasanuddin
Makassar

Dengan hormat disampaikan bahwa mahasiswa Sekolah Pascasarjana Universitas Hasanuddin yang tersebut dibawah ini :

Nama : Sitti Rahmah Mustakin
Nomor Pokok : P062192013
Program Pendidikan : Magister (S2)
Program Studi : Ilmu Biomedik

Bermaksud melakukan penelitian dalam rangka persiapan penulisan tesis terkait dengan judul "Analisis Mutasi Gen fbpA Mycobacterium Tuberculosis pada Penderita Tuberculosis Aktif dan Tuberculosis Laten di kota Makassar".

Sehubungan dengan hal tersebut, mohon kiranya Saudara berkenan memberikan izin surat persetujuan etik penelitian dengan menggunakan subjek manusia.

Atas perkenan dan kerjasamanya diucapkan terima kasih.



W.a.n. Dekan
Wakil Dekan Bidang Akademik dan
Mahasiswa

Prof. Sohanuddin Hamzah., ST., M.Arch., Ph.D.
NIP. 196903081995121001

Tembusan:

1. Dekan SPs Unhas "sebagai laporan"
2. Mahasiswa yang bersangkutan
3. Peringgal.

