[DEBUG MODE]

Total number of sequences (with duplicates) : 506

Total number of sequences (with no duplicates) : 90

**PATTERN 2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_10795\_7935\_translation\_frame\_-1

S :KMTKGEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(5,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 1,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_11080\_16984\_translation\_frame\_+1

S :KMTKGEAKKWGNATESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQ PAT(1) SNP(14,16)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 1 why is the program calling this 1,1 instead of 1**

M01475\_11\_000000000-A4JH2\_1\_1101\_12093\_20807\_translation\_frame\_-1

S :KMTKGEAKKWGNAVEDATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(16)

E\*: ATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(16)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10155\_26749\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATDGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(19)

E\*: GDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(19)

Matched!

**PATTERN 1,5,4**

M01475\_11\_000000000-A4JH2\_1\_1101\_10242\_23700\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10266\_16723\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10369\_6232\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10619\_14234\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10686\_13067\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10822\_10848\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10906\_19140\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11212\_22388\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11318\_17003\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11347\_17051\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11667\_22713\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11702\_24594\_translation\_frame\_-1

S :KMTKGEAKKWGNAVENATGTTSGDELSKKVCGKGTTSGNQCGVNATSGKITQAFTADSDTTLLSAESSNISTSGMATNINGL

F\*:KMTKGEAKKWGNAVENAT PAT(1)

M\*: EAKKWGNAIESATGTTSGDELSKKVCGKGTTSGNQCGVNATSG PAT(5) SNP(14,16)

E\*: GKITQAFTADSDTTLLSAESSNISTSGMATNINGL PAT(4)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10396\_5442\_translation\_frame\_-1

S :KMTKGEAKKWGNAVENATGTTSGDELSKKVCGKGTTSGNQCGVNATSGKITQAFTADSDTTLLSAESSNISTSGTATNINGL

F\*:KMTKGEAKKWGNAVENAT PAT(1)

M\*: EAKKWGNAIESATGTTSGDELSKKVCGKGTTSGNQCGVNATSG PAT(5) SNP(14,16)

E\*: GKITQAFTADSDTTLLSAESSNISTSGMATNINGL PAT(4) SNP(75)

Matched!

**PATTERN 1**

M01475\_11\_000000000-A4JH2\_1\_1101\_10764\_21041\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATNGD\*VSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(22)

E\*: VSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(22)

Matched!

**PATTERN 1,2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_11333\_5568\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATNGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKGEAKKWGNAVENATNGD PAT(1)

M\*: TSGDELSKKVCGKGEGS PAT(2) SNP(19,32)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(25,30)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 1**

M01475\_11\_000000000-A4JH2\_1\_1101\_10215\_11114\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGHKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(39)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(39)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10806\_3389\_translation\_frame\_-1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDNTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(46)

E\*: TATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(46)

Matched!

**PATTERN 1,3 why 1,3 and not 1? b/c if 1 then seq has 2 SNPs vs if 1,3 then 3 has 1 SNP?**

M01475\_11\_000000000-A4JH2\_1\_1101\_10714\_6222\_translation\_frame\_-1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNIKSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(82)

E\*: TINTTGMAGNINSL PAT(3) SNP(79,82)

Matched!

**PATTERN 1**

M01475\_11\_000000000-A4JH2\_1\_1101\_10008\_7380\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10030\_13203\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10071\_8161\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10076\_19921\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10088\_6006\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10098\_14919\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10106\_12218\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10143\_9261\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10222\_13817\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10235\_20862\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10262\_9752\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10272\_15412\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10288\_15400\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10298\_8849\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10308\_23624\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10309\_6455\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10316\_13376\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10329\_19736\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10355\_16623\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10362\_23635\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10370\_8154\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10385\_20863\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10391\_27683\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10392\_12693\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10451\_10541\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10461\_25828\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10462\_16993\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10472\_22949\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10493\_3692\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10556\_19219\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10566\_17046\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10602\_7651\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10622\_13291\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10675\_17714\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10677\_15573\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10751\_8975\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10778\_18101\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10796\_8750\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10801\_8781\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10830\_4351\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10832\_4409\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10846\_9222\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10868\_10816\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10878\_15410\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10888\_12848\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10918\_25785\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10930\_10180\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10951\_12513\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10976\_22256\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10985\_5778\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11000\_21369\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11004\_4767\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11008\_11459\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11018\_5958\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11037\_5991\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11050\_12954\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11060\_6772\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11076\_23126\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11126\_22334\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11144\_20569\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11161\_5424\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11162\_5050\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11182\_20377\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11185\_20478\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11192\_14376\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11222\_19364\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11244\_23579\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11264\_14222\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11299\_5152\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11437\_19642\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11460\_6214\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11556\_9836\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11558\_19967\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11584\_22165\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11590\_11264\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11592\_11085\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11634\_4585\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11669\_27666\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11675\_18267\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11694\_9004\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11736\_18459\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11757\_23564\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11817\_3472\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11837\_21042\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11844\_23404\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11854\_25262\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11936\_3630\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11998\_14289\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12007\_22894\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12014\_14538\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12034\_23990\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12065\_23428\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12070\_14061\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12070\_5267\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12122\_10173\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12128\_9182\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12140\_11453\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12141\_3021\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12152\_6464\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12162\_24709\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

P:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10729\_27297\_translation\_frame\_+1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANSINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(80)

E\*: INSL PAT(1) SNP(80)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11195\_4073\_translation\_frame\_-1

S :KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTGSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(45)

E\*: STATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(45)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11433\_8901\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11621\_23939\_translation\_frame\_-1

S :KMTKGEAKKWGNAVGNATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(15)

E\*: NATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(15)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10099\_3925\_translation\_frame\_-1

S :KMTKGEAKKWGNVVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(13)

E\*: VENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(13)

Matched!

**PATTERN 4,1 (unmatched by program)**

M01475\_11\_000000000-A4JH2\_1\_1101\_10962\_4308\_translation\_frame\_-1

S :KMTKGEAKKWGTTVEAATNGQAVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4) SNP(22)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50)

No Match

**PATTERN 4,1,2,1**

M01475\_11\_000000000-A4JH2\_1\_1101\_10359\_9109\_translation\_frame\_+1

S :KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKICEVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

M\*: TKKCGTTDSTATTKISEVFTE PAT(2) SNP(49)

E\*: VFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10573\_10337\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11531\_10021\_translation\_frame\_+1

S :KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1)

No Match

M01475\_11\_000000000-A4JH2\_1\_1101\_11047\_3628\_translation\_frame\_+1

S :KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQ\*STMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50,60)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50,60)

No Match

M01475\_11\_000000000-A4JH2\_1\_1101\_10046\_11612\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10126\_15739\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10172\_5383\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10420\_18175\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10521\_16281\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10542\_17595\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10843\_12683\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10864\_25780\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10883\_21501\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11167\_8463\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11180\_20543\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11561\_13939\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11655\_2201\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11672\_9618\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11915\_9495\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12090\_22970\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12173\_13609\_translation\_frame\_-1

S :KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50)

No Match looks like it could be 4,1,2,1

M01475\_11\_000000000-A4JH2\_1\_1101\_10655\_20581\_translation\_frame\_-1

S :KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVSTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGTTVEAATNGQTVSQKVC PAT(4)

M\*: VSQNVCKGTGST PAT(1) SNP(26)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50,52)

E\*: KCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(50,52)

No Match

**PATTERN 2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_10514\_6572\_translation\_frame\_+1

S :KMTKSEAKK\*GNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(10,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10516\_17825\_translation\_frame\_-1

S :KMTKSEAKKWCNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2) SNP(11)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11566\_8373\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTASGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(21,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10441\_5577\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11009\_8432\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTNGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(22,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 3**

M01475\_11\_000000000-A4JH2\_1\_1101\_10674\_16781\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10729\_15668\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10794\_22275\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11337\_16524\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11793\_25139\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTNGEKVSQKVCGNGTGSSGTQCGKNSGDTNGSSTTQHKISAVFTDEATLLSAAGDTINTTGMAGNINSL

P:KMTKSEAKKWGNAIESATGTTNGEKVSQKVCGNGTGSSGTQCGKNSGDTNGSSTTQHKISAVFTDEATLLSAAGDTINTTGMAGNINSL PAT(3)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10143\_11765\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTNGEKVSQKVCGNGTGSSGTQCGKNSGDTNGSSTTQHKISAVFTDEATLLSAAGDTINTTGMAGYINRL

F\*:KMTKSEAKKWGNAIESATGTTNGEKVSQKVCGNGTGSSGTQCGKNSGDTNGSSTTQHKISAVFTDEATLLSAAGDTINTTGMAGNINSL PAT(3) SNP(85,88)

E\*: INSL PAT(3) SNP(85,88)

Matched!

**PATTERN 2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_11129\_14629\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELGKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(27,35)

M\*: KVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10233\_16816\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNGTKKCGTTDSTATTKISEVFTEGTDTLLSVEGNKDTINLQGMANNIDNL

No Match

**PATTERN 2**

M01475\_11\_000000000-A4JH2\_1\_1101\_10140\_24762\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNGTKKCGTTDSTATTKISEVFTEGTDTLLSVEGNKDTINLQGMANNINNL

P:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNGTKKCGTTDSTATTKISEVFTEGTDTLLSVEGNKDTINLQGMANNINNL PAT(2)

Matched!

**PATTERN 2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_10747\_7687\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGIGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGSINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: KVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(33,35)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(89)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10004\_22980\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKDTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: KVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(33,45)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10327\_9738\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTAFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(58)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_12009\_20583\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNAISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(80)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11376\_25606\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLKGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(84)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10341\_20355\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMADNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(88)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10000\_11008\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10019\_22280\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10058\_10834\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10081\_13190\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10143\_21355\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10174\_6903\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10228\_6286\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10237\_26430\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10262\_20069\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10294\_8611\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10330\_11409\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10402\_24667\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10413\_20593\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10420\_23182\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10421\_21283\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10422\_6071\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10494\_26058\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10514\_12700\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10545\_19631\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10590\_17314\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10608\_6891\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10611\_8217\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10646\_16951\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10654\_20864\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10677\_12507\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10703\_10685\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10728\_19190\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10733\_2969\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10737\_7348\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10748\_7154\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10772\_21336\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10822\_25021\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10822\_3047\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10827\_20806\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10831\_24136\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10832\_21256\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10845\_4511\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10851\_20363\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10859\_11457\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10901\_2404\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10926\_19490\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10927\_16700\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10941\_11055\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10971\_22895\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11026\_13803\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11053\_25841\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11077\_27426\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11080\_19736\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11146\_15476\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11168\_20963\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11188\_7594\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11209\_13871\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11230\_9632\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11250\_25776\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11264\_24101\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11279\_15170\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11281\_11515\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11283\_16507\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11303\_5933\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11316\_25595\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11332\_25306\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11338\_14432\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11423\_19351\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11462\_7656\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11507\_16543\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11521\_20523\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11522\_5818\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11529\_25666\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11556\_4771\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11559\_8441\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11560\_4521\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11562\_14677\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11601\_2615\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11652\_21654\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11687\_18884\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11719\_10339\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11727\_11433\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11733\_5361\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11737\_20540\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11740\_15963\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11749\_16612\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11781\_16711\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11793\_8881\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11816\_10520\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11818\_20330\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11828\_17417\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11859\_18566\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11902\_12236\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11920\_21273\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11953\_22168\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11974\_5053\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11987\_5740\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11995\_3997\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12030\_26501\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12037\_11632\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12057\_21838\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12081\_19999\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12098\_3320\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12117\_17908\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12123\_9051\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12142\_23986\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12146\_15263\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12167\_15780\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10573\_11509\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNTNSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(90)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11545\_22569\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMASNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(88)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11099\_19642\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEATSSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(67)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10239\_13498\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAGAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(65)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11517\_19159\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTVGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(62)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10273\_5941\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFSTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(60)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11725\_26646\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKPSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(55)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10246\_22556\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTTNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTTDST PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(51)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10533\_11711\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTGSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNG PAT(2) SNP(35,38)

M\*: SQKVCGNGTGSSGSNCGKNTT PAT(4) SNP(28,33)

E\*: TSGSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(47)

Matched!

**PATTERN 5,4**

M01475\_11\_000000000-A4JH2\_1\_1101\_11406\_3210\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTTSGNQCGVNATSGKITQAFTADSDTTLLSAESSNISTSGMATNINGL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGTTSGNQCGVNATSG PAT(5)

E\*: GKITQAFTADSDTTLLSAESSNISTSGMATNINGL PAT(4)

Matched!

**PATTERN 2,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_10843\_5286\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11745\_27198\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11958\_14378\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATGTTSGDELSKKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(33,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11364\_12374\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATGTTSGDELSKRVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDSTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(29,35)

M\*: VCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(72)

Matched!

**PATTERN 2,2,4,5 why did it break 2 apart?**

M01475\_11\_000000000-A4JH2\_1\_1101\_11516\_5182\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TSGDELSKKVCGKGEGS PAT(2) SNP(19,32)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(25,30)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 2,1,4,5**

M01475\_11\_000000000-A4JH2\_1\_1101\_10521\_16723\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKMCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: EAKKWGNAVENATNGDKVSQ PAT(1) SNP(14,16)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(27)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

**PATTERN 2,3,4,5 is Pat 3 real??? 3 and 4 are very similar here**

M01475\_11\_000000000-A4JH2\_1\_1101\_11057\_21601\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCDNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21,29)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(29)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10877\_24169\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12020\_24750\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12043\_3455\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21,30)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(30)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11635\_18908\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGGSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21,34)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(34)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11933\_6275\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTADSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(44)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11793\_18369\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDGTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(46)

E\*: TNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10660\_15382\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNDKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(50)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11113\_6433\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11979\_19562\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTAFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(55)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11494\_19661\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTGFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(55)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10442\_21193\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11346\_21751\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11357\_9221\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAIPSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(65)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11990\_8265\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTAASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(70)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10941\_26168\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTARGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(72)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_12070\_12240\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGASNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(74)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10411\_8677\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTRNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(75)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10448\_6573\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNNISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(77)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10567\_19624\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTIGLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(79)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10017\_25480\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10031\_9470\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10037\_12698\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10037\_18435\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10049\_9702\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10054\_14315\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10056\_25845\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10087\_18347\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10155\_2898\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10156\_11192\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10167\_18851\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10191\_8755\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10200\_8351\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10207\_12594\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10218\_19065\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10218\_7228\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10221\_20753\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10230\_7549\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10232\_18860\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10234\_25105\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10242\_14624\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10284\_16211\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10291\_26488\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10306\_3918\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10310\_16268\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10314\_24257\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10316\_22103\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10397\_16219\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10409\_4025\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10487\_2500\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10517\_5912\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10526\_13257\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10537\_13092\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10540\_18711\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10541\_22745\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10545\_26062\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10549\_10291\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10565\_14810\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10567\_18400\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10592\_9186\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10604\_19748\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10606\_23608\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10637\_24755\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10651\_14676\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10651\_18077\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10656\_14380\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10681\_27340\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10696\_6370\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10699\_24589\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10703\_13829\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10714\_13676\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10716\_6620\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10721\_20124\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10722\_8656\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10723\_16106\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10751\_25343\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10782\_9551\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10798\_8314\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10805\_11607\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10805\_21032\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10818\_17984\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10846\_26032\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10893\_17234\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10896\_16682\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10896\_9336\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10901\_21674\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10901\_27987\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10909\_10176\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10911\_14495\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10960\_12534\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10961\_9305\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10968\_22775\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11015\_4153\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11027\_2705\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11056\_7855\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11076\_14221\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11108\_19724\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11125\_25668\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11141\_14450\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11164\_22285\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11165\_6794\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11186\_14842\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11222\_7810\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11237\_22682\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11241\_22656\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11243\_12334\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11243\_26406\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11246\_14653\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11268\_28142\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11285\_17756\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11301\_4712\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11337\_16078\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11343\_4912\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11348\_12458\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11359\_13809\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11361\_14342\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11376\_5289\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11393\_22574\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11408\_23954\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11411\_17273\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11417\_16301\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11418\_10539\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11439\_20755\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11472\_6064\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11489\_21066\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11509\_9133\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11514\_25495\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11537\_16761\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11537\_5266\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11538\_9351\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11550\_21629\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11553\_25655\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11572\_7976\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11587\_8228\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11597\_4760\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11683\_6068\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11684\_13365\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11704\_11394\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11706\_13149\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11712\_17343\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11714\_8371\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11716\_11200\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11727\_7377\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11744\_25155\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11747\_8731\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11759\_3926\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11799\_27319\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11800\_7242\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11802\_28126\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11808\_6603\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11823\_6805\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11826\_4364\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11869\_16661\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11890\_5646\_translation\_fram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S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11245\_14299\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGSINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(86)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10408\_16726\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMANNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(85)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11509\_12682\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLRGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(81)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11050\_16351\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11578\_14463\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11817\_8434\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMGTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(68)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10204\_27566\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAITSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(65)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11076\_26238\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGEEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(61)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_12020\_22820\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVLNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(56)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10648\_26826\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTSNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(48)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(48)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10687\_17377\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10805\_14257\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10865\_16692\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11232\_25017\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11648\_19800\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11671\_8813\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVE PAT(1) SNP(5,14)

E\*: EAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(14,16)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10579\_11542\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISEVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVE PAT(1) SNP(5,14)

E\*: ENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(16,54)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10284\_9681\_translation\_frame\_+1

S :KMTKSEAKKWGNAIESATNSDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: ENATNGDKVSQ PAT(1) SNP(16,20)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11044\_17328\_translation\_frame\_-1

S :KMTKSEAKKWGNAIESATSGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAVSSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(19,21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(64)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10479\_14226\_translation\_frame\_-1

S :KMTKSEAKKWGNAIGSATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(15,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10384\_20209\_translation\_frame\_-1

S :KMTKSEAKKWGNAIGSATGTTSGDELSKKVCGKGTGSSGSNCGKNTTGSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(15,35)

M\*: SQKVCGNGTGSSGSNCGKNTT PAT(4) SNP(28,33)

E\*: TSGSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5) SNP(47)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10087\_16172\_translation\_frame\_+1

S :KMTKSEAKKWGNALESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2) SNP(14)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10188\_3752\_translation\_frame\_-1

S :KMTKSEAKKWGNAMESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(14,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11769\_16894\_translation\_frame\_-1

S :KMTKSEAKKWGNAVENATNGDKVGQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(5,24)

E\*: EAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(5,24)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10142\_24968\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10810\_11476\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11128\_19140\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11778\_20183\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11864\_2610\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11918\_21365\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11919\_19687\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12061\_26480\_translation\_frame\_+1

S :KMTKSEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

F\*:KMTKGEAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(5)

E\*: EAKKWGNAVENATNGDKVSQNVCKGTGSTGSSGNKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL PAT(1) SNP(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_11033\_17542\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_12109\_17152\_translation\_frame\_-1

S :KMTKSEARKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2) SNP(8)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10773\_28042\_translation\_frame\_-1

S :KMTKSETKKWGNAIESATGTTSGDELSKKVCGKGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGS PAT(2) SNP(7,35)

M\*: SQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4) SNP(28,33)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10225\_24542\_translation\_frame\_+1

S :KMTKSVAKKWGYAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2) SNP(6,12)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

M01475\_11\_000000000-A4JH2\_1\_1101\_10840\_19067\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11228\_23410\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11437\_12615\_translation\_frame\_-1

S :KMTRSEAKKWGNAIESATNGDKVSQKVCGNGTGSSGSNCGKNTTDSTNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL

F\*:KMTKSEAKKWGNAIESAT PAT(2) SNP(4)

M\*: TNGEKVSQKVCGNGTGSSG PAT(3) SNP(21)

M\*: VSQKVCGNGTGSSGSNCGKNTTDSTNN PAT(4)

E\*: STNNGKLSTVFNTDGAEAISSMDTTASGTSNTISLQGMAGNINSL PAT(5)

Matched!

PATTERN # SEQUENCES

2345 197

245 132

1 100

11 26

154 13

3 5

2145 2

2245 1

54 1

2 1

33 1

4121 1

1245 1

13 1

145 1

Total number of sequences (with no match) : 6

Seq 1: M01475\_11\_000000000-A4JH2\_1\_1101\_10962\_4308\_translation\_frame\_-1

KMTKGEAKKWGTTVEAATNGQAVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQLSTMDNTTINTTGMANNINSL

Seq 2: M01475\_11\_000000000-A4JH2\_1\_1101\_10573\_10337\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11531\_10021\_translation\_frame\_+1

KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISAVFTEDAAAQLSTMDNTTINTTGMANNINSL

Seq 3: M01475\_11\_000000000-A4JH2\_1\_1101\_11047\_3628\_translation\_frame\_+1

KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQ\*STMDNTTINTTGMANNINSL

Seq 4: M01475\_11\_000000000-A4JH2\_1\_1101\_10046\_11612\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10126\_15739\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10172\_5383\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10420\_18175\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10521\_16281\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10542\_17595\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10843\_12683\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_10864\_25780\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_10883\_21501\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11167\_8463\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11180\_20543\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11561\_13939\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11655\_2201\_translation\_frame\_-1,M01475\_11\_000000000-A4JH2\_1\_1101\_11672\_9618\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_11915\_9495\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12090\_22970\_translation\_frame\_+1,M01475\_11\_000000000-A4JH2\_1\_1101\_12173\_13609\_translation\_frame\_-1

KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVFTEDAAAQLSTMDNTTINTTGMANNINSL

Seq 5: M01475\_11\_000000000-A4JH2\_1\_1101\_10655\_20581\_translation\_frame\_-1

KMTKGEAKKWGTTVEAATNGQTVSQKVCKGTGSTKKCGTTDSTATTKISEVSTEDAAAQLSTMDNTTINTTGMANNINSL

Seq 6: M01475\_11\_000000000-A4JH2\_1\_1101\_10233\_16816\_translation\_frame\_+1

KMTKSEAKKWGNAIESATGTTSGDELSKKVCGKGEGSNGTKKCGTTDSTATTKISEVFTEGTDTLLSVEGNKDTINLQGMANNIDNL