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Supplement of

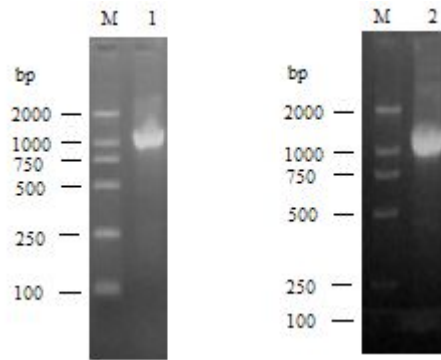
Molecular cloning, sequence identification, polymorphism and association of the porcine *SPATS2L* gene

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supplemental materials:



Supplemental material 1. RACE results for porcine *SPATS2L* gene. M, DL2000 DNA markers 1, 5'-RACE product ; 2, 3'-RACE product

GAGAGAGGCGTGAGCAGCGCCGTGTGTGCGAGCGGGAGCGAGGGGCGCCGGCTCGGGGTGTGTGCGCCTGGAGCATTCCAGAC
TGTATCTGCTTTCAGAAATATCTCTGTGGATCCCCAGGGCTTATTCTACTAGAAGCAAG**ATG**GCTGAACTCAATACT
M A E L N T
CATGTGAATGTCAAGGAAAAGATCTATGCAGTTCGATCAGTTGTTCCCAACAAAAGCAATAATGAAATAGTCTGGTGCTA
H V N V K E K I Y A V R S V V P N K S N N E I V L V L
CAACAGTTTGACTTAAATGTAGATAAAGCAGTGCAGGCCCTCGTGGATGGCAGTGAATTCAAGTTCTTAAAGAATGGAAT
Q Q F D F N V D K A V Q A F V D G S A I Q V L K E W N
ATGACAGGAAAAAAGAAGAACAATAAGAGAAAAAGAAGCAAGTCTAAGCAGCATCAAGGCAACAAAAGAAGCGAAAAGAC
M T G K K K N N K R K R S K S K Q H Q G N K E A K D
AAGGCAGAGAGGCCGGACGCAGGTCCCCTGCAGCCGCCGGCGCCACAGATACAGAATGGCCACGTCAACGGCTGC
K A E R P D A G P L Q P P A A P Q I Q N G H V N G C
GAGAAGGACAGCTCATCCACTGACTCCGCCAGTAAAAACCAGTCTCTGCCCTCGTGAGAAAAAGATCTCGATACTCGAG
E K D S S S T D S A S E K P A P A P R E K K I S I L E
GAACCTTCAAAGGCACTCCGTGGGGTCACAGAAGGCAACAGACCAGTCAACAGAACTATCCTTAGATGGGAGCCCC
E P S K A L R G V T E F A G N R P L Q Q K L S L D G S P
AAATCTATACATGGAACACCCGAGAGGTCAAGTGGCCTACAGTGGTCAAGTGGCAGCCTTGTACACCAAGCAAGCCTAAG
K S I H G T P E R S D G L Q W S A E Q P C H P S K P K
GCAAAACTTCTCTGTTAAGTCCAATGCCCCGAGCTCATCTTGAATAAAGCCAGATGAGCTGGCAAAGAAAAGAGGC
A K T S P V K S N A P A A H L E I K P D E L A K R N G
CCAAATATTGAGAAATCGGTGAAGGATTTACAGCGCTGCACTGTGTCTTAAGTATATCGCGTCAATGATCAAGGAAGAA
P N I E K S V K D L Q R C T V S L T R Y R V M I K E E
GTGGATAGTTCAGTGAAGAAGATCAAAGTGCCTTTGCTGAATTACACAAGTCAATGACAAAGAAGTTTCAATTAATG
V D S S V K K I K A A F A E L H N C I I D K E V S L M
GCAGAAATGGATAAAGTTAAAGAAGAAGCCATGGAATCCTGACGGCTCGTCAAAAAGAAAGCAGAAGAAGTAAAGAGA
A E M D K V K E E A M E I L T A R Q K K A E E L K R
CTTACTGATCTAGCCAGTCAAGATGGCAGAGATGCAGCTGGCCGAAGTGGCAGAAATTAAGCACTTTGTGACGAGCGT
L T D L A S Q M A E M Q L A E L R A E I K H F V S E R
AAATATGATGAAGAGCTCGGAAAAGCTGCCCGTTCCCTGTGACATTGAACAGCTAAAGGCCAAATCATGCTCTGCGGA
K Y D E E L G K A A R F P C D I E Q L K A Q I M L C G
GAAATACACATCCAAAGAACAATTCCTCAAGAAGTCCCTGCAGTCCCTGCTGCCGCTGTAACGCTCACGCAACC
E I T H P K N N Y S S R T P C S S L L P L N A H A T
ACCTCTGGAAAACAGAGTAACTTCCACCCGAAAATCATCCAGTCAACACAAACCCTCCGAGGGGAAAGCAGCAAACCC
T S G K Q S N F T R K S S S H T K P S E G K A A N P
AAAATGGCGAGCAACCTTCCAGCACTGCGGACAGTCTCACAGACCCGACCCGCTAATAAGCAGAATGGATCTGCTAGT
K M A S N L P S T A D S S H Q T A P A N K Q N G S A S
CAACGACGAAGATTTAATCCGAGTATCACAACAACAGGCTGAACGGATCTGCCAAGCCACAGGGCAGTGGTAACGAC
Q R R R F N P Q Y H N N R L N G S A K P Q G S G N D
AACGACCCGATGGGAAAAGGCAACAACCGCCACGAACACAGAAGACAGCCACACAACGGCTTCCGTCCCAAAAACAAG
N D P M G K G N N R H E H R R Q P H N G F R P K N K
GGCGGCGCAAAAACCAAGAAGCCTCTTTGGGGACAAAAGACCCCGAGGCCCGCCATCCGAAAAGCCCCGGCGA
G G A K N Q E A S L G T K T P E A P A H P E K P R R
AGGCAGCAGCCGACAGACAACCTCGGAAGCCAGGCCTTTCCGGGAAAACGTCTCCAGGGTTTACAGTGAATCTCTGC
R Q H A A D N S E A R P F R G N V S R V S Q C N L C
CCCACGAGAATAGAAGTTTCCACGGAGGCTGCCGTCTCTGTGCCAGCTGTGACATTGGTGGCT**TGA**GCTCGGAGAGAA
P T R I E V S T E A A V L S V P A V T L V A *
AAAAAAGGAAAAGAAAAGCAAGTTTCACTCAGTTTGGATCCCCGCCGAGGTGCTGACCCAGTTCGCTGCCAAAAGAGAG
TCAGTCTGAATCTACAAACCCTGTACGGCTGTGGCATCTGTCTTAATCATTTTTACTAATTCTAATAATCAGCTTAGCTTGCAT
ATCTCCATGGCTTTGCTTGTGCTGTTGGCGCTTTTCTCATCAGGACATTGCAGCATTTAGCCAGGCAGTATTACTCATTGTTA
GGAAAATGGAGTTTGGCTACAGATCAGAGGCTCAGTAGCAACCTATGTTGTAGCAGTGCATCAATCCATTGATCGTCTTAGA
GAGTTAATGTGAAAACAAAATTCTTATTGATCAGACAAACATGATCTGTGTAAGACAGTGCCTTTTGTAGAATTTAACATCTG
GTGTTTTCTGAAAAATATATATACATATATTGCTTTATTGAAACAAATTAATAATGCTGCATTGAAAAAATAAAAAAAAAA
AAAAAA

supplemental material 2. The cDNA and amino acid sequence of the swine *SPATS2L* gene (GenBank accession number: GU474997). ATG, start codon; TGA, stop codon (* - stop codon).

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Human          -----MAYSTRSKMAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Rhesus         -----MAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
White-tufted-ear -----MAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Pig            -----MAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Dog            -----MAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Horse         -----MAELNPHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Rat           -----MAELNTHVNVKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
Mouse         MAGTQETGASASKAYTPRRKMAELNTHVNIKEKIYAVRSVVPNKSNEIVLVLQQFDFNV
                *****:***:*****

Human          DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKVERPEAGPLQPQP
Rhesus         DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKVERPEAGPLQPQP
White-tufted-ear DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKVERPEAGSLQPLP
Pig            DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKEAKDKAERPDAGPLQPPA
Dog            DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKAERPDAGSLQPPP
Horse         DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKAERLEAGPPQAP
Rat           DKAVQAFVDGSAIQVLKEWSMTGKKKNNKRKRSKSKQHQNKDAKDKGERPEVGPLQPPA
Mouse         DKAVQAFVDGSAIQVLKEWNMTGKKKNNKRKRSKSKQHQNKDAKDKVERPEVGPLQPPA
                *****:*****:***** **:* ** * :. . * .

Human          -PQIQNGPMNGCEKDSSTSDSANEPALIPREKKISILEEPSKALRGVTEGNRLQKLS
Rhesus         -PQIQNGPMNGCEKDSSTSDSANEPALVPREKKISIPPEEPSKALRGVTEGNRLQKLS
White-tufted-ear -PQIQNGPMNGCEKDSSTSDSNEKPALNPREKKISILEEPSKALRGVTEGNRLQKLS
Pig            APQIQNGHVNCGCEKDSSTDSASEKPAPAPREKKISILEEPSKALRGVTEGNRPLQKLS
Dog            -PQIQNGHVNCGCEKDSSTDSASEKPVLIIPREKKISILEEPSKALRGVTEGNRPLQKLS
Horse         PPQIQNGHANGCEKDSSTSDSASEKPAPAPREKKISILEEPSKALRGVTEGNRPLQKLS
Rat           -PLVQNGHMNGCEKDSSTSPDSAREKLALTPREKKISILEEPRAQRGITEGSRLLQKMS
Mouse         -PLVQNGHMNGCEKDSSTSPDSTREKLALTPREKKISILEEPRAQRGVTGGRLQKMS
                * :*** *****.* ** : * . ***** **.* **:* ** * :***:

Human          LDGNPKPIHGTTERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Rhesus         LDGNPKPIHGTTERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
White-tufted-ear LDGNPKPIHGTAERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Pig            LDGSPKSIHGTPERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Dog            LDGNPKPIHGTPERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Horse         LDGNPKPIHGTPERSDGLQWSAEQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Rat           LDGNPKPIHGTPERSDGLQWSAGQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
Mouse         LDGNPRAIHGTPERSDGLQWSAGQPCNPSKPKAKTSPVKSNTPAAHLEIKPDELAKKRGF
                ***.*:***.* ** * ** :***** :*****

Human          NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Rhesus         NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
White-tufted-ear NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Pig            NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Dog            NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Horse         NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Rat           NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
Mouse         NIEKSVKDLQRCTVSLTRYRVMIKEEVDSSVKKIKAAFAELHNCIIDKEVSLMAEMDKVK
                *****

Human          EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
Rhesus         EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
White-tufted-ear EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
Pig            EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFPC
Dog            EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
Horse         EEAMEILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
Rat           EEAMDILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
Mouse         EEAMDILTARQKKAEEELKRLTDLASQMAEMQLAELRAEIKHFVSEKRYDEELGKAARFSC
                ****:* ** :*****

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Human      DIEQLKAQIMLCGEITHPKNNYSRTPCSSLLPLLNAHAATS GKQSNF SRKSSSTHNKPSE
Rhesus     DIEQLKAQIMLCGEITHPKNNYSRTPCSSLLPLLNAHAATS GKQSNF SRKSSSTHNKPSE
White-tufted-ear DIEQLKAQIMLCGEITHPKNNYSRTPCSSLLPLLNVHAATS GKQNNF SRKSSSTHNKPSE
Pig        DIEQLKAQIMLCGEITHPKNNYSRTPCSSLLPLLNAHAATS GKQSNF TRKSSSHTKPSSE
Dog         DIEQLKAQIMLCGEITHPKNNYSRTPCSSLLPLLNAHAATS GKQSNF TRKSSNHNKPSE
Horse      DIEQLKAQIMLCGEITHPKNYSRTPCSSLLPLLSAHAHA-GRQGSFARKPSGHGKPSSE
Rat        DIEQLKAQILICGEITHPKNNYSRTPCSSLLPLLNTHAVASGKQGNF SRKSSGHNKPSSE
Mouse      DIEQLKAQILICGEITHPKNYSRTPCSSLLPLLNTHAVASGKQGNFARKSSGHNKPSSE
*****:*****.*****.***.:*:*:*:*:* * * *.*

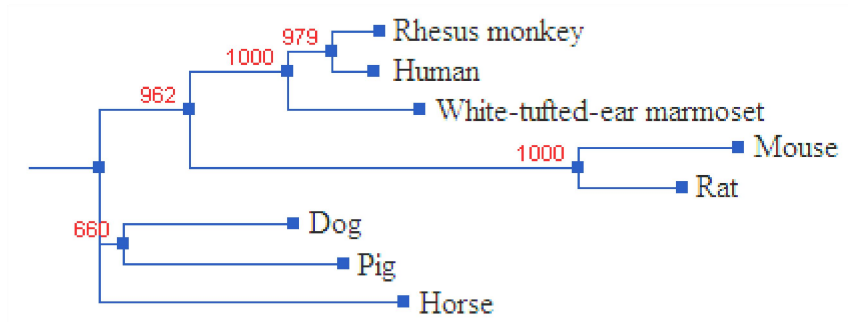
Human      GKAANPKMVSSLPSTADPSHQTMPANKQ-NGSSNQRRRFNPQYHNNRLNGPAKSQGSNGE
Rhesus     GKAANPKMVSSLPSTIDPSHQAMPANKQ-NGSSNQRRRFNPQYHNNRLNGPAKSQGSNGE
White-tufted-ear GKAANPKMVSSLPSTIDPSHQAMAANKQ-NGSSNQRRRFNPQYHNNRLNGPAKSQGSNGE
Pig        GKAANPKMASNLPSTADSSHQATAPANKQ-NGSASQRRRFNPQYHNNRLNGSAKPSQGSNGD
Dog         GKAANPKMASNLP SAADSSHQAMPANKQ-NGSSSQRRRFNPQYHNNRLNGSAKPSQGSNGE
Horse      GKAPNPKLASSLPSPADSSHQAVPAHKQ-NGSSSQRRRFNPQYHNNRLNGSAKPSQGSNGE
Rat        GKAANPKMVSGLPSTADACQQTMTNKQQNGPSNQRRRFNPQYHN-RLNGPAKSQGSNGE
Mouse      GKAANPKMVSGLANTADACHQTMPTNKQQNGPSSQRRRFNPQYHN-RLNGPAKSQGSNGE
***.***:*. *... *...: ::* * *.:***** * * *.*.***.***.***:

Human      AEPLGKGNRHEHRRQPHNGFRPKNKGG-AKNQEASLGMKTPEAPAHSEKPRRRQHAADT
Rhesus     ADPLGKGNRHEHRRQPHNGFRPKNKGG-AKNQEASLGMKTPEAPAHSEKPRRRQHAADT
White-tufted-ear ADPLGKGNRHEHRRQPHNGFRPKNKGG-AKNQEAPLGTKTPEAPAHSEKPRRRQHAADT
Pig        NDPMGKGNRHEHRRQPHNGFRPKNKGG-AKNQEASLGTKTPEAPAHSEKPRRRQHAADN
Dog         ADVMMKGNRHEHRRQPHNGFRPKNKGG-AKNQEAPLGIKTPEAPAHSEKPRRRQHTVDN
Horse      ADPMAGKGNRHEHRRQPHNGFRPKNKGGGNKNQETPLGTKTPEAPAHSEKPRRRQHAADN
Rat        ADPMVKSNNRHEHRRQPHNGFRPKNKGG-AKNQEAPLGTKAPEAPPHSEKARRRQHAADN
Mouse      ADPMAKSNSRHEHRRQPHNGFRPKNKGG-AKNQEAPLGTKAPEAPPHSEKARRRQHAADN
: : *.*.***** * * *.:* * *.*.***.***.***:

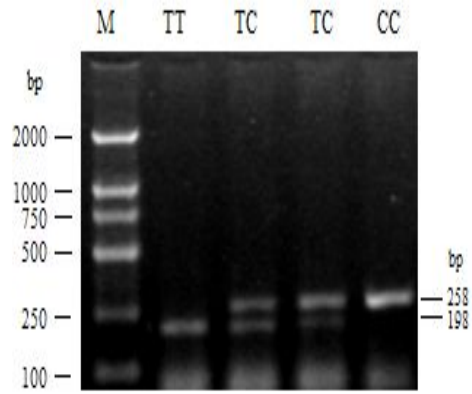
Human      SEARPFGRSVGRVSVQCNCPTRIEVSTDAAVLSVPAVTLVA
Rhesus     AEARPFGRSVGRVSVQCNCPTRIEVSTDAAVLSVPAVTLVA
White-tufted-ear SEARPFGRSVGRVSVQCNCPTRIEVSTDAAVLSVPAVTLVA
Pig        SEARPFGRNVSRVSVQCNCPTRIEVSTEAAVLSVPAVTLVA
Dog         SEARPFGRNVARVSVQCNCPTRIEVSTDAAVLSVPAVTLVA
Horse      SEARPFGRNVARVSVQCNCPTRIEVATDAAVLSVPAVTLVA
Rat        LETRPFGRNVGRVSVQCNCPTRIEVSTEATVLSVPAVTLVA
Mouse      LEARPFGRNVSRVSVQCNCPSRIEVSTEATVLSVPAVTLVA
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supplemental material 3. The alignment of the protein encoded by porcine *SPATS2L* gene and other seven kinds of *SPATS2L* proteins



supplemental material 4. The phylogenetic analysis for *SPATS2L* genes



supplemental material 5. Polymorphism analysis on the porcine *SPATS2L* gene by PCR-*Pst* I-RFLP.
Note: *CC*: 258bp; *TC*: 258bp+198bp+60bp; *TT*: 198bp+60bp