```
1          11         21         31         41
MASAGNAAEP QDRGGGGSGC IGAPGRPAGG GRRRRTGGLR RAAAPDRDYL
eeeeebeee  eeeeebeee  eeeeeeeee  eeeeeeeee  eeeeeeeeb

51         61         71         81         91
HRPSYCDAAF ALEQISKGKA TGRKAPLWLR AKFQRLLFKL GCYIQKNCGK
eeeeebebbb bbeebeeeee eeeebebbbe bebeebbbeb bbebeeebbe
           f  f           f    f   s     s   ss  sf fssf

101        111        121        131        141
FLVVGLLIFG AFAVGLKAAN LETNVEELWV EVGGRVSREL NYTRQKIGEE
bbbbbbbbbb bbbbbbbbbb beeebeebbb ebeeebeeeb eebeeeeeee
  s   ss   s sssss s     ff   f ss  f  ffsf f    fs   f fff

151        161        171        181        191
AMFNPQLMIQ TPKEEGANVL TTEALLQHLD SALQASRVHV YMYNRQWKLE
bbbbbebbbe eeeeeeebb  bbebbeeebe ebbeebebeb bbbeeebebe
     f ssf f       f     ss    f fs   fs          s s

201        211        221        231        241
HLCYKSGELI TETGYMDQII EYLYPCLIIT PLDCFWEGAK LQSGTAYLLG
ebbeeeeeb  beebbbeebb eebbebbbbb bbebbbeebe eeebebebee
    s ffff       f         fs  s      ssf      f f f  f   s

251        261        271        281        291
KPPLRWTNFD PLEFLEELKK INYQVDSWEE MLNKAEVGHG YMDRPCLNPA
eeebebbebe eeebeebee  beeebeebee bbeebeebbb bbeeebeeee
        f f f             fs  f   s   ss  f sf  f

301        311        321        331        341
DPDCPATAPN KNSTKPLDMA LVLNGGCHGL SRKYMHWQEE LIVGGTVKNS
eeebeeeeee eeeeeeebb  eebebebeee beebebeeee bbbebeeeee
f   sf    f           s sfs  ff  s f s  sfff ss  f

351        361        371        381        391
TGKLVSAHAL QTMFQLMTPK QMYEHFKGYE YVSHINWNED KAAAILEAWQ
eeebbbbebb ebbbebbbee ebeeebeeee ebbebebeee ebbbbbebbe
     s ss  f    fsssff fs  ff          fsf  fs   ssf sf

401        411        421        431        441
RTYVEVVHQS VAQNSTQKVL SFTTTTLDDI LKSFSDVSVI RVASGYLLML
eebbeebeeb beeeeeeebb bbebbebeeb beebbebbbb ebbbbbbbbb
f              f   f     sf sf  fs    fss  s  f    sss ss

451        461        471        481        491
AYACLTMLRW DCSKSQGAVG LAGVLLVALS VAAGLGLCSL IGISFNAATT
bbbbbbbbeb ebeeeeebbb bbbbbbbbbb bbbbebbbbb bebbbebbbe
ssssss sf  fs     fffsss s ss  ss ss fssssss  f ssfsssf

501        511        521        531        541
QVLPFLALGV GVDDVFLLAH AFSETGQNKR IPFEDRTGEC LKRTGASVAL
ebbbbbbbbb bbbebbbbbb bbeeeeeeee bebeeeeeeb beeeebebbb
fsss sssss sss f    s  sff          f    ffffs s fffsfs s

551        561        571        581        591
TSISNVTAFF MAALIPIPAL RAFSLQAAVV VVFNFAMVLL IFPAILSMDL
bbbeebbbbb bbbbbbbebb bbbebebbbb bbbbbbbbbb bbbbbbbbbb
ss  ff  ss sss    ssf s  sf  f          s    sss s ss
```

601 YRREDRRLDI
e e e e e e e b e b
  f f     f f

611 FCCFTSPCVS
b b b b b b e b b e
    s s

621 RVIQVEPQAY
e b b e b e e e e b

631 TDTHDNTRYS
e e e e e e e e e e

641 PPPPYSSHSF
e e e e e e e e e b

651 AHETQITMQS
e e e b e b e b e e
      s   f   f

661 TVQLRTEYDP
e b e b e e e b e e
  f       f     f

671 HTHVYYTTAE
e e e b b b b b e
              s

681 PRSEISVQPV
e e e e b e e e e e

691 TVTQDTLSCQ
e e e e e e e e e e

701 SPESTSSTRD
e e e e e e e b e e
        f   f f

711 LLSQFSDSSL
b b e e b e e e e e
    s     f

721 HCLEPPCTKW
e b e e e b b e b
              s

731 TLSSFAEKHY
e b e b b e e e e
    f       s f   s

741 APFLLKPKAK
b e b b e e e e e
  s f   s f         f

751 VVIFLFLGL
b b b b b b b b b
    s   s   s

761 LGVSLYGTTR
b b b b b e b b b e
    s   s   f s s

771 VRDGLDLTDI
b e e b e b b b b
  s   f s s   s s s s

781 VPRETREYDF
b e e e e e b e b
  s f f   f   f   s

791 IAAQFKYFSF
b e b e b e b b b b
        s f     s s

801 YNMYIVTQKA
b b b b b b b e e e
    s   s   s

811 DYPNIQHLLY
e e e e b e e b b e
      f     f   s

821 DLHRSFSNVK
e b e e e b e e b e
          f   s

831 YVMLEENKQL
b b b e e e e e e b

841 PKMWLHYFRD
e e b b b b b b e
  f   s s

851 WLQGLQDAFD
b b e e b e e b b e
  s s     f   s f

861 SDWETGKIMP
e e b e e b e b e e
      f       s

871 NNYKNGSDDG
e e e e e e e e e b
          f f f   f

881 VLAYKLLVQT
b b b b e b b b e e
    s s s f s s   f f

891 GSRDKPIDIS
e e e e e e e b e
  f           f

901 QLTKQRLVDA
e b b e e e b b e e

911 DGIINPSAFY
e e b b e e b b b
          f

921 IYLTAWVSND
b b b b b b e e e
        s s     f f f

931 PVAYAASQAN
e b b b b e e e e
  f s   s     f f f f

941 IRPHRPEWVH
b e e e e e e e b e
            f       f f

951 DKADYMPETR
e e e e e e e b b
  f   f f

961 LRIPAAEPIE
b e b e e e e e b e
      s f   f f f   f

971 YAQFPFYLNG
e b e b b b b b e b
  f   f s s s s s

981 LRDTSDFVEA
b e e b e b b e b
  s     s   f s   f

991 IEKVRTICSN
b e e b e b b b e
  s f f s f       s   f

1001 YTSLGLSSYP
b b e e e b e e e e
          f         f f

1011 NGYPFLFWEQ
e e e b b b b b e e
  f f f s s     s s f f

1021 YIGLRHWLLL
b b e b b b b b b b
  s       s s s       s

1031 FISVVLACTF
b b b b b b b b b b
              s   s s s

1041 LVCAVFLLNP
b b b b b b b b b b
    s s       s s

1051 WTAGIIVMVL
b e b b b b b b b b
  s f s     s s     s

1061 ALMTVELFGM
b b b b b b b b b b
      s     s   s s s s

1071 MGLIGIKLSA
b b b b b e b e b
  s s s     s f s f s

1081 VPVVILIASV
b b b b b b b b b b
  s s s s s s   s s s

1091 GIGVEFTVHV
b b b b e b b b b b
  s s s s   f s s s s

1101 ALAFLTAIGD
b b b b b b b b e e
  s s   s s s       f

1111 KNRRAVLALE
e e e b b b b b e
        f       s s f

1121 HMFAPVLDGA
e b b b b b b b e b
  f   s s s s   s f s

1131 VSTLLGVLML
b b b b b b b b b b
    s s   s s s s s s

1141 AGSEFDFIVR
b b b e b e b b b e
  s s s f s f s s

1151 YFFAVLAILT
b b b b b b b b b b
      s   s s     s s

1161 ILGVLNGLVL
b b b b b e b b b b
              f s s

1171 LPVLLSFFGP
b b b b b e b b e e
      s     s f       f

1181 YPEVSPANGL
e e e e e e e e e e

1191 NRLPTPSPEP
e e e e e e e e e e
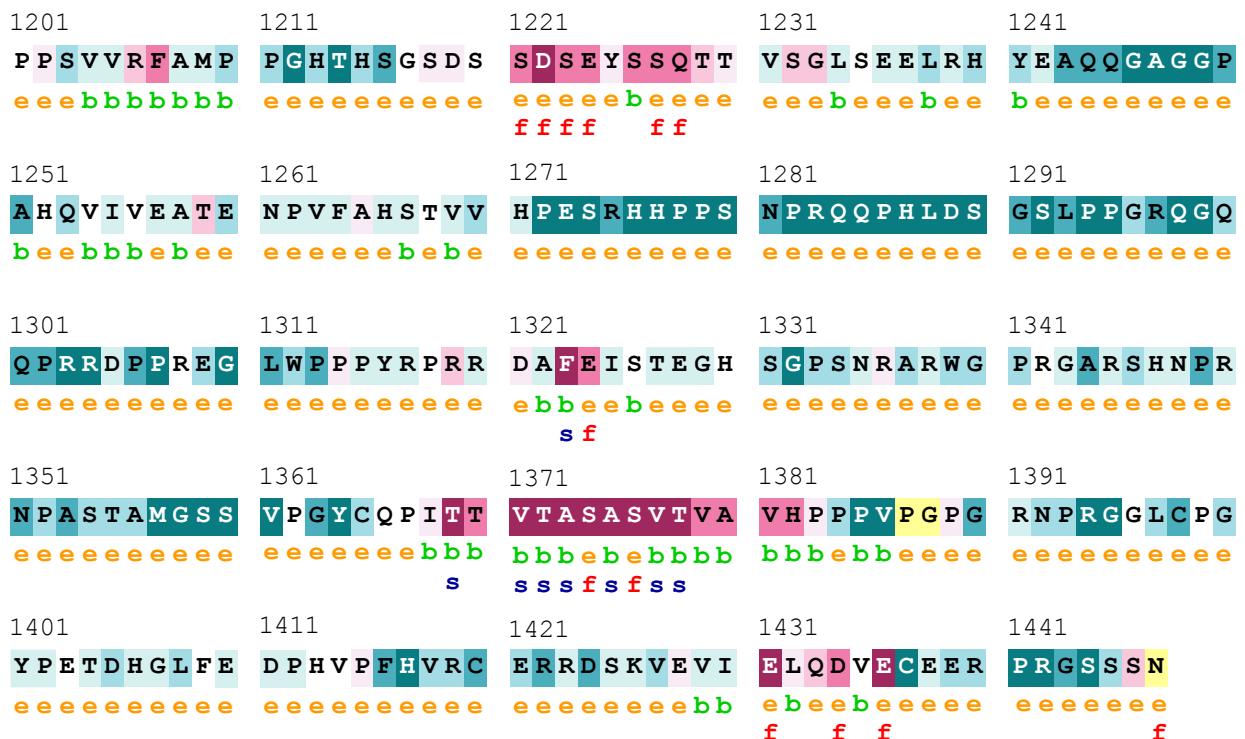
**Figure S1.** The complete sequence of PTCH1 analyzed using the Consurf platform.