人科*COL4A5*基因一共有23个中断，不在人的有1个，占比约4.3%

Site 1

GFPGLQGPPGPPGIPGMKGEPGSIIMSSLPGPKGNP Bonobo

GFPGLQGPPGPPGIPGMKGEPGSIIMSSLPGPKGNP Chimpanzee

GFPGLQGPPGPPGIPGMKGEPGSIIMSSLPGPKGNP Homo\_sapiens 160-167

GFPGLQGPPGPPGIPGMKGEPGSIIMSSLPGPKGNP Gorilla\_gorilla

GFPGLQGPPGPPGIPGMKGEPGSIIMSSLPGPKGNP Pongo\_abelii

Site 2

GPPGPPGLMGPPGPPGLPGPKGNMGLNFQGPKGEKGEQ Bonobo

GPPGPPGLMGPPGPPGLPGPKGNMGLNFQGPKGEKGEQ Chimpanzee

GPPGPPGLMGPPGPPGLPGPKGNMGLNFQGPKGEKGEQ Homo\_sapiens 220-223

GPPGPPGLMGPPGPPGLPGPKGNMGLNFQGPKGEKGEQ Gorilla\_gorilla

GPPGPPGLMGPPGPPGLPGPKGNMGLNFQGPKGEKGEQ Pongo\_abelii

Site 3

GLQGPPGPPGQISEQKRPIDVEFQKGDQGLPGDR Bonobo

GLQGPPGPPGQISEQKRPIDVEFQKGDQGLPGDR Chimpanzee

GLQGPPGPPGQISEQKRPIDVEFQKGDQGLPGDR Homo\_sapiens 243-257

GLQGPPGPPGQISEQKRPTDVEFQKGDQGLPGDR Gorilla\_gorilla

GLQGPPGPPGQISEQKRPIDVEFQKGDQGLPGDR Pongo\_abelii

Site 4

GPPGIRGPPGPPGGEKGEKGEQGEPGKRGKPGKD Bonobo

GPPGIRGPPGPPGGEKGEKGEQGEPGKRGKPGKD Chimpanzee

GPPGIRGPPGPPGGEKGEKGEQGEPGKRGKPGKD Homo\_sapiens

GPPGIRGPTGPPGGEKGEKGEQGEPGKRGKPGKD Gorilla\_gorilla 277-288GG

GPPGIRGPPGPPGGEKGEKGEQGEPGKRGKPGKD Pongo\_abelii

Site 5

GRDGEKGQKGDTGPPGPPGLVIPRPGTGITIGEKGNI Bonobo

GRDGEKGQKGDTGPPGPPGLVIPRPGTGITIGEKGNI Chimpanzee

GRDGEKGQKGDTGPPGPPGLVIPRPGTGITIGEKGNI Homo\_sapiens 344-355

GRDGEKGQKGDTGPPGPPGLVIPRPGTGITIGEKGNI Gorilla\_gorilla

GRDGEKGQKGDTGPPGPPGLVIPRPGTGITIGEKGNI Pongo\_abelii

Site 6

GFPGIQGPPGLPGPPGAAVMGPPGPPGFPGERGQK Bonobo

GFPGIQGPPGLPGPPGAAVMGPPGPPGFPGERGQK Chimpanzee

GFPGIQGPPGLPGPPGAAVMGPPGPPGFPGERGQK Homo\_sapiens 390-393

GFPGIQGPPGLPGPPGAAVMGPPGPPGFPGERGQK Gorilla\_gorilla

GFPGIQGPPGLPGPPGAAVMGPPGPPGFPGERGQK Pongo\_abelii

Site 7

GDEGPPGISIPGPPGLDGQPGAPGLPGPPGPA Bonobo

GDEGPPGISIPGPPGLDGQPGAPGLPGPPGPA Chimpanzee

GDEGPPGISIPGPPGLDGQPGAPGLPGPPGPA Homo\_sapiens 416-419

GDEGPPGISIPGPPGLDGQPGAPGLPGPPGPA Gorilla\_gorilla

GDEGPPGISIPGPPGLDGQPGAPGLPGPPGPP Pongo\_abelii

Site 8

GPPGPAGPHIPPSDEICEPGPPGPPGSPGDKGLQ Bonobo

GPPGPAGPHIPPSDEICEPGPPGPPGSPGDKGLQ Chimpanzee

GPPGPAGPHIPPSDEICEPGPPGPPGSPGDKGLQ Homo\_sapiens 442-453

GPPGPAGPHIPPSDEICEPGPPGPPGSPGDKGLQ Gorilla\_gorilla

GPPGPPGPHIPPSDEICEPGPPGPPGSPGDKGLQ Pongo\_abelii

Site 9

GEQGVKGDKGDTCFNCIGTGISGPPGQPGLPGLP Bonobo

GEQGVKGDKGDTCFNCIGTGISGPPGQPGLPGLP Chimpanzee

GEQGVKGDKGDTCFNCIGTGISGPPGQPGLPGLP Homo\_sapiens 479-487

GEQGVKGDKGDTCFNCIGTGISGPPGQPGLPGLP Gorilla\_gorilla

GEQGVKGDKGDTCFNCIGTGISGPPGQPGLPGLP Pongo\_abelii

Site 10

GFPGSKGEPGDILTFPGMKGDKGELGSPGAPGLP Bonobo

GFPGSKGEPGDILTFPGMKGDKGELGSPGAPGLP Chimpanzee

GFPGSKGEPGDILTFPGMKGDKGELGSPGAPGLP Homo\_sapiens 549-554

GFPGSKGEPGDILTFPGMKGDKGELGSPGAPGLP Gorilla\_gorilla

GFPGSKGEPGDILTFPGMKGDKGELGSPGAPGLP Pongo\_abelii

Site 11

GLPGPKGEPGGITFKGERGPPGNPGLPGLPGNI Bonobo

GLPGPKGEPGGITFKGERGPPGNPGLPGLPGNI Chimpanzee

GLPGPKGEPGGITFKGERGPPGNPGLPGLPGNI Homo\_sapiens 595-599

GLPGPKGEPGGITFKGERGPPGNPGLPGLPGNI Gorilla\_gorilla

GLPGPKGEPGGITFKGERGPPGNPGLPGLPGNI Pongo\_abelii

Site 12

GNPGLPGLPGNIGPMGPPGFGPPGPVGEKGIQGVA Bonobo

GNPGLPGLPGNIGPMGPPGFGPPGPVGEKGIQGVA Chimpanzee

GNPGLPGLPGNIGPMGPPGFGPPGPVGEKGIQGVA Homo\_sapiens 625

GNPGLPGLPGNIGPMGPPGFGPPGPVGEKGIQGVA Gorilla\_gorilla

GNPGLPGLPGNIGPMGPPGFGPPGPVGEKGIQGVA Pongo\_abelii

Site 13

GIPGPKGDPGQTITQPGKPGLPGNPGRDGDVGLP Bonobo

GIPGPKGDPGQTITQPGKPGLPGNPGRDGDVGLP Chimpanzee

GIPGPKGDPGQTITQPGKPGLPGNPGRDGDVGLP Homo\_sapiens 657-662

GIPGPKGDPGQTITQPGKPGLPGNPGRDGDVGLP Gorilla\_gorilla

GIPGPKGDPGQTITQPGKPGLPGNPGRDGEVGLP Pongo\_abelii

Site 14

GSKGEPGIPGIGLPGPPGPKGFPGIPGPPGAPGTP Bonobo

GSKGEPGIPGIGLPGPPGPKGFPGIPGPPGAPGTP Chimpanzee

GSKGEPGIPGIGLPGPPGPKGFPGIPGPPGAPGTP Homo\_sapiens 706

GSKGEPGIPGIGLPGPPGPKGFPGIPGPPGAPGTP Gorilla\_gorilla

GSKGEPGIPGIGLPGPPGPKGFPGIPGPPGAPGTP Pongo\_abelii

Site 15

GPPGFPGPKGEPGFALPGPPGPPGLPGFKGTLGPK Bonobo

GPPGFPGPKGEPGFALPGPPGPPGLPGFKGTLGPK Chimpanzee

GPPGFPGPKGEPGFALPGPPGPPGLPGFKGALGPK Homo\_sapiens 753-756

GPPGFPGPKGEPGFALPGPPGPPGLPGFKGTLGPK Gorilla\_gorilla

GPPGFPGPKGEPGFALPGPPGPPGLPGFKGTLGPK Pongo\_abelii

Site 16

GPMGPPGLPGIGVQGPPGPPGIPGPIGQPGLHGIP Bonobo

GPMGPPGLPGIGVQGPPGPPGIPGPIGQPGLHGIP Chimpanzee

GPMGPPGLPGIGVQGPPGPPGIPGPIGQPGLHGIP Homo\_sapiens 818

GPMGPPGLPGIGVQGPPGPPGIPGPIGQPGLHGIP Gorilla\_gorilla

GPMGPPGLPGIGVQGPPGPPGIPGPIGQPGLHGIP Pongo\_abelii

Site 17

GEKGDPGPPGLDVPGPPGERGSPGIPGAPGPIGPP Bonobo

GEKGDPGPPGLDVPGPPGERGSPGIPGAPGPIGPP Chimpanzee

GEKGDPGPPGLDVPGPPGERGSPGIPGAPGPIGPP Homo\_sapiens 853-856

GEKGDPGPPGLDVPGPPGERGSPGIPGAPGPIGPP Gorilla\_gorilla

GERGDPGPPGLDVPGPPGERGSPGIPGAPGPIGPP Pongo\_abelii

Site 18

GEPGLPGPPGPMDPNLLGSKGEKGEPGLPGIPGVS Bonobo

GEPGLPGPPGPMDPNLLGSKGEKGEPGLPGIPGVS Chimpanzee

GEPGLPGPPGPMDPNLLGSKGEKGEPGLPGIPGVS Homo\_sapiens 954-960

GEPGLPGPPGPMDPNLLGSKGEKGEPGLPGIPGVS Gorilla\_gorilla

GEPGLPGPPGPMDPNLLGSKGEKGEPGLPGIPGVS Pongo\_abelii

Site 19

GQKGDKGDPGISSIGLPGLPGPKGEPGLPGYPGNP Bonobo

GQKGDKGDPGISSIGLPGLPGPKGEPGLPGYPGNP Chimpanzee

GQKGDKGDPGISSIGLPGLPGPKGEPGLPGYPGNP Homo\_sapiens 1070-1073

GQKGDKGDPGISSIGLPGLPGPKGEPGLPGYPGNP Gorilla\_gorilla

GQKGDKGDPGISSIGLPGLPGPKGEPGLPGYPGNP Pongo\_abelii

Site 20

GIPGPAGQKGEPGQPGFGNPGPPGLPGLSGQKGDG Bonobo

GIPGPAGQKGEPGQPGFGNPGPPGLPGLSGQKGDG Chimpanzee

GIPGPAGQKGEPGQPGFGNPGPPGLPGLSGQKGDG Homo\_sapiens 1189

GIPGPAGQKGEPGQPGFGNPGPPGLPGLSGQKGDG Gorilla\_gorilla

GIPGPAGQKGEPGQPGFGNPGPPGLPGLSGQKGDG Pongo\_abelii

Site 21

GVQGPPGPPGSPGPALEGPKGNPGPQGPPGRPGPT Bonobo

GMQGPPGPPGSPGPALEGPKGNPGPQGPPGRPGPT Chimpanzee

GVQGPPGPPGSPGPALEGPKGNPGPQGPPGRPGPT Homo\_sapiens 1245-1248

GVQGPPGPPGSPGPALEGPKGNPGPQGPPGRPGPT Gorilla\_gorilla

GVQGPPGPPGSPGPALEGPKGNPGPQGPPGRPGPT Pongo\_abelii

Site 22

GPPGPPGLPGPSGQSIIIKGDAGPPGIPGQPGLK Bonobo

GPPGPPGLPGPSGQSIIIKGDAGPPGIPGQPGLK Chimpanzee

GPPGPPGLPGPSGQSIIIKGDAGPPGIPGQPGLK Homo\_sapiens 1373-1378

GPPGPPGLPGPSGQSIIIKGDAGPPGIPGQPGLK Gorilla\_gorilla

GPPGPPGLPGPSGQSIIIKGDSGPPGIPGQPGLK Pongo\_abelii

Site 23\_不在Homo\_sapiens的人科中断

GPPGLPGNGGIKGEKGNPGQPGLPGLPGLKGDQ Bonobo

GPPGLPGNGGIKGEKGNPGQPGLPGLPGLKGDQ Chimpanzee

GPPGLPGNGGIKGEKGNPGQPGLPGLPGLKGDQ Homo\_sapiens 1283-1287

GPPGLPGNGGIKGEKGNPGQPGLPGLPGLKGDQ Gorilla\_gorilla

GSPGLPGNGAIKGEKGNPGQPGLPGLPGLKGDQ Pongo\_abelii