

コラーゲン(I型)の全アミノ酸配列とCTPの関係

コラーゲンは数種類のアミノ酸が連なったもので、Gly(グリシン)という成分が3つおきに配列されているのが特徴。
そのGlyを含むアミノ酸3個の組み合わせがコラーゲンの最小ユニット、すなわち「トリペプチド」なのです。



このユニット一つひとつが
トリペプチド

1N Gln-Leu-Ser-Tyr-Gly-Tyr-Asp-Glu-Lys-Ser-Thr-Gly-Ile-Ser-Val-Pro-

01 Gly-Pro-Met-Gly-Pro-Ser-Gly-Pro-Arg-Gly-Leu-Hyp-Gly-Pro-Hyp-Gly-Ala-Hyp-Gly-Pro-Gln-Gly-Phe-Gln-Gly-Pro-Hyp-Gly-Glu-Hyp-
31 Gly-Glu-Hyp-Gly-Ala-Ser-Gly-Pro-Met-Gly-Pro-Arg-Gly-Pro-Hyp-Gly-Pro-Hyp-Gly-Lys-Asn-Gly-Asp-Asp-Gly-Glu-Ala-Gly-Lys-Pro-
61 Gly-Arg-Hyp-Gly-Glu-Arg-Gly-Pro-Hyp-Gly-Pro-Gln-Gly-Ala-Arg-Gly-Leu-Hyp-Gly-Thr-Ala-Gly-Leu-Hyp-Gly-Met-Hyl-Gly-His-Arg-
91 Gly-Phe-Ser-Gly-Leu-Asp-Gly-Ala-Lys-Gly-Asp-Ala-Gly-Pro-Ala-Gly-Pro-Lys-Gly-Glu-Hyp-Gly-Ser-Hyp-Gly-Glu-Asn-Gly-Ala-Hyp-
121 Gly-Gle-Met-Gly-Pro-Arg-Gly-Leu-Hyp-Gly-Glu-Arg-Gly-Arg-Hyp-Gly-Ala-Hyp-Gly-Pro-Ala-Gly-Ala-Arg-Gly-Asn-Asp-Gly-Ala-Thr-
151 Gly-Ala-Ala-Gly-Pro-Hyp-Gly-Pro-Thr-Gly-Pro-Ala-Gly-Pro-Hyp-Gly-Phe-Hyp-Gly-Alg-Val-Gly-Ala-Lys-Gly-Glu-Gly-Gly-Pro-Gln-
181 Gly-Pro-Arg-Gly-Ser-Glu-Gly-Pro-Gln-Gly-Val-Arg-Gly-Glu-Hyp-Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Ala-Ala-Gly-Pro-Ala-Gly-Asn-Hyp-
211 Gly-Ala-Asp-Gly-Glu-Hyp-Gly-Ala-Lys-Gly-Ala-Asn-Gly-Ala-Hyp-Gly-Ile-Ala-Gly-Ala-Hyp-Gly-Phe-Hyp-Gly-Ala-Arg-Gly-Pro-Ser-
241 Gly-Pro-Gln-Gly-Pro-Ser-Gly-Pro-Hyp-Gly-Pro-Lys-Gly-Asn-Ser-Gly-Glu-Hyp-Gly-Ala-Hyp-Gly-Asn-Lys-Gly-Asp-Thr-Gly-Ala-Lys-
271 Gly-Glu-Hyp-Gly-Pro-Thr-Gly-Ile-Gln-Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Glu-Glu-Gly-Lys-Arg-Gly-Ala-Arg-Gly-Glu-Hyp-Gly-Pro-Ala-
301 Gly-Leu-Hyp-Gly-Pro-Hyp-Gly-Glu-Arg-Gly-Gly-Hyp-Gly-Ser-Arg-Gly-Phe-Hyp-Gly-Ala-Asp-Gly-Val-Ala-Gly-Pro-Lys-Gly-Pro-Ala-
331 Gly-Glu-Arg-Gly-Ala-Hyp-Gly-Pro-Ala-Gly-Pro-Lys-Gly-Ser-Hyp-Gly-Glu-Ala-Gly-Arg-Hyp-Gly-Glu-Ala-Gly-Leu-Hyp-Gly-Ala-Lys-
361 Gly-Leu-Thr-Gly-Ser-Hyp-Gly-Ser-Hyp-Gly-Pro-Asp-Gly-Lys-Thr-Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Gln-Asn-Gly-Arg-Hyp-Gly-Pro-Hyp-
391 Gly-Pro-Hyp-Gly-Ala-Arg-Gly-Gln-Ala-Gly-Val-Met-Gly-Phe-Hyp-Gly-Pro-Lys-Gly-Ala-Ala-Gly-Glu-Hyp-Gly-Lys-Ala-Gly-Glu-Arg-
421 Gly-Val-Hyp-Gly-Pro-Hyp-Gly-Ala-Val-Gly-Pro-Ala-Gly-Lys-Asp-Gly-Glu-Ala-Gly-Ala-Gln-Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Pro-Ala-
451 Gly-Glu-Arg-Gly-Glu-Gln-Gly-Pro-Ala-Gly-Ser-Hyp-Gly-Phe-Gln-Gly-Leu-Hyp-Gly-Pro-Ala-Gly-Pro-Hyp-Gly-Glu-Ala-Gly-Lys-Hyp-
481 Gly-Glu-Gln-Gly-Val-Hyp-Gly-Asp-Leu-Gly-Ala-Hyp-Gly-Pro-Ser-Gly-Ala-Arg-Gly-Glu-Arg-Gly-Phe-Hyp-Gly-Glu-Arg-Gly-Val-Glu-
511 Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Pro-Arg-Gly-Ala-Asn-Gly-Ala-Hyp-Gly-Asn-Asp-Gly-Ala-Lys-Gly-Asp-Ala-Gly-Ala-Hyp-Gly-Ala-Hyp-
541 Gly-Ser-Gln-Gly-Ala-Hyp-Gly-Leu-Gln-Gly-Met-Hyp-Gly-Glu-Arg-Gly-Ala-Ala-Gly-Leu-Hyp-Gly-Pro-Lys-Gly-Asp-Arg-Gly-Asp-Ala-
571 Gly-Pro-Lys-Gly-Ala-Asp-Gly-Ala-Pro-Gly-Lys-Asp-Gly-Val-Arg-Gly-Leu-Thr-Gly-Pro-Ile-Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Ala-Hyp-
601 Gly-Asp-Lys-Gly-Glu-Ala-Gly-Pro-Ser-Gly-Pro-Ala-Gly-Pro-Thr-Gly-Ala-Arg-Gly-Ala-Hyp-Gly-Asp-Arg-Gly-Glu-Hyp-Gly-Pro-Hyp-
631 Gly-Pro-Ala-Gly-Phe-Ala-Gly-Pro-Hyp-Gly-Ala-Asp-Gly-Gln-Hyp-Gly-Ala-Lys-Gly-Glu-Hyp-Gly-Asp-Ala-Gly-Ala-Lys-Gly-Asp-Ala-
661 Gly-Pro-Hyp-Gly-Pro-Ala-Gly-Pro-Ala-Gly-Pro-Hyp-Gly-Pro-Ile-Gly-Asn-Val-Gly-Ala-Hyp-Gly-Pro-Hyl-Gly-Ala-Arg-Gly-Ser-Ala-
691 Gly-Pro-Hyp-Gly-Ala-Thr-Gly-Phe-Hyp-Gly-Ala-Ala-Gly-Arg-Val-Gly-Pro-Hyp-Gly-Pro-Ser-Gly-Asn-Ala-Gly-Pro-Hyp-Gly-Pro-Hyp-
721 Gly-Pro-Ala-Gly-Lys-Glu-Gly-Ser-Lys-Gly-Pro-Arg-Gly-Glu-Thr-Gly-Pro-Ala-Gly-Arg-Hyp-Gly-Glu-Val-Gly-Pro-Hyp-Gly-Pro-Hyp-
751 Gly-Pro-Ala-Gly-Glu-Lys-Gly-Ala-Hyp-Gly-Ala-Asp-Gly-Pro-Ala-Gly-Ala-Hyp-Gly-Thr-Pro-Gly-Pro-Gln-Gly-Ile-Ala-Gly-Gln-Arg-
781 Gly-Val-Val-Gly-Leu-Hyp-Gly-Gln-Arg-Gly-Glu-Arg-Gly-Phe-Hyp-Gly-Leu-Hyp-Gly-Pro-Ser-Gly-Glu-Hyp-Gly-Lys-Gln-Gly-Pro-Ser-
811 Gly-Ala-Ser-Gly-Glu-Arg-Gly-Pro-Hyp-Gly-Pro-Met-Gly-Pro-Hyp-Gly-Leu-Ala-Gly-Pro-Hyp-Gly-Glu-Ser-Gly-Arg-Glu-Gly-Ala-Hyp-
841 Gly-Ala-Glu-Gly-Ser-Hyp-Gly-Arg-Asp-Gly-Ser-Hyp-Gly-Ala-Lys-Gly-Asp-Arg-Gly-Glu-Thr-Gly-Pro-Ala-Gly-Pro-Hyp-Gly-Ala-Hyp-
871 Gly-Ala-Hyp-Gly-Ala-Hyp-Gly-Pro-Val-Gly-Pro-Ala-Gly-Lys-Ser-Gly-Asp-Arg-Gly-Glu-Thr-Gly-Pro-Ala-Gly-Pro-Ile-Gly-Pro-Val-
901 Gly-Pro-Ala-Gly-Ala-Arg-Gly-Pro-Ala-Gly-Pro-Gln-Gly-Pro-Arg-Gly-Asp-Hyl-Gly-Glu-Thr-Gly-Glu-Glu-Gly-Asp-Arg-Gly-Ile-Hyl-
931 Gly-His-Arg-Gly-Phe-Ser-Gly-Leu-Gln-Gly-Pro-Hyp-Gly-Pro-Hyp-Gly-Ser-Hyp-Gly-Glu-Gln-Gly-Pro-Ser-Gly-Ala-Ser-Gly-Pro-Ala-
961 Gly-Pro-Arg-Gly-Pro-Hyp-Gly-Ser-Ala-Gly-Ser-Hyp-Gly-Lys-Asp-Gly-Leu-Asn-Gly-Leu-Hyp-Gly-Pro-Ile-Gly-Hyp-Hyp-Gly-Pro-Arg-
991 Gly-Arg-Thr-Gly-Asp-Ala-Gly-Pro-Ala-Gly-Pro-Hyp-Gly-Pro-Hyp-Gly-Pro-Hyp-Gly-Pro-Hyp-Gly-Pro-Pro-

1c Ser-Gly-Gly-Phe-Asp-Phe-Ser-Phe-Leu-Pro-Gln-Pro-Pro-Gln-Glu-Lys-Ala-His-Asp-Gly-Gly-Arg-Tyr-Tyr-Arg-Ala