

Undenatured type 2 collagen

Sample: poly bag containing lyophilized white powder

Amino acid analysis: Dry sample contained 35.5 ± 0.6 % (w/w) total protein. Amino acid composition is dominated by glycine, proline, alanine, and glutamate by weight as expected for a collagen-containing sample. High glycine and proline concentration suggests that collagen type 2 represents approximately 90% of total protein in sample (i.e. approximately 32% in submitted dry sample w/w).

Differential scanning fluorimetry: Sample exhibited thermal shift melting curves consistent with native collagen type 2 control with prominent two-state melting transition which can be attributed to some secondary protein component in the sample. Total protein in sample consists of 36.7% undenatured collagen type 2 in native state by weight (i.e. 13.0% in submitted dry sample w/w). Sample: $T_{\max,1} = 63.2$ °C, $T_{\max,2} = 80.9$ °C, $A = 4451$ AU.°C at 0.2 mg/ml (by dry sample weight). Control: $T_{\max} = 67.1$ °C, $A = 3124$ AU.°C at 0.025 mg/ml.

amino acid	content w/w	amino acid	content w/w
D+N	2,9%	Y	0,3%
E+Q	5,2%	V	1,5%
S	1,2%	M	0,9%
H	0,2%	F	1,0%
G	7,1%	I	0,8%
T	1,3%	L	1,8%
R	3,2%	K	1,3%
A	3,2%	P	3,5%

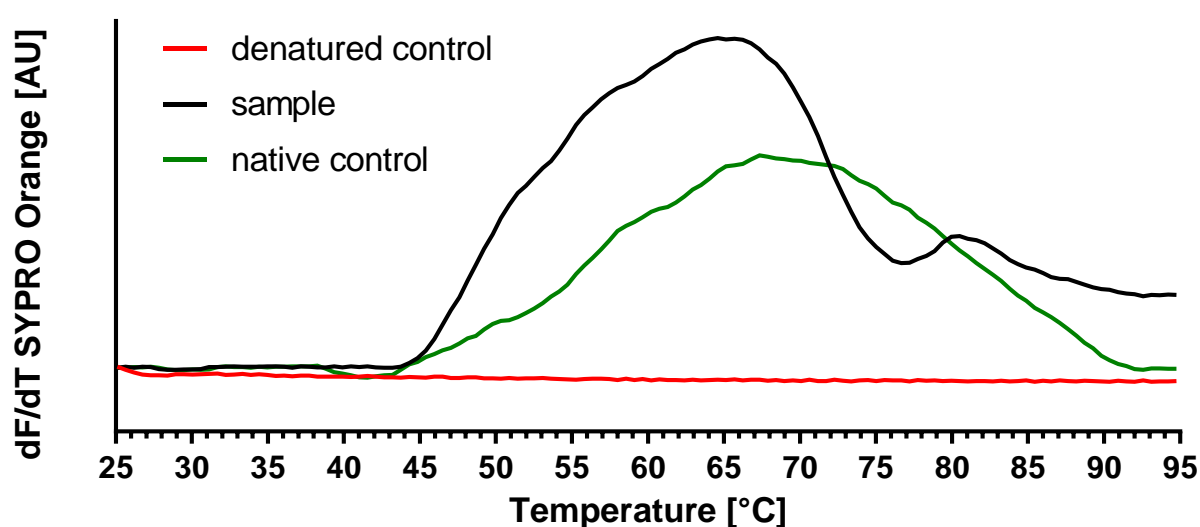


Fig. 1. Melting DSF curves for collagen type 2 samples using thermal shift assay with SYPRO Orange.

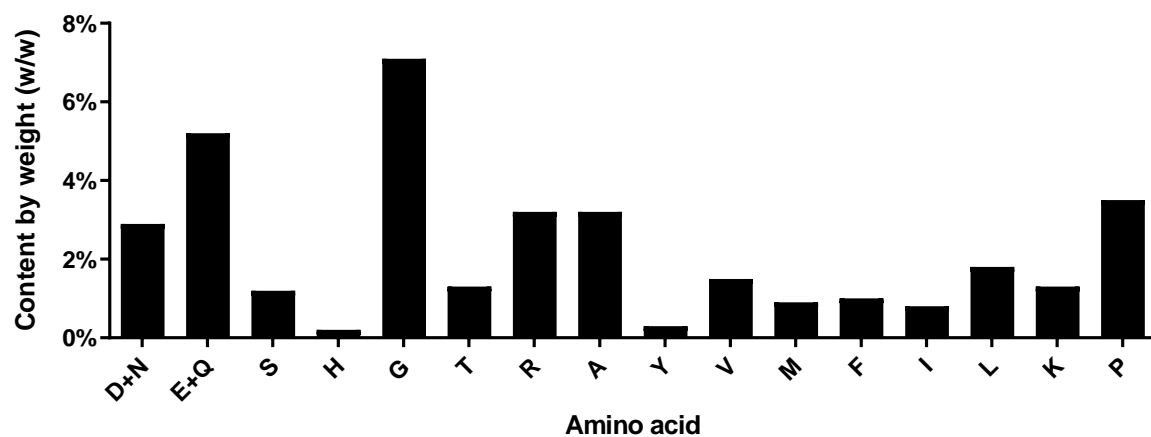


Fig. 2. Amino acid composition of sample by weight (ninhydrin assay)