ALBUMIN, HUMAN

Cat. Number:A93920

CAS **Number**: 70024-90-7

MOLECULAR WEIGHT: 66,248.3[5] or 66,437[8] (based on amino acid composition)

STRUCTURE:

The amino acid sequence and structure of human albumin have been determined. Human albumin is a protein with no carbohydrate content. It is a single polypeptide chain with one free sulfhydryl group on residue # 34 and 17 intrachain disulfide bonds.

Amino Acid ： Asp Asn Thr Ser Glu Gln Pro Gly Ala Cys Val Met Ile Leu Tyr Phe His Lys Trp Arg

Residues ： 39 15 30 22 60 23 25 12 63 35 39 6 8 61 18 30 16 58 1 23

PHYSICAL PROPERTIES:[5]

Sedimentation constant, $S_{20,W}$ X 10^{13}	4.6 (monomer), 6.5 (dimer)
Diffusion constant, $D_{20,W}$ X 10^{7}	6.1
Partial specific volume, V_{20}	0.733
Intrinsic viscosity, h	0.042
Frictional ratio, f/f_0	1.28
Overall dimensions, Å	38 X 150
Isoelectric point (G/2 = 0.15)	4.7
Isoionic point (G/2 = 0)	5.2
Electrophoretic mobility, pH 8.6, G/2 = 0.15	-5.9
Refractive index increment (578 nm) X 10^{-3}	1.89
Optical absorbance, $A_{279\ nm}$ (1 gram/liter)	0.531
Mean residue rotation, $[m']_{233}$	8590
Mean residue ellipticity	17 $[q]_{209\ nm}$; 16 $[q]_{222\ nm}$
Estimated a-helix, %	48
Estimated b-form, %	15

SOLUBILITY / SOLUTION STABILITY:

We tests the solubility of human albumin powders in water at 50 mg/. In the experience of our production chemists, aqueous aliquots stored at –20 ℃ are stable for several months. Repeated freezing and thawing of solutions is not recommended.

PRODUCT DESCRIPTION / USAGE:[7]

Albumins are a group of simple proteins found in the body fluids and tissues of animals and in some plant seeds. Unlike globulins, albumins have low molecular weights, are soluble in water, are easily crystallized and contain an excess of acidic amino acids. Serum and plasma albumin is carbohydrate-free and comprises 55-62% of the protein present. Due to its high charge to mass ratio albumin binds water, Ca^{2+} , Na^{+} , K^{+} , fatty acids, bilirubin, hormones and drugs. The main biological function of albumin is to regulate the colloidal osmotic pressure of blood. Human and bovine albumins contain 16% nitrogen and are often used as standards in protein calibration studies. Due to their free hydrophobic region fatty acid free albumins are used to solubilize lipids in tissue culture, and are also used as blocking agents in Western

blots or ELISA applications. Globulin free albumins are suitable for use in applications where no other proteins should be present (e.g., electrophoresis).