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Supporting Material

Bovine Insulin Filaments Induced by Reducing Disulfide Bonds Show a Different Morphology, Secondary Structure and Cell Toxicity from Intact Insulin Amyloid Fibrils

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TABLE S1 Secondary structure elements from FTIR analysis of native insulin, insulin fibrils and filaments

The wavenumbers of the constituent secondary structure element and the percent component areas (%) are shown. Band components were obtained from curve fitting. Percent component areas (%) are calculated considering the total area as 100%. Standard errors for well-defined components introduce an uncertainty of 10 -20% in the area measurement. The morphologies (fibrils or filaments) of the samples are determined from TEM observation (Fig.2).

	β -sheet Extended chain		β -sheet Side chain		α -helix		Disordered Turn				Anti-parallel β -sheet	
	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)
Native insulin	1608	6	1628	28	1646	45	1666	21	1681	1		
Insulin - TCEP (fibrils)	1602	8	1623	62	1642	17	1663	13				
Insulin + TCEP (filaments)	1600	3	1619	58	1644	26	1668	11			1693	2

TABLE S2 Secondary structure elements from Raman spectroscopy analysis of insulin fibrils and filaments

The wavenumbers of the constituent secondary structure element and the percent component areas (%) are shown. Band components were obtained from curve fitting. Percent component areas (%) are calculated considering the total area as 100%. Standard errors for well-defined components introduce an uncertainty of 10-20% in the area measurement. The morphologies (fibrils or filaments) of the samples are determined from TEM observation (Fig.2).

	α -helix		Organized β -sheet		Loose β -strand Disordered			
	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)	Peak (cm^{-1})	Area (%)
Insulin - TCEP (fibrils)	1659	15	1675	55	1625	18	1691	12
Insulin + TCEP (filaments)	1660	22	1674	40	1630	19	1689	19