

Amyloid fiber formation in human γ D-crystallin induced by UV-B photodamage

Sean D. Moran, Tianqi O. Zhang, Sean M. Decatur, and Martin T. Zanni

SUPPORTING INFORMATION:

#	b	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	148.0757	74.5415					F							23
2	262.1186	131.5629	245.0921	123.0497			N	2635.3151	1318.1612	2618.2885	1309.6479	2617.3045	1309.1559	22
3	391.1612	196.0842	374.1347	187.5710	373.1506	187.0790	E	2521.2722	1261.1397	2504.2456	1252.6264	2503.2616	1252.1344	21
4	504.2453	252.6263	487.2187	244.1130	486.2347	243.6210	I	2392.2296	1196.6184	2375.2030	1188.1051	2374.2190	1187.6131	20
5	641.3042	321.1557	624.2776	312.6425	623.2936	312.1504	H	2279.1455	1140.0764	2262.1190	1131.5631	2261.1349	1131.0711	19
6	728.3362	364.6717	711.3097	356.1585	710.3256	355.6665	S	2142.0866	1071.5469	2125.0600	1063.0337	2124.0760	1062.5417	18
7	841.4203	421.2138	824.3937	412.7005	823.4097	412.2085	L	2055.0546	1028.0309	2038.0280	1019.5176	2037.0440	1019.0256	17
8	955.4632	478.2352	938.4367	469.7220	937.4526	469.2300	N	1941.9705	971.4889	1924.9440	962.9756	1923.9599	962.4836	16
9	1054.5316	527.7694	1037.5051	519.2562	1036.5211	518.7642	V	1827.9276	914.4674	1810.9010	905.9542	1809.9170	905.4621	15
10	1167.6157	584.3115	1150.5891	575.7982	1149.6051	575.3062	L	1728.8592	864.9332	1711.8326	856.4199	1710.8486	855.9279	14
11	1296.6583	648.8328	1279.6317	640.3195	1278.6477	639.8275	E	1615.7751	808.3912	1598.7485	799.8779	1597.7645	799.3859	13
12	1353.6797	677.3435	1336.6532	668.8302	1335.6692	668.3382	G	1486.7325	743.8699	1469.7060	735.3566	1468.7219	734.8646	12
13	1440.7118	720.8595	1423.6852	712.3462	1422.7012	711.8542	S	1429.7110	715.3592	1412.6845	706.8459	1411.7005	706.3539	11
14	1626.7911	813.8992	1609.7645	805.3859	1608.7805	804.8939	W	1342.6790	671.8431	1325.6525	663.3299	1324.6684	662.8379	10
15	1725.8595	863.4334	1708.8329	854.9201	1707.8489	854.4281	V	1156.5997	578.8035	1139.5732	570.2902	1138.5891	569.7982	9
16	1838.9436	919.9754	1821.9170	911.4621	1820.9330	910.9701	L	1057.5313	529.2693	1040.5047	520.7560	1039.5207	520.2640	8
17	2002.0069	1001.5071	1984.9803	992.9938	1983.9963	992.5018	Y	944.4472	472.7272	927.4207	464.2140	926.4367	463.7220	7
18	2131.0495	1066.0284	2114.0229	1057.5151	2113.0389	1057.0231	E	781.3839	391.1956	764.3573	382.6823	763.3733	382.1903	6
19	2244.1335	1122.5704	2227.1070	1114.0571	2226.1230	1113.5651	L	652.3413	326.6743	635.3148	318.1610	634.3307	317.6690	5
20	2331.1656	1166.0864	2314.1390	1157.5731	2313.1550	1157.0811	S	539.2572	270.1323	522.2307	261.6190	521.2467	261.1270	4
21	2445.2085	1223.1079	2428.1820	1214.5946	2427.1979	1214.1026	N	452.2252	226.6162	435.1987	218.1030			3
22	2608.2718	1304.6396	2591.2453	1296.1263	2590.2613	1295.6343	Y	338.1823	169.5948	321.1557	161.0815			2
23							R	175.1190	88.0631	158.0924	79.5498			

Table S1. Fragment ions in the CID spectrum of parent peptide FNEIHSLSNVLEGSWVLYELSNYR (2781.39, +2), corresponding to Figure 2A. Assigned fragments used in sequence analysis are shown in red.

#	b	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	148.0757	74.5415					F							23
2	262.1186	131.5629	245.0921	123.0497			N	2667.3049	1334.1561	2650.2784	1325.6428	2649.2944	1325.1508	22
3	391.1612	196.0842	374.1347	187.5710	373.1506	187.0790	E	2553.2620	1277.1346	2536.2355	1268.6214	2535.2514	1268.1294	21
4	504.2453	252.6263	487.2187	244.1130	486.2347	243.6210	I	2424.2194	1212.6133	2407.1929	1204.1001	2406.2088	1203.6081	20
5	657.2991	329.1532	640.2726	320.6399	639.2885	320.1479	H	2311.1353	1156.0713	2294.1088	1147.5580	2293.1248	1147.0660	19
6	744.3311	372.6692	727.3046	364.1559	726.3206	363.6639	S	2158.0815	1079.5444	2141.0550	1071.0311	2140.0709	1070.5391	18
7	857.4152	429.2112	840.3886	420.6980	839.4046	420.2060	L	2071.0495	1036.0284	2054.0229	1027.5151	2053.0389	1027.0231	17
8	971.4581	486.2327	954.4316	477.7194	953.4476	477.2274	N	1957.9654	979.4863	1940.9389	970.9731	1939.9549	970.4811	16
9	1070.5265	535.7669	1053.5000	527.2536	1052.5160	526.7616	V	1843.9225	922.4649	1826.8959	913.9516	1825.9119	913.4596	15
10	1183.6106	592.3089	1166.5841	583.7957	1165.6000	583.3037	L	1744.8541	872.9307	1727.8275	864.4174	1726.8435	863.9254	14
11	1312.6532	656.8302	1295.6266	648.3170	1294.6426	647.8250	E	1631.7700	816.3886	1614.7435	807.8754	1613.7595	807.3834	13
12	1369.6747	685.3410	1352.6481	676.8277	1351.6641	676.3357	G	1502.7274	751.8674	1485.7009	743.3541	1484.7169	742.8621	12
13	1456.7067	728.8570	1439.6801	720.3437	1438.6961	719.8517	S	1445.7060	723.3566	1428.6794	714.8433	1427.6954	714.3513	11
14	1658.7809	829.8941	1641.7544	821.3808	1640.7704	820.8888	W	1358.6739	679.8406	1341.6474	671.3273	1340.6634	670.8353	10
15	1757.8493	879.4283	1740.8228	870.9150	1739.8388	870.4230	V	1156.5997	578.8035	1139.5732	570.2902	1138.5891	569.7982	9
16	1870.9334	935.9703	1853.9068	927.4571	1852.9228	926.9651	L	1057.5313	529.2693	1040.5047	520.7560	1039.5207	520.2640	8
17	2033.9967	1017.5020	2016.9702	1008.9887	2015.9862	1008.4967	Y	944.4472	472.7272	927.4207	464.2140	926.4367	463.7220	7
18	2163.0393	1082.0233	2146.0128	1073.5100	2145.0288	1073.0180	E	781.3839	391.1956	764.3573	382.6823	763.3733	382.1903	6
19	2276.1234	1138.5653	2259.0968	1130.0521	2258.1128	1129.5600	L	652.3413	326.6743	635.3148	318.1610	634.3307	317.6690	5
20	2363.1554	1182.0813	2346.1289	1173.5681	2345.1448	1173.0761	S	539.2572	270.1323	522.2307	261.6190	521.2467	261.1270	4
21	2477.1983	1239.1028	2460.1718	1230.5895	2459.1878	1230.0975	N	452.2252	226.6162	435.1987	218.1030			3
22	2640.2617	1320.6345	2623.2351	1312.1212	2622.2511	1311.6292	Y	338.1823	169.5948	321.1557	161.0815			2
23							R	175.1190	88.0631	158.0924	79.5498			1

Table S2. Fragment ions in the CID spectrum of parent peptide FNEIHSLNVLEGSWVLYELSNYR (2813.39, 2 Ox., +3), corresponding to Figure 2B. Assigned fragments used in sequence analysis are shown in red.

#	B	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	148.0757	74.5415					F							14
2	262.1186	131.5629	245.0921	123.0497			N	1497.7332	749.3703	1480.7067	740.8570	1479.7227	740.3650	13
3	391.1612	196.0842	374.1347	187.5710	373.1506	187.0790	E	1383.6903	692.3488	1366.6638	683.8355	1365.6797	683.3435	12
4	504.2453	252.6263	487.2187	244.1130	486.2347	243.6210	I	1254.6477	627.8275	1237.6212	619.3142	1236.6371	618.8222	11
5	641.3042	321.1557	624.2776	312.6425	623.2936	312.1504	H	1141.5636	571.2855	1124.5371	562.7722	1123.5531	562.2802	10
6	728.3362	364.6717	711.3097	356.1585	710.3256	355.6665	S	1004.5047	502.7560	987.4782	494.2427	986.4942	493.7507	9
7	841.4203	421.2138	824.3937	412.7005	823.4097	412.2085	L	917.4727	459.2400	900.4462	450.7267	899.4621	450.2347	8
8	955.4632	478.2352	938.4367	469.7220	937.4526	469.2300	N	804.3886	402.6980	787.3621	394.1847	786.3781	393.6927	7
9	1054.5316	527.7694	1037.5051	519.2562	1036.5211	518.7642	V	690.3457	345.6765			672.3352	336.6712	6
10	1167.6157	584.3115	1150.5891	575.7982	1149.6051	575.3062	L	591.2773	296.1423			573.2667	287.1370	5
11	1296.6583	648.8328	1279.6317	640.3195	1278.6477	639.8275	E	478.1932	239.6003			460.1827	230.5950	4
12	1353.6797	677.3435	1336.6532	668.8302	1335.6692	668.3382	G	349.1506	175.0790			331.1401	166.0737	3
13	1440.7118	720.8595	1423.6852	712.3462	1422.7012	711.8542	S	292.1292	146.5682			274.1186	137.5629	2
14							W	205.0972	103.0522					1

Table S3. Fragment ions in the CID spectrum of parent peptide FNEIHSLNVLEGSW (1643.81, +2), corresponding to Figure 2C. Assigned fragments used in sequence analysis are shown in red.

#	b	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	100.0757	50.5415					V							9
2	213.1598	107.0835					L	1057.5313	529.2693	1040.5047	520.7560	1039.5207	520.2640	8
3	376.2231	188.6152					Y	944.4472	472.7272	927.4207	464.2140	926.4367	463.7220	7
4	505.2657	253.1365			487.2551	244.1312	E	781.3839	391.1956	764.3573	382.6823	763.3733	382.1903	6
5	618.3497	309.6785			600.3392	300.6732	L	652.3413	326.6743	635.3148	318.1610	634.3307	317.6690	5
6	705.3818	353.1945			687.3712	344.1892	S	539.2572	270.1323	522.2307	261.6190	521.2467	261.1270	4
7	819.4247	410.2160	802.3981	401.7027	801.4141	401.2107	N	452.2252	226.6162	435.1987	218.1030			3
8	982.4880	491.7477	965.4615	483.2344	964.4775	482.7424	Y	338.1823	169.5948	321.1557	161.0815			2
9							R	175.1190	88.0631	158.0924	79.5498			1

Table S4. Fragment ions in the CID spectrum of parent peptide VLYELSNYR (1155.60, +2), corresponding to Figure 2D. Assigned fragments used in sequence analysis are shown in red.

#	b	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	187.0866	94.0469					W							10
2	286.1559	143.5811					V	1156.5997	578.8035	1139.5732	570.2902	1138.5891	569.7982	9
3	399.2391	200.1232					L	1057.5313	529.2693	1040.5047	520.7560	1039.5207	520.2640	8
4	562.3024	281.6548					Y	944.4472	472.7272	927.4207	464.2140	926.4367	463.7220	7
5	691.3450	346.1761			673.3344	337.1709	E	781.3839	391.1956	764.3573	382.6823	763.3733	382.1903	6
6	804.4291	402.7182			786.4185	393.7129	L	652.3413	326.6743	635.3148	318.1610	634.3307	317.6690	5
7	891.4611	446.2342			873.4505	437.2289	S	539.2572	270.1323	522.2307	261.6190	521.2467	261.1270	4
8	1005.5040	503.2556	988.4775	494.7424	987.4934	494.2504	N	452.2252	226.6162	435.1987	218.1030			3
9	1168.5673	584.7873	1151.5408	576.2740	1150.5568	575.7820	Y	338.1823	169.5948	321.1557	161.0815			2
10							R	175.1190	88.0631	158.0924	79.5498			1

Table S5. Fragment ions in the CID spectrum of parent peptide WVLYELSNYR (1341.68, +2), corresponding to Figure 2E. Assigned fragments used in sequence analysis are shown in red.

#	B	b++	b*	b*++	b0	b0++	Seq.	y	y++	y*	y*++	y0	y0++	#2
1	203.0815	102.0444					W							10
2	302.1499	151.5786					V	1156.5997	578.8035	1139.5732	570.2902	1138.5891	569.7982	9
3	415.2340	208.1206					L	1057.5313	529.2693	1040.5047	520.7560	1039.5207	520.2640	8
4	578.2973	289.6523					Y	944.4472	472.7272	927.4207	464.2140	926.4367	463.7220	7
5	707.3399	354.1736			689.3293	345.1683	E	781.3839	391.1956	764.3573	382.6823	763.3733	382.1903	6
6	820.4240	410.7156			802.4134	401.7103	L	652.3413	326.6743	635.3148	318.1610	634.3307	317.6690	5
7	907.4560	454.2316			889.4454	445.2264	S	539.2572	270.1323	522.2307	261.6190	521.2467	261.1270	4
8	1021.4989	511.2531	1004.4724	502.7398	1003.4884	502.2478	N	452.2252	226.6162	435.1987	218.1030			3
9	1184.5623	592.7848	1167.5357	584.2715	1166.5517	583.7795	Y	338.1823	169.5948	321.1557	161.0815			2
10							R	175.1190	88.0631	158.0924	79.5498			1

Table S6. Fragment ions in the CID spectrum of parent peptide WVLYELSNYR (1357.67, 1 Ox., +2), corresponding to Figure 2E. Assigned fragments used in sequence analysis are shown in red.