

## Supplementary Data

Matrix-free LDI mass spectrometry platform using patterned nanostructured gold thin film

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The following tables list the identified peaks for the spectra shown in Figure 6. Peaks listed were observed with S/N of 5 or greater.

## Peptide fragments observed using MALDI MS for BSA digest

m/z submitted	MH+ matched	Delta Da	Start	End	Missed clvg	Sequence
656.05	656.35	-0.29	24	28	1	(R)RDTHK(S)
927.55	927.49	0.05	161	167	0	(K)YLYEIAR(R)
1163.69	1163.63	0.06	66	75	0	(K)LVNELTEFAK(T)
1419.59	1419.69	-0.10	89	100	0	(K)SLHTLFGDEL(C(Carbamidomethyl)K(V)
1439.70	1439.81	-0.11	360	371	1	(R)RHPEYAVSVLLR(L)
1443.59	1443.64	-0.05	286	297	0	(K)YIC(Carbamidomethyl)DNQDTISSK(L)
1463.58	1463.59	-0.01	76	88	0	(K)TC(Carbamidomethyl)VADESHAGC(Carbamidomethyl)EK(S)
1479.65	1479.80	-0.14	421	433	0	(K)LGEYGFQNALIVR(Y)
1502.62	1502.61	0.00	375	386	0	(K)EYEATLEEC(Carbamidomethyl)C(Carbamidomethyl)AK(D)
1539.60	1539.82	-0.22	483	495	1	(R)LC(Carbamidomethyl)VLHEKTPVSEK(V)
1554.60	1554.65	-0.05	387	399	0	(K)DDPHAC(Carbamidomethyl)YSTVFDK(L)
1567.56	1567.74	-0.18	347	359	0	(K)DAFLGSFLYEYSR(R)
1577.53	1576.77	0.76	139	151	0	(K)LKPDNTLC(Carbamidomethyl)DEFK(A)
1579.60	1579.73	-0.13	456	468	1	(K)VGTRC(Carbamidomethyl)C(Carbamidomethyl)TKPESER(M)
1595.63	1595.93	-0.30	361	374	1	(R)HPEYAVSVLLRLAK(E)
1639.77	1639.94	-0.17	437	451	1	(R)KVPQVSTPTLVEVSR(S)
1684.50	1684.82	-0.32	286	299	1	(K)YIC(Carbamidomethyl)DNQDTISSK(L)
1724.55	1724.83	-0.28	469	482	0	(R)MPC(Carbamidomethyl)TEDYLSLILNR(L)
1748.41	1747.71	0.70	184	197	0	(K)YNGVFQEC(Carbamidomethyl)C(Carbamidomethyl)QAEDK(G)
1749.49	1749.66	-0.17	267	280	0	(K)EC(Carbamidomethyl)C(Carbamidomethyl)HGDLLC(Carbamidomethyl)ADDR(A)
1881.55	1880.92	0.63	508	523	0	(R)RPC(Carbamidomethyl)FSALTPDETYVPK(A)
1889.54	1888.93	0.61	169	183	0	(R)HPYFYAPELLYYANK(Y)
1902.43	1901.87	0.56	123	138	1	(R)NEC(Carbamidomethyl)FLSHKDDSPDLPK(L)
1908.60	1907.92	0.68	529	544	0	(K)LFTFHADIC(Carbamidomethyl)TLPDTEK(Q)
1946.49	1946.02	0.48	89	105	1	(K)SLHTLFGDEL(Carbamidomethyl)KVASLR(E)
2045.60	2045.03	0.57	168	183	1	(R)RHPYFYAPELLYYANK(Y)
2090.63	2091.08	-0.45	588	607	1	(K)EAC(Carbamidomethyl)FAVEGPKLVSTQTALA(-)
2247.35	2247.94	-0.59	267	285	1	(K)EC(Carbamidomethyl)C(Carbamidomethyl)HGDLLC(Carbamidomethyl)ADDRADLAK(Y)
2492.82	2492.26	0.56	45	65	0	(K)GLVLIASFQYLQQC(Carbamidomethyl)PFDEHVK(L)

## Peptide fragments observed using LDI MS for BSA digest

m/z submitted	MH+ matched	Delta Da	Start	End	Missed clvg	Sequence
432.18	432.26	-0.08	456	459	0	(K)VGTR(C)
439.18	439.23	-0.05	434	436	0	(R)YTR(K)
508.25	508.25	0.00	229	232	0	(K)FGER(A)
545.35	545.34	0.01	101	105	0	(K)VASLR(E)
658.38	658.32	0.06	118	122	0	(K)QEPER(N)
689.43	689.37	0.05	236	241	0	(K)AWSVAR(L)
706.37	706.36	0.01	223	228	0	(R)C(Carbamidomethyl)ASIQK(F)
712.42	712.37	0.05	29	34	0	(K)SEIAHR(F)
752.39	752.36	0.03	341	346	0	(K)NYQEAK(D)
758.42	758.42	0.00	198	204	0	(K)GAC(Carbamidomethyl)LLPK(I)
789.54	789.47	0.07	257	263	0	(K)LVTDLTK(V)
818.47	818.43	0.04	562	568	0	(K)ATEEQLK(T)
898.45	898.48	-0.03	483	489	0	(R)LC(Carbamidomethyl)VLHEK(T)
922.44	922.49	-0.04	249	256	0	(K)AEFVEVTK(L)
927.46	927.49	-0.03	161	167	0	(K)YLYEIAR(R)
1001.79	1001.59	0.20	233	241	1	(R)ALKAWSVAR(L)
1014.44	1014.62	-0.18	549	557	0	(K)QALVELLK(H)
1138.35	1138.50	-0.15	499	507	0	(K)C(Carbamidomethyl)C(Carbamidomethyl)TESLVNR(R)
1143.38	1142.71	0.66	548	557	1	(K)KQALVELLK(H)
1163.31	1163.63	-0.33	66	75	0	(K)LVNELTEFAK(T)
1166.41	1166.49	-0.08	460	468	0	(R)C(Carbamidomethyl)C(Carbamidomethyl)TKPESER(M)
1193.41	1193.60	-0.19	25	34	1	(R)DTHKSEIAHR(F)
1195.36	1195.59	-0.23	223	232	1	(R)C(Carbamidomethyl)ASIQKFGER(A)
1249.36	1249.62	-0.26	35	44	1	(R)FKDLGEEHFK(G)
1283.40	1283.71	-0.31	361	371	0	(R)HPEYAVSVLLR(L)
1419.36	1419.69	-0.33	89	100	0	(K)SLHTLFGDEL(Carbamidomethyl)K(V)
1439.41	1439.81	-0.40	360	371	1	(R)RHPEYAVSVLLR(L)
1463.34	1463.59	-0.25	76	88	0	(K)TC(Carbamidomethyl)VADESHAGC(Carbamidomethyl)EK(S)
1466.33	1466.71	-0.38	496	507	1	(K)VTKC(Carbamidomethyl)C(Carbamidomethyl)TESLVNR(R)
1479.38	1479.80	-0.41	421	433	0	(K)LGEYGFQNALIVR(Y)
1502.24	1502.61	-0.38	375	386	0	(K)EYEATLEEC(Carbamidomethyl)C(Carbamidomethyl)AK(D)
1533.31	1532.78	0.53	298	309	1	(K)LKEC(Carbamidomethyl)C(Carbamidomethyl)DKPLLEK(S)
1554.40	1554.65	-0.26	387	399	0	(K)DDPHAC(Carbamidomethyl)YSTVFDK(L)
1567.25	1567.74	-0.50	347	359	0	(K)DAFLGSFLYEYSR(R)
1576.26	1576.77	-0.51	139	151	0	(K)LKPDNTLC(Carbamidomethyl)DEFK(A)
1639.43	1639.94	-0.51	437	451	1	(R)KVPQVSTPTLVEVSR(S)
1725.23	1724.83	0.39	469	482	0	(R)MPC(Carbamidomethyl)TEDYLSLILNR(L)
1750.23	1749.66	0.56	267	280	0	(K)EC(Carbamidomethyl)C(Carbamidomethyl)HGDLLC(Carbamidomethyl)ADDR(A)
1881.25	1880.92	0.33	508	523	0	(R)RPC(Carbamidomethyl)FSALTPDETYVPK(A)
1908.16	1907.92	0.24	529	544	0	(K)LFTFHADIC(Carbamidomethyl)TLPDTEK(Q)
2045.30	2045.03	0.28	168	183	1	(R)RHPYFYAPELLYYANK(Y)
2248.18	2247.94	0.24	267	285	1	(K)EC(Carbamidomethyl)C(Carbamidomethyl)HGDLLC(Carbamidomethyl)ADDRADLAK(Y)

## Peptide fragments observed using MALDI MS for Catalase digest

m/z submitted	MH+ matched	Delta Da	Start	End	Missed clvg	Sequence
614.44	614.40	0.04	316	320	0	(K)LVLNR(N)
1119.31	1119.56	-0.25	355	363	0	(R)LFAYPDTHR(H)
1342.66	1342.62	0.04	6	16	1	(R)DPASDQMKHWK(E)
1407.73	1407.63	0.10	481	492	0	(K)NFSDVHPEYGSR(I)
1502.89	1502.80	0.09	157	169	0	(R)DALLFPSFIHSQK(R)
1616.94	1616.82	0.12	238	252	1	(K)TDQGIKNSVEDAAR(L)
1740.85	1740.83	0.02	78	93	0	(K)GAGAFGYFEVTHDITR(Y)
1804.68	1803.92	0.76	366	380	0	(R)LGPNYLQIPVNC(Carbamidomethyl)PYR(A)
1852.41	1851.88	0.53	113	130	1	(R)FSTVAGESGSADTVRDPR(G)
1912.74	1912.94	-0.20	222	237	1	(K)LVNANGEAVYC(Carbamidomethyl)KFHYK(T)
2096.39	2097.08	-0.70	364	380	1	(R)HRLGPNYLQIPVNC(Carbamidomethyl)PYR(A)
2132.55	2132.04	0.51	432	449	1	(R)FNSANDDNVTQVRTFYLK(V)
2189.44	2189.10	0.34	481	499	1	(K)NFSDVHPEYGSRIQALLDK(Y)
2474.22	2474.21	0.01	48	68	1	(R)GPLLVQDVVFTDEMAHFDRER(I)
2518.15	2518.20	-0.05	136	156	0	(K)FYTEDGNWDLVGNNTPIFFIR(D)
2596.79	2597.20	-0.41	211	233	1	(R)HMNGYGSHTFKLVNANGEAVYC(Carbamidomethyl)K(F)
2761.99	2762.48	-0.49	20	47	1	(R)AAQKPDVLTGGGNPVGDKLNSLTVGPR(G)
3125.95	3126.60	-0.66	39	66	1	(K)LNSLTVGPRGPLLVQDVVFTDEMAHFDR(E)
3209.14	3209.51	-0.38	178	203	0	(K)DPDMVWDFWLSLRPESLHQVSFLFSDR(G)

## Peptide fragments observed using LDI MS for Catalase digest

m/z submitted	MH+ matched	Delta Da	Start	End	Missed clvg	Sequence
614.15	614.40	-0.25	316	320	0	(K)LVLNR(N)
656.22	656.41	-0.19	107	112	0	(R)TPIAVR(F)
671.23	671.38	-0.14	445	449	0	(R)TFYLK(V)
750.34	750.39	-0.05	383	388	0	(R)VANYQR(D)
751.36	751.38	-0.02	204	210	0	(R)GIPDGHR(H)
812.46	812.51	-0.05	106	112	1	(K)RTPIAVR(F)
829.38	829.46	-0.08	99	105	0	(K)VFEHIGK(R)
887.54	887.46	0.08	450	456	0	(K)VLNEEQR(K)
889.50	889.49	0.01	128	135	1	(R)DPRGFAVK(F)
956.67	956.55	0.12	39	47	0	(K)LNSLTVGPR(G)
962.60	962.53	0.07	469	476	0	(K)DAQLFIQK(K)
974.60	974.49	0.11	244	252	0	(K)NLSVEDAAR(L)
1014.91	1015.55	-0.64	450	457	1	(K)VLNEEQRK(R)
1046.67	1046.50	0.17	423	431	0	(R)THFSGDVQR(F)
1119.72	1119.56	0.16	355	363	0	(R)LFAYPDTHR(H)
1154.78	1154.60	0.18	459	468	0	(R)LC(Carbamidomethyl)ENIAGHLK(D)
1285.78	1285.62	0.17	253	263	0	(R)LAHEDPDYGLR(D)
1342.75	1342.62	0.13	6	16	1	(R)DPASDQMKHWK(E)
1407.78	1407.63	0.15	481	492	0	(K)NFSDVHPEYGSR(I)
1479.76	1479.68	0.08	432	444	0	(R)FNSANDDNVTQVR(T)
1483.80	1483.70	0.10	113	127	0	(R)FSTVAGESGSADTVR(D)
1502.79	1502.80	-0.01	157	169	0	(R)DALLFPSFIHSQK(R)
1740.75	1740.83	-0.08	78	93	0	(K)GAGAFGYFEVTHDITR(Y)
1804.65	1803.92	0.83	366	380	0	(R)LGPNYLQIPVNC(Carbamidomethyl)PYR(A)
1825.68	1824.95	0.74	20	38	0	(R)AAQKPDVLTGGGNPVGDK(L)
1851.71	1851.88	-0.17	113	130	1	(R)FSTVAGESGSADTVRDPR(G)
2518.32	2518.20	0.12	136	156	0	(K)FYTEDGNWDLVGNNTPIFFIR(D)

## Peptide fragments observed using MALDI MS for Lactoperoxidase digest

m/z submitted	MH+	match	Delta Da	Start	End	Missed clvg	Sequence
554.63	555.26	-0.63	389	392		0	(R)EHNR(L)
568.63	568.33	0.30	76	80		1	(K)HAKGR(T)
1168.34	1168.69	-0.35	624	634		0	(R)VGPLLAC(Carbamidomethyl)LLGR(Q)
1181.24	1181.58	-0.34	363	372		0	(R)VPC(Carbamidomethyl)FLAGDFR(A)
1391.38	1391.84	-0.46	416	427		0	(K)ILGAFIQITFR(D)
1467.26	1467.81	-0.55	545	557		0	(K)IHGFDLAAINLQR(C)
1520.35	1520.75	-0.40	350	362		0	(K)KPSPC(Carbamidomethyl)EFINTTAR(V)
1540.07	1539.73	0.35	645	656		0	(R)FWWENPGVFTEK(Q)
1664.03	1663.83	0.21	280	294		0	(R)AGFVC(Carbamidomethyl)PTPPYQSLAR(E)
1720.07	1719.85	0.22	199	213		0	(K)IVGYLDEEGVLDQNR(S)
1750.14	1750.02	0.11	373	388		0	(R)ASEQILLATAHTLLLR(E)
1806.09	1805.86	0.23	441	455		0	(K)WIPPYQGYNNSVDPRI(I)
2126.65	2127.02	-0.37	603	621		0	(K)TPDNIDIWIGGNAEPMVER(G)
2248.57	2249.10	-0.53	163	181		0	(R)WLP AEYEDGLALPFGWTQR(K)
2376.65	2377.20	-0.55	163	182		1	(R)WLP AEYEDGLALPFGWTQRK(T)
2653.72	2654.33	-0.61	295	319		0	(R)EQINAVTSFLDASLVYGSEPSLASR(L)
2674.53	2674.24	0.30	679	701		0	(K)VPLHAFQANNYPHDFVDC(Carbamidomethyl)STVDK(L)
2992.06	2991.28	0.78	244	267		1	(K)TQC(Carbamidomethyl)EEYC(Carbamidomethyl)IQGDNC(Carbamidomethyl)FPIMFPKNDPK(L)
3072.76	3073.48	-0.72	478	502		0	(R)LDENYQPWGPEALPLHLLFFNTWR(I)
3425.89	3425.76	0.13	100	131		1	(R)RDTTLTNTVDP SLDLTALSWEVGC(Carbamidomethyl)GAPVPLVK(C)

## Peptide fragments observed using LDI MS for Lactoperoxidase digest

m/z submitted	MH+	matched	Delta Da	Start	End	Missed clvg	Sequence
778.92	779.40	-0.49	409	414		0	(K)LYQEAR(K)
818.99	819.45	-0.45	635	640		0	(R)QFQQIR(D)
856.99	857.38	-0.39	274	279		0	(K)C(Carbamidomethyl)MPFFR(A)
869.99	870.48	-0.50	538	544		0	(K)LFQPTHK(I)
941.06	941.51	-0.45	506	514		0	(K)DGGIDPLVR(G)
1012.14	1012.56	-0.43	149	158		1	(R)RSPALGAANR(A)
1029.17	1029.60	-0.43	185	193		1	(R)NGFRVPLAR(E)
1044.12	1044.55	-0.43	702	710		0	(K)LDLSPWASR(E)
1168.19	1168.69	-0.50	624	634		0	(R)VGPLLAC(Carbamidomethyl)LLGR(Q)
1181.09	1181.58	-0.49	363	372		0	(R)VPC(Carbamidomethyl)FLAGDFR(A)
1190.15	1189.58	0.57	87	96		0	(R)NGQVWEESLK(R)
1201.15	1201.64	-0.49	456	465		0	(R)ISNVFTFAFR(F)
1206.14	1206.56	-0.42	140	149		1	(R)TITGDC(Carbamidomethyl)NNRR(S)
1271.03	1271.60	-0.58	270	279		1	(K)TQGKC(Carbamidomethyl)MPFFR(A)
1295.22	1295.77	-0.55	503	514		1	(R)IIKDGGIDPLVR(G)
1320.03	1319.56	0.48	560	570		0	(R)DHGMPGYNSWR(G)
1336.07	1335.71	0.36	571	582		1	(R)GFC(Carbamidomethyl)GLSQPKTLK(G)
1346.06	1345.69	0.38	87	97		1	(R)NGQVWEESLKR(L)
1391.13	1391.84	-0.71	416	427		0	(K)ILGAFIQITFR(D)
1468.10	1467.81	0.30	545	557		0	(K)IHGFDLAAINLQR(C)
1493.05	1492.77	0.28	428	440		0	(R)DYLPIVLGSEMQR(W)
1539.95	1539.73	0.22	645	656		0	(R)FWWENPGVFTEK(Q)
1635.85	1635.69	0.16	558	570		1	(R)C(Carbamidomethyl)RDHGMPGYNSWR(G)
1663.92	1663.83	0.09	280	294		0	(R)AGFVC(Carbamidomethyl)PTPPYQSLAR(E)
1719.88	1719.85	0.02	199	213		0	(K)IVGYLDEEGVLDQNR(S)
1750.02	1750.02	-0.01	373	388		0	(R)ASEQILLATAHTLLLR(E)
1805.98	1805.86	0.12	441	455		0	(K)WIPPYQGYNNSVDPRI(I)
2126.53	2127.02	-0.49	603	621		0	(K)TPDNIDIWIGGNAEPMVER(G)
2248.36	2249.10	-0.74	163	181		0	(R)WLP AEYEDGLALPFGWTQR(K)
2653.82	2654.33	-0.52	295	319		0	(R)EQINAVTSFLDASLVYGSEPSLASR(L)
2675.02	2674.24	0.78	679	701		0	(K)VPLHAFQANNYPHDFVDC(Carbamidomethyl)STVDK(L)