

Figure 1

Hu_1_2_3	1	DAHKSEVAHRFKDLGEEENFKALVLI AFAQY LQQCPFEHVKLVNEVTEFAKTCVADES AE
Hu_1_3	1	DAHKSEVAHRFKDLGEEENFKALVLI AFAQY LQQCPFEHVKLVNEVTEFAKTCVADES AE
Hu_2_3	1	-----
Mac_mul	1	DTHKSEVAHRFKDLGEEHFKGLVLI AFSQYLQQCPFEHVKLVNEVTEFAKTCVADES AE
Rat	1	EAHKSEIAHRFKDLGEQHFKGLVLI AFSQYLQKCPFEHVKLVNEVTEFAKTCVADE NAE
Mouse	1	EAHKSEIAHRYNDLGEQHFKGLVLI AFSQYLQKCSYDEHAKLVNEVTEFAKTCVADES AA
Hu_1_2_3	61	NCDKSLHTLFGDKLCTVATLRETYGEMADCCAKQEPERNECFLOHKDDNP NLPRLVRPEV
Hu_1_3	61	NCDKSLHTLFGDKLCTVATLRETYGEMADCCAKQEPERNECFLOHKDDNP NLPRLVRPEV
Hu_2_3	1	-----
Mac_mul	61	NCDKSLHTLFGDKLCTVATLRETYGEMADCCAKQEPERNECFLOHKDDNP NLPPLVRPEV
Rat	61	NCDKSLHTLFGDKLCAIPKLRNYGELADCCAKQEPERNECFLOHKDDNP NLPFQRPEA
Mouse	61	NCDKSLHTLFGDKLCAIPNLRENYGELADCCAKQEPERNECFLOHKDDNP SLPPFERPEA
Hu_1_2_3	121	DVMCTAFHDNEETFLKKYLYEIAARRHPYFYAPELLFFAKRYKAAFT ECCQAADKAACLLP
Hu_1_3	121	DVMCTAFHDNEETFLKKYLYEIAARRHPYFYAPELLFFAKRYKAAFT ECCQAADKAACLLP
Hu_2_3	1	-----
Mac_mul	121	DVMCTAFHDNEATFLKKYLYEVARRHPYFYAPELLFFAARYKAAFAE CCQAADKAACLLP
Rat	121	EAMCTSFQENPTSFILGHYLIHEVARRHPYFYAPELLFYAEKYNEVIT QCCTESDKAACLT P
Mouse	121	EAMCTSFKENPTTFILGHYLIHEVARRHPYFYAPELLFYAEQYNEILT QCCABADKESCLTP
Hu_1_2_3	181	KLDEL RDEGKASSAKQRLKASLQKFGERAFKAWAVARLSQRFPKAEFAEVSKLVTDLT K
Hu_1_3	181	KLDEL RDEGKASSA-----
Hu_2_3	1	---DEL RDEGKASSAKQRLKASLQKFGERAFKAWAVARLSQRFPKAEFAEVSKLVTDLT K
Mac_mul	181	KLDEL RDEGKASSAKQRLKASLQKFGERAFKAWAVARLSQRFPKAEFAEVSKLVTDLT K
Rat	181	KLDAYKEKALVAAVRQRMKCSSMQKFGERAFKAWAVARLSQRFPMAEFAEIKLATD LTK
Mouse	181	KLDGVKEKALVSSVRQRMKCSSMQKFGERAFKAWAVARLSQTFPNAIFAEIKLATD LTK
Hu_1_2_3	241	VHTECCHGDLLECADDRADLAKYICENQDSISSKLKECCDKP LLEKSHCIAEVENDEMPA
Hu_1_3	195	-----
Hu_2_3	59	VHTECCHGDLLECADDRADLAKYICENQDSISSKLKECCDKP LLEKSHCIAEVENDEMPA
Mac_mul	241	VHTECCHGDLLECADDRADLAKYICENQDSISSKLKECCDKP LLEKSHCIAEVENDEMPA
Rat	241	VNKECCHGDLLECADDRADLAKYICENQATISSKLQACCDKPL LKSOCLAEIHDNTPA
Mouse	241	VNKECCHGDLLECADDRADLAKYICENQATISSKLQTCCKDPL LKKAHCLSEVEHDTMPA
Hu_1_2_3	301	DLPSLAADFVESKDVCKNYAEAKDVFLGMFLYEYARRHPDYSV LLLRLAKTYET TLEKC
Hu_1_3	195	-----
Hu_2_3	119	DLPSLAADFVESKDVCKNYAEAKDVFLGMFLYEYARRHPDYSV LLLRLAKTYET TLEKC
Mac_mul	301	DLPSLAADFVESKDVCKNYAEAKDVFLGMFLYEYARRHPDYSV LLLRLAKTYEATLEKC
Rat	301	DLPSLAADFVEDKEVCKNYAEAKDVFLGTFLYEYSRRHPDYSV LLLRLAKTYEATLEKC
Mouse	301	DLPSLAADFVEDQEVCKNYAEAKDVFLGTFLYEYSRRHPDYSV LLLRLAKTYEATLEKC
Hu_1_2_3	361	CAAADPHECYAKVFDEFKPLVEEPQNLKONCELFEQLGEYKFQNAL LVRYTKKVPQVST
Hu_1_3	195	-----VEEPQNLKONCELFEQLGEYKFQNAL LVRYTKKVPQVST
Hu_2_3	179	CAAADPHECYAKVFDEFKPLVEEPQNLKONCELFEQLGEYKFQNAL LVRYTKKVPQVST
Mac_mul	361	CAAADPHECYAKVFDEFQPLVEEPQNLKONCELFEQLGEYKFQNAL LVRYTKKVPQVST
Rat	361	CAEGDPACYCTVLAEFQPLVEEPKNLKTNCELFEQLGEYKFQNAL LVRYTKKVPQVST
Mouse	361	CAEANPPACYCTVLAEFQPLVEEPKNLKTNCELFEQLGEYKFQNAL LVRYTKKVPQVST

Figure 1 (continued)

Hu_1_2_3	421	PTLVEVSRNLGKVGSKCKKHPEAKRMPCAEDYLSVVLNQ	LCVLHEKTPVSRVTKCCTES	
Hu_1_3	235	PTLVEVSRNLGKVGSKCKKHPEAKRMPCAEDYLSVVLNQ	LCVLHEKTPVSRVTKCCTES	
Hu_2_3	239	PTLVEVSRNLGKVGSKCKKHPEAKRMPCAEDYLSVVLNQ	LCVLHEKTPVSRVTKCCTES	
Mac_mul	421	PTLVEVSRNLGKVGAKCKKLPEAKRMPCAEDYLSVVLNRL	LCVLHEKTPVSRVTKCCTES	
Rat	421	PTLVEAARNLGRVGTICKCTLPEAQRI	PCVEDYLSALNRLCVLHEKTPVSRVTKCCSGS	
Mouse	421	PTLVEAARNLGRVGTICKCTLPE	DQRI	PCVEDYLSALNRLCVLHEKTPVSRVTKCCSGS
↑				
500				
Hu_1_2_3	481	LVNRRPCFSALEVDETYVPKEFNAETFTFHADICTLSEKE	QIKKQTALVELVKHKPKAT	
Hu_1_3	295	LVNRRPCFSALEVDETYVPKEFNAETFTFHADICTLSEKE	QIKKQTALVELVKHKPKAT	
Hu_2_3	299	LVNRRPCFSALEVDETYVPKEFNAETFTFHADICTLSEKE	QIKKQTALVELVKHKPKAT	
Mac_mul	481	LVNRRPCFSALEIDEAYVPKAFNAETFTFHADICTLSEKE	QIKKQTALVELVKHKPKAT	
Rat	481	LVERRPCFSALTIVDETYVPKEFKAEFTFTFHS	SDICTLPEKEQIKKQTALVELVKHKPKAT	
Mouse	481	LVERRPCFSALTIVDETYVPKEFKAEFTFTFHS	SDICTLPEKEQIKKQTALVELVKHKPKAT	
↑				
500				
Hu_1_2_3	541	KEQLKAVMDDFAAFVEKCKADDKETCFAEEGKKLVAASQAALGL		
Hu_1_3	355	KEQLKAVMDDFAAFVEKCKADDKETCFAEEGKKLVAASQAALGL		
Hu_2_3	359	KEQLKAVMDDFAAFVEKCKADDKETCFAEEGKKLVAASQAALGL		
Mac_mul	541	KEQLKGVMDNF	AAAFVEKCKADDKEACFAEEGPKFVAASQAALA-	
Rat	541	EDQLKTVMGDFAQFV	DKCKAADKINCFATEGPNLVARSKEALA-	
Mouse	541	AEQLKTVMDDF	AAQFV	DKCKAADKTCFSTEGPNLVTRCKDALA-
↑				
550				
↑				
573				

Figure 2

Human	1	-----DA-HKSEIAHREKDLGEENFKA
Mouse	1	-----A-HKSEIAHRENDLGEQHFKG
Sheep	1	-----DT-HKSEIAHRENDLGEENFOG
Rabbit	1	-----A-HKSEIAHRENDLGEHFTIG
Goat	1	-----DT-HKSEIAHRENDLGEENFOG
Chimp	1	MNESSCCSTSLPAFGVSVDSGHSSSSAYS SRGV--FRRDA-HKSEIAHREKDLGEENFKA
Macaque	1	-----MKWVTFISLLFLFSSAYS SRGV--FRRDT-HKSEIAHREKDLGEEHFKG
Hamster	1	-----MKWVTFISLLFLFSSAYS SRGV--FRRDA-HKSEIAHREKDLGEQHFKG
Guinea_Pig	1	-----MKWVTFISLLFLFSSVYSRGV--FRRDA-HKSEIAHRENDLGEHFKG
Rat	1	-----MKWVTFISLLFLFSSAYS SRGV--FRRDA-HKSEIAHREKDLGEQHFKG
Cow	1	-----MKWVTFISLLFLFSSAYS SRGV--FRRDT-HKSEIAHREKDLGEEHFKG
Horse	1	-----MKWVTFISLLFLFSSAYS SRGV--LRRDT-HKSEIAHRENDLGEHFKG
Donkey	1	-----MKWVTFISLLFLFSSAYS SRGV--LRRDT-HKSEIAHRENDLGEHFKG
Dog	1	-----MKWVTFISLLFLFSSAYS SRGV--VRRDA-YKSEIAHRENDLGEHFTIG
Chicken	1	-----MKWVTFISLLFLFSSATSRLQRFARDAEHKSEIAHRENDLKEETFKA
Pig	1	-----MKWVTFISLLFLFSSAYS SRGV--FRRDT-YKSEIAHREKDLGEQYFKG

↑
(D1-Start)

Human	22	LVLIAFAQYLLQCCPFDEHVKLKLVNEVTEFAKTCVADESAENCCKSLHTLFGDKLCTVATLR
Mouse	22	LVLIAFSQYLLQCKCSYDEHAKLVKEVTFAKTCVADESAENCCKSLHTLFGDKLCAIPNLR
Sheep	22	LVLIAFSQYLLQCCPFDEHVKLKLVKEITEFAKTCVADESHAGCDKSLHTLFGDELCKVATLR
Rabbit	22	LVLITFSQYLLQCKPYEEHAKLVKEVTILAKACVADESAENCCKSLHDIFGDKLCAIPSLR
Goat	22	LVLIAFSQYLLQCCPFDEHVKLKLVKEITEFAKTCVADESHAGCDKSLHTLFGDELCKVATLR
Chimp	58	LVLVAFQYLLQCCPFDEHVKLKLVNEVTEFAKTCVADESAENCCKSLHTLFGDKLCTVATLR
Macaque	46	LVLVAFSQYLLQCCPFEEHVKLKLVNEVTEFAKTCVADESAENCCKSLHTLFGDKLCTVATLR
Hamster	46	LVLIAFSQYLLQCKPYEEHVKLKLVNEVTFAKTCVADESAENCCKSLHTLFGDKLCAIPTLR
Guinea_Pig	46	LVLITLSQHLQKSPFEEHVKLKLVNEVTFAKACVADESAQNCCKATLFGDKLCAIPSLR
Rat	46	LVLIAFSQYLLQCKPYEEHKLKLVKEVTFAKTCVADENAENCCKSLHTLFGDKLCAIPKLR
Cow	46	LVLIAFSQYLLQCCPFDEHVKLKLVNEITEFAKTCVADESHAGCKSLHTLFGDELCKVASLR
Horse	46	LVLVAFSQYLLQCCPFDEHVKLKLVNEVTEFAKKCAADESAENCCKSLHTLFGDKLCTVATLR
Donkey	46	LVLVAFSQYLLQCCPFDEHVKLKLVNEVTEFAKKCAADESAENCCKSLHTLFGDKLCTVATLR
Dog	46	LVLVAFSQYLLQCCPFDEHVKLKLVNEVTEFAKACAAESCANCKSLHTLFGDKLCTVASLR
Chicken	49	VAMITFAQYLLQRCSEGLSKLVKLVVLAQKCVANEDAPECKPLPSITLDEICQVEKLR
Pig	46	LVLIAFSQHLQCCPYEEHVKLKLVREVTEFAKTCVADESAENCCKSLHTLFGDKLCAIPSLR

Human	82	ETYGEMADCCAKQEPERNECFLOHKDDNPNI--PRLVRPEVDVCTAFHNEETFLKKYLY
Mouse	82	ENYGEIADCCITKQEPERNECFLOHKDDNPNI--PFFERPEAACTSEFNPTTFNGHYLH
Sheep	82	ETYGDMADCCEKQEPERNECFLOHKDDSPDL--PKL--KPEPDTCAEFYADEKKFWGKYLY
Rabbit	82	ETYGDMADCCEKQEPERNECFLOHKDDKPD--PKL--KPEPDTCAEFYADEKKFWGKYLY
Goat	82	ETYGDMADCCEKQEPERNECFLOHKDDSPDL--PKL--KPEPDTCAEFYADEKKFWGKYLY
Chimp	118	EKYGEMADCCAKQEPERNECFLOHKDDNPNI--PRLVRPEVDVCTAFHNEGTFLKKYLY
Macaque	106	ETYGEMADCCAKQEPERNECFLOHKDDNPNI--PRLVRPEVDVCTAFHNEATFLKKYLY
Hamster	106	DSYGEIADCCAKQEPERNECFLOHKDDHPNI--PFFVRPLAATSEFNNAVTFNGHYLH
Guinea_Pig	106	ETYGELADCCAKEDPVRVECFLOHKDDNPNI--PFFERPEAACTSEFNNDRTFNGHYLY
Rat	106	ENYGEIADCCAKQEPERNECFLOHKDDNPNI--PFFORPEAACTSEFNNTSFLNGHYLH
Cow	106	ETYGDMADCCEKQEPERNECFLOSHKDDSPDL--PKL--KPEPNTACDEFYADEKKFWGKYLY
Horse	106	ATYGEIADCCCEKQEPERNECFLOTHKDDHPNI--PKL--KPEPDAAQCAAFQDPDKFLGKYLY
Donkey	106	ATYGEIADCCCEKQEPERNECFLOTHKDDHPNI--PKL--KPEPDAAQCAAFQDPDKFLGKYLY
Dog	106	DKYGDMAADCCEKQEPERNECFLOHKDDNPGF--PPLVAPDPDAQCAAFQNEQFLGKYLY
Chicken	109	DSYGAMADCCSKADPERNECFLOSKFVS--PDFVQPYQRPASDV--QCF--QDNRVSLGHETTY
Pig	106	EHYGDIADCCCEKEEPERNECFLOHKDDNPDI--PKL--KPEPVAACAFQDEQKFWGKYLY

Figure 2 (continued)

Human	141	ETARRHPYFYAPELLLEFAKRYKAAFTTECCQAADKAACLPKLDELREKASSAKQRLKC
Mouse	141	EVARRHPYFYAPELLLYAEQYNEILTOCCAEADKESCLTPKLDGVREKALVSSVQRMKC
Sheep	140	EVARRHPYFYAPELLLYANKYNGVFQEECCQAEDKQACLPKLDAREKVLASSAQRLKC
Rabbit	141	EVARRHPYFYAPELLLYAOKYKAILTECCAEADKQACLPKLDALREKSLISAAQERLKC
Goat	140	EVARRHPYFYAPELLLYANKYNGVFQEECCQAEDKQACLPKLDAREKVLASSAQRLKC
Chimp	177	EVARRHPYFYAPELLLEFAERYKAAFTTECCQAADKAACLPKLDELREKASSAKQRLKC
Macaque	165	EVARRHPYFYAPELLLEFAARYKAAFAECCQAADKAACLPKLDELREKASSAKQRLKC
Hamster	165	EVARRHPYFYAPELLLYAEKYSALMTECCGEADKAACLPKLDALREKALASSVNQRLKC
Guinea_Pig	165	EVARRHPYFYAPELLLYAEKYKNAITECCAEADKAACLPKLDALREKALVSSAQRLKC
Rat	165	EVARRHPYFYAPELLLYAEKYNEVLTQCCTESDKAACLPKLDALREKALVAAVQRMKC
Cow	164	ETARRHPYFYAPELLLYANKYNGVFQEECCQAEDKQACLPKLDAREKVLASSAQRLKC
Horse	164	EVARRHPYFYAPELLLEHAEEYKADFTTECCPADDKLACLPKLDALREKILLSSAKERLKC
Donkey	164	EVARRHPYFYAPELLLEHAEEYKADFTTECCPADDKACLPKLDALREKILLSSAKERLKC
Dog	165	ETARRHPYFYAPELLLYAQQYKQVFAECCQAADKAACLPKLDALREKVLASSAKERLKC
Chicken	169	SVARRHPYFYAPELLLYAPALISFAVDTEHALQSCCKESLVACLDTKELVREKALVSVKQYFC
Pig	164	ETARRHPYFYAPELLLYAIIYKDFSECCQAADKAACLPKLDALREKVLASSAQRLKC

(D2-Start)

(D1-End)

Human	201	ASIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHTECCHGDLLECADDRADL
Mouse	201	SSMQKFGERAFKAWAVARLSQTFPNADFAELTKLATDLDLTKVNKECCCHGDLLECADDRADL
Sheep	200	ASIQKFGERAFKAWAVARLSQKFPKADFTDVIKIVTDLTKVHKECCCHGDLLECADDRADL
Rabbit	201	ASIQKFGERAFKAWAVARLSQKFPKADFTDVIKIVTDLTKVHKECCCHGDLLECADDRADL
Goat	200	ASIQKFGERAFKAWAVARLSQKFPKADFTDVIKIVTDLTKVHKECCCHGDLLECADDRADL
Chimp	237	ASIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHTECCHGDLLECADDRADL
Macaque	225	ASIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHTECCHGDLLECADDRADL
Hamster	225	SSIQKFGERAFKAWAVARLSQKFPKADFAELTKLATDLDLTKVNKECCCHGDLLECADDRADL
Guinea_Pig	225	ASIQKFGERAFKAWAVARLSQKFPKADFAELSTIVTSLTKVTECCHGDLLECADDRADL
Rat	225	SSMQKFGERAFKAWAVARLSQTFPNADFAELTKLATDLDLTKVNKECCCHGDLLECADDRADL
Cow	224	ASIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHKECCCHGDLLECADDRADL
Horse	224	SSIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHKECCCHGDLLECADDRADL
Donkey	224	SSIQKFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHKECCCHGDLLECADDRADL
Dog	225	ASIQKFGERAFKAWAVARLSQKFPKADFAELSKIVTDLTKVHKECCCHGDLLECADDRADL
Chicken	229	GILKQFGERAFKAWAVARLSQKFPKADFAEVSKIVTDLTKVHKECCCHGDLLECADDRADL
Pig	224	ASIQKFGERAFKAWAVARLSQKFPKADFTDVIKIVTDLTKVHKECCCHGDLLECADDRADL

Human	261	AKYICENQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVESKIVCKNYA
Mouse	261	AKYMCENQATISSKLQTCCKDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYA
Sheep	260	AKYICDHQDASSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYQ
Rabbit	261	AKYMCHEHQTISSHLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYE
Goat	260	AKYICDHQDASSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYQ
Chimp	297	AKYICENQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVESKIVCKNYA
Macaque	285	AKYMCENQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYA
Hamster	285	AKYMCENQASISSKLQACCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYA
Guinea_Pig	285	AKYMCHEHQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYA
Rat	285	AKYMCENQATISSKLQACCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYA
Cow	284	AKYICDHQDASSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYQ
Horse	284	AKYICDHQDSISSGLKACCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYK
Donkey	284	TKYICDHQDSISSGLKACCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYK
Dog	285	AKYMCENQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYQ
Chicken	289	MSNLCSQDVFSGLKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYE
Pig	284	AKYICENQDSISSKLKECCDKPLLEKSHCIAEVENDENPADLPSSLAADFVEDKEVCKNYK

Figure 2 (continued)

Human	321	EAKDVFLGMFLYEYARRHPDYSVVLRLRLAKTYETTLKCCAAADPHECYAKVFDEFKPL
Mouse	321	EAKDVFLGTFLYEYSRRHPDYSVSLRLRLAKKYEATLEKCCAEANPPACYITVLADEFOP
Sheep	320	EAKDVFLGSFLYEYSRRHPHYAVSVLLRLAKKYEATLEDCCAKEDPHACYATVFDKCLKHL
Rabbit	321	EAKDIFLGKFLYEYSRRHPDYSVVLRLRLAKYEATLEKCCCATDDPHACYAKVILDEFOP
Goat	320	EAKDVFLGSFLYEYSRRHPHYAVSVLLRLAKKYEATLEDCCAKEDPHACYATVFDKCLKHL
Chimp	357	EAKDVFLGMFLYEYARRHPDYSVVLRLRLAKTYETTLKCCAAADPHECYAKVFDEFKPL
Macaque	345	EAKDVFLGMFLYEYARRHPDYSVMLRLRLAKKYEATLEKCCAAADPHECYAKVFDEFOP
Hamster	345	EAKDVFLGTFLYEYARRHPDYSVALRLRLAKKYEATLEKCCAEADPSACYIKVILDEFOP
Guinea_Pig	345	EAKDVFLGTFLYEYSRRHPHYSTGVLRLAKKYEATLEKCCAEADPPACYITVLADEFOP
Rat	345	EAKDVFLGTFLYEYSRRHPDYSVSLRLRLAKKYEATLEKCCAEADPPACYITVLADEFOP
Cow	344	EAKDAFLGSFLYEYSRRHPHYAVSVLLRLAKKYEATLEDCCAKDDPHACYSTVFDKCLKHL
Horse	344	DAKDVFLGTFLYEYSRRHPDYSVSLRLRLAKTYEATLEKCCAEADPPACYITVFDQFTPL
Donkey	344	DAKDVFLGTFLYEYSRRHPDYSVSLRLRLAKTYEATLEKCCAEADPPACYATVFDQFTPL
Dog	345	EAKDVFLGTFLYEYARRHPHYSVSLRLRLAKKYEATLEKCCATDDPPTCYAKVILDEFKPL
Chicken	349	ACHDAFMAEFVYEYSRRHPPEFSIQILIRLAKGYESLLEKCCCKTDNPAECYANAQSIQIQH
Pig	344	EAKHVFLGTFLYEYSRRHPDYSVSLRLRLAKTYEATLEDCCAKEDPPACYATVFDKFOPL

Human	381	VEEPQNLIKQNCLEFEQLGEYKQFQNALLVRYTKKVPQVSTPTLVEISRNLGKVGSKCKKH
Mouse	381	VEEPKNLVKTNCILYEKLGEYGFQNALLVRYTQKAPQVSTPTLVEAARNLGKVGSKCKCTL
Sheep	380	VDEPQNLIKKNCLEFEKHGEYGFQNALLVRYTKAPQVSTPTLVEISRSLGKVGSKCKAK
Rabbit	381	VDEPKNLVKQNCLEFEQLGYNFQNALLVRYTKKVPQVSTPTLVEISRSLGKVGSKCKKH
Goat	380	VDEPQNLIKKNCLEFEKHGEYGFQNALLVRYTKAPQVSTPTLVEISRSLGKVGSKCKAK
Chimp	417	VEEPQNLIKQNCLEFEQLGEYKQFQNALLVRYTKKVPQVSTPTLVEISRNLGKVGSKCKKH
Macaque	405	VEEPQNLVKNQNCLEFEQLGEYKQFQNALLVRYTKKVPQVSTPTLVEISRNLGKVGAKCKKL
Hamster	405	VEEPKNLVKANQNCLEFEKLGEYGFQNALLVRYTQKAPQVSTPTLVEAARNLGKVGSKCKVL
Guinea_Pig	405	IDEPKKLVQQNCLEFEKLGEYGFQNALLVRYTQKAPQVSTPTLVEYARKLGKVGSKCKSL
Rat	405	VEEPKNLVKTNCLEFEKLGEYGFQNALLVRYTQKAPQVSTPTLVEAARNLGKVGSKCKCTL
Cow	404	VDEPQNLIKQNCLEFEKLGEYGFQNALLVRYTKVPQVSTPTLVEISRSLGKVGSKCKTK
Horse	404	VEEPKSLVKKNCLEFEVGEYDFQNALLVRYTKKAPQVSTPTLVEISRTLKGKVGSKCKKL
Donkey	404	VEEPKSLVKKNCLEFEVGEYDFQNALLVRYTKKAPQVSTPTLVEISRTLKGKVGSKCKKL
Dog	405	VDEPQNLVKTNCLEFEKLGEYGFQNALLVRYTKKAPQVSTPTLVEISRLKGKVGSKCKK
Chicken	409	IKETQDVKTNCILLDHGHGADFLKSLIRYTKKMPQVPTDILLDTGKTTITGKCCQL
Pig	404	VDEPKNLVKQNCLEFEKLGEYGFQNALLVRYTKKVPQVSTPTLVEISARKLGKVGSKCKR

↑ ↑
(D3-Start) (D2-End)

Human	441	PEAKRMPCAEDYLSVVLNQLCVLHEKTPVSEVTKCCTESLVNRRPCFSALEVDETYVPK
Mouse	441	PEDQRLPCVEDYLSAILNRLCVLHEKTPVSEHVTKCCSGSLVERRRPCFSALTVDETYVPK
Sheep	440	PESERMPCTEDYLSAILNRLCVLHEKTPVSEKVTCKCTESLVNRRPCFSDLTVDETYVPK
Rabbit	441	PEAERLPCVEDYLSVVLNRLCVLHEKTPVSEKVTCKCGESLVDRRPCFSALGPDETYVPK
Goat	440	PESERMPCTEDYLSAILNRLCVLHEKTPVSEKVTCKCTESLVNRRPCFSDLTVDETYVPK
Chimp	477	PEAKRMPCAEDYLSVVLNQLCVLHEKTPVSEVTKCCTESLVNRRPCFSALEVDETYVPK
Macaque	465	PEAKRMPCAEDYLSVVLNRLCVLHEKTPVSEKVTCKCTESLVNRRPCFSALEVDETYVPK
Hamster	465	PEAQRLPCVEDYLSAILNRLCVLHEKTPVSEQVTKCCTGSLVERRRPCFSALTVDETYVPK
Guinea_Pig	465	PETERLSCTENYLALILNRLCVLHEKTPVSEVTKCCTESLVNRRPCFSALHVDETYVPK
Rat	465	PEAQRLPCVEDYLSAILNRLCVLHEKTPVSEKVTCKCGSLVERRRPCFSALTVDETYVPK
Cow	464	PESERMPCTEDYLSAILNRLCVLHEKTPVSEKVTCKCTESLVNRRPCFSALTPDETYVPK
Horse	464	PESERLPCSENHLALALNRLCVLHEKTPVSEKVTCKCTSLAERRPCFSALEVDGYVPK
Donkey	464	PESERLPCSENHLALALNRLCVLHEKTPVSEKVTCKCTSLAERRPCFSALEVDGYVPK
Dog	465	PESERMSCAEDYLSVVLNRLCVLHEKTPVSEVTKCCGESLVNRRPCFSLVDETYVPK
Chicken	469	GEDRRMACSEGYLSVYTHDTCRKQETTPINNVSQCCQLYANRRPCFALGVDTKYVPP
Pig	464	PEEERLSCAEDYLSVVLNRLCVLHEKTPVSEKVTCKCTESLVNRRPCFSALTPDETYVPK

Figure 2 (continued)

Human	501	EFNAETFTFHADICTLSEKEQIKKQTALVELVKHKPKATKEQLKAVMDFFAFVEKCK
Mouse	501	EFKAETFTFHSIDICTLPEKEKQIKKQTALAEVLVKHKPKATAEQLKTVMDFFAQFIDTCK
Sheep	500	PFDEKFFTFHADICTLPTEKQIKKQTALVELVKHKPKATDEQLKTVMENFVAFVDKCCA
Rabbit	501	EFNAETFTFHADICTLPETEFKIKKQTALVELVKHKPHATNQLKTVMGFTALDKCCS
Goat	500	PFDCESFTFHADICTLPTEKQIKKQTALVELVKHKPKATDEQLKTVMENFVAFVDKCCA
Chimp	537	EFNAETFTFHADICTLSEKEQIKKQTALVELVKHKPKATKEQLKAVMDFFAFVEKCK
Macaque	525	AFNAETFTFHADMCTLSEKEQVKKQTALVELVKHKPKATKEQLKGVMDNFAFVEKCK
Hamster	525	EFKAETFTFHADICSLPEKEKQKKQAALVELVKHKPKATGPQLTVMGFTAFIDKCK
Guinea_Pig	525	PFHADSFTFHADICTLPEKEKQKKQMALVELVKHKPKASHEQNKTVMGFFAFIDKCCD
Rat	525	EFKAETFTFHSIDICTLPTEKQIKKQTALAEVLVKHKPKATDEQLKTVMGFFAQFVDKCK
Cow	524	AFDEKLFTFHADICTLPTEKQIKKQTALVELVKHKPKATDEQLKTVMENFVAFVDKCCA
Horse	524	EFKAETFTFHADICTLPEDEKQIKKQSALAEVLVKHKPKATKEQLKTVMGNTSAFVAKCCG
Donkey	524	EFKAETFTFHADICTLPEDEKQIKKQSALAEVLVKHKPKATKEQLKTVMGNTSAFVAKCCG
Dog	525	EFNAETFTFHADICTLPEAEKQVKKQTALVELVKHKPKATDEQLKTVMGFFAFVEKCCA
Chicken	529	PFNPMFSFDEKLCAPAEEREVGQMKLLINLIKRPQMTDEQIKTADGFTAMVDKCK
Pig	524	EFVEGTFTFHADICTLPEDEKQIKKQTALVELVKHKPHATDEQLKTVMGNTSAFVOKCCA

Human	561	ADDKETCF AE EGKKLV AASQAALCL--
Mouse	561	AADKLTCTFSTEGPNLVTRCKDALA---
Sheep	560	ADDKECCFVLEGPKLVASTQAALA---
Rabbit	561	AEDKEACFAVEGPKLVESKATLCL---
Goat	560	ADDKECCFLLEGPKLVASTQAALA---
Chimp	597	ADDKETCF AE EGKKLV AASQAALCL--
Macaque	585	ADDKEACFAEEGPKFVAASQAALA---
Hamster	585	AEDKEACFSEGGPKLVASSQAALA---
Guinea_Pig	585	ADNKEACFTEDGPKLVAKQATLA---
Rat	585	AADKDNCFATEGPNLVARSKEALA---
Cow	584	ADDKEACFAVEGPKLVVSQTALA---
Horse	584	REDKEACFAEEGPKLVASSQLALA---
Donkey	584	AEDKEACFAEEGPKLVASSQLALA---
Dog	585	AENKECCFSEEGPKLVAAQAALV---
Chicken	589	QSDINTCFGEEGANLVQSRATLGIGA
Pig	584	APDHEACFAVEGPKFVIEIRGILA---

↑
(D3-End)

Figure 3

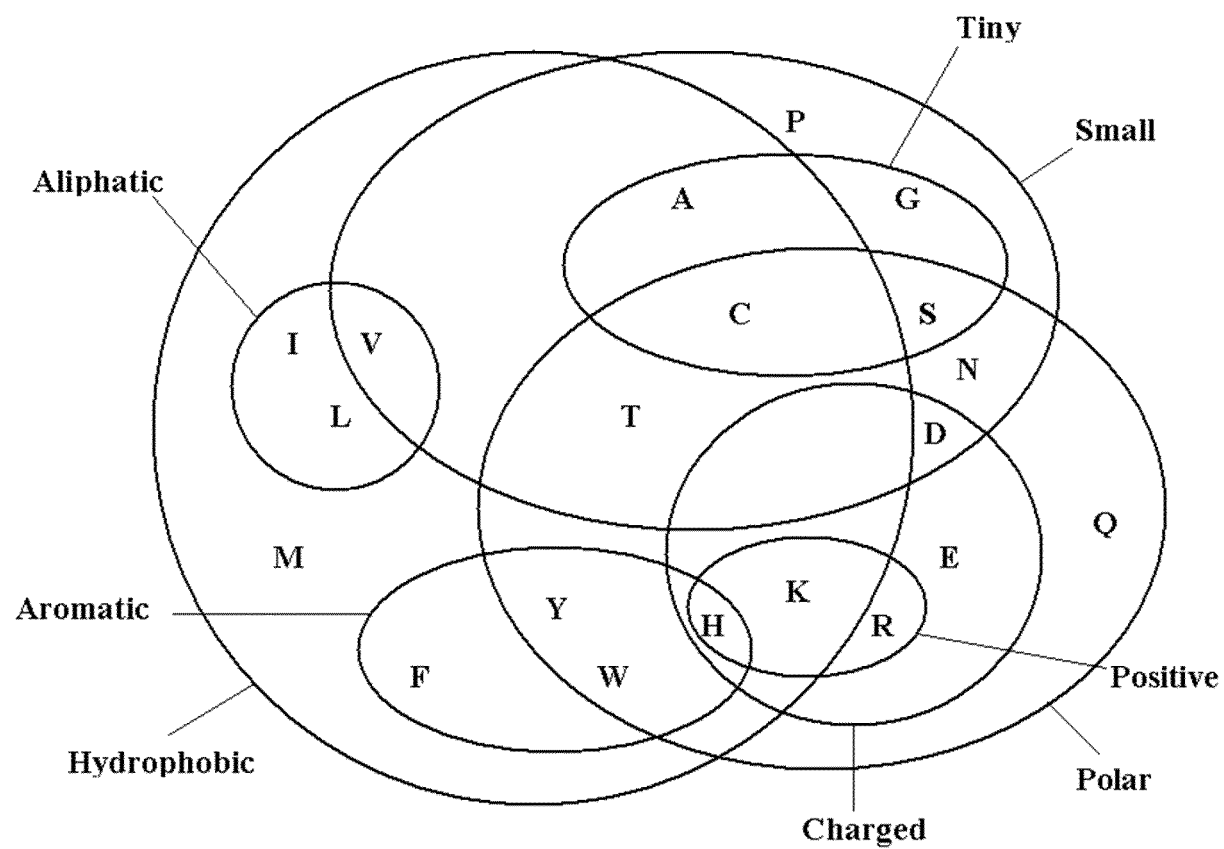
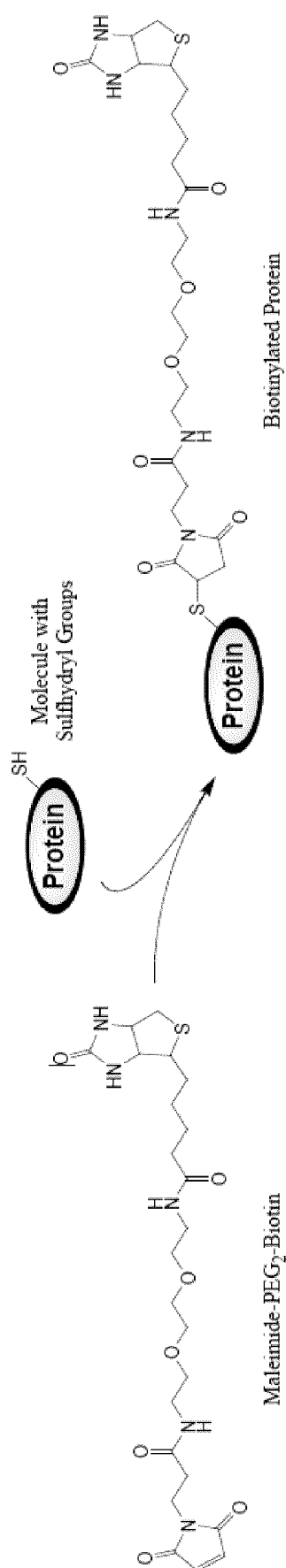


Figure 4

A



B

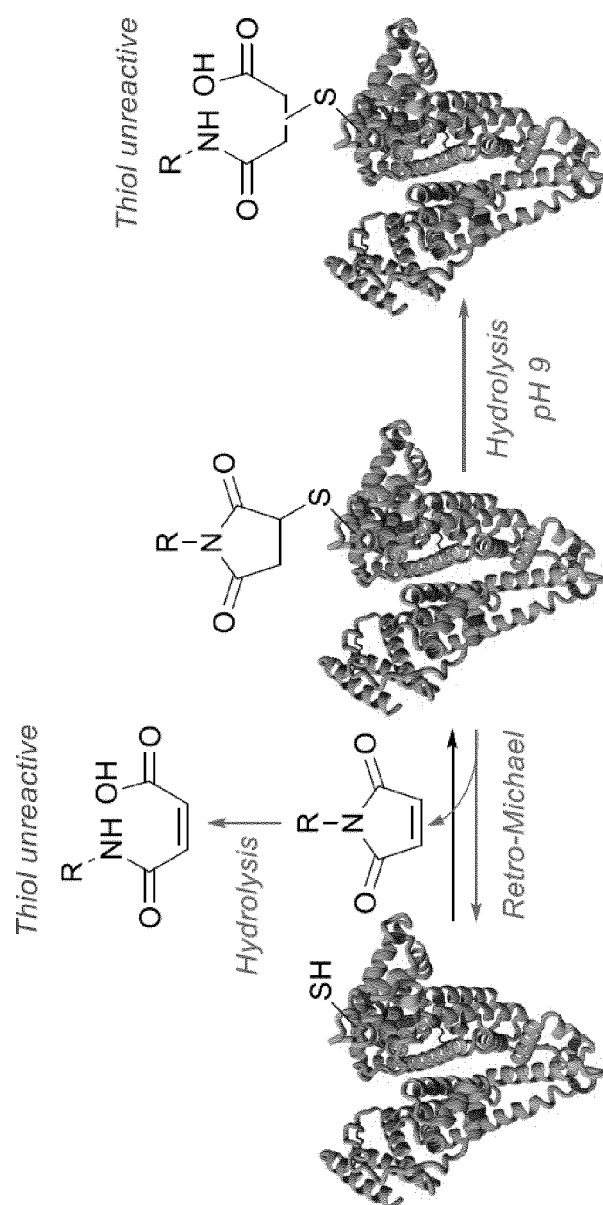


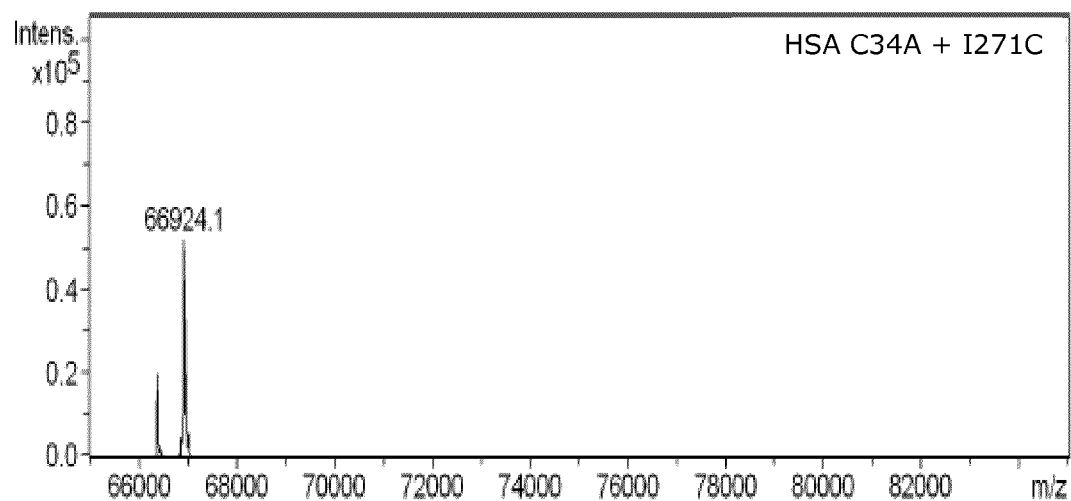
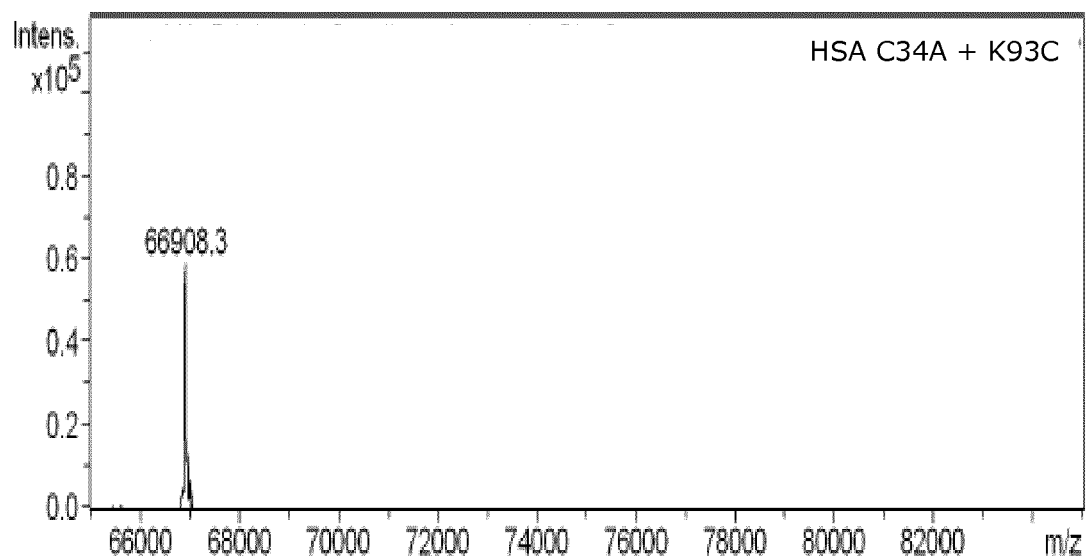
Figure 5**A****B**

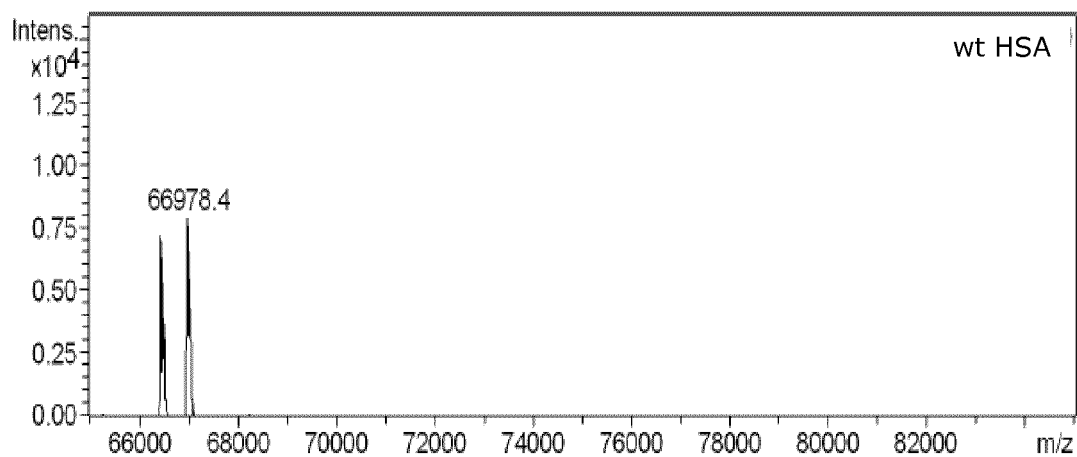
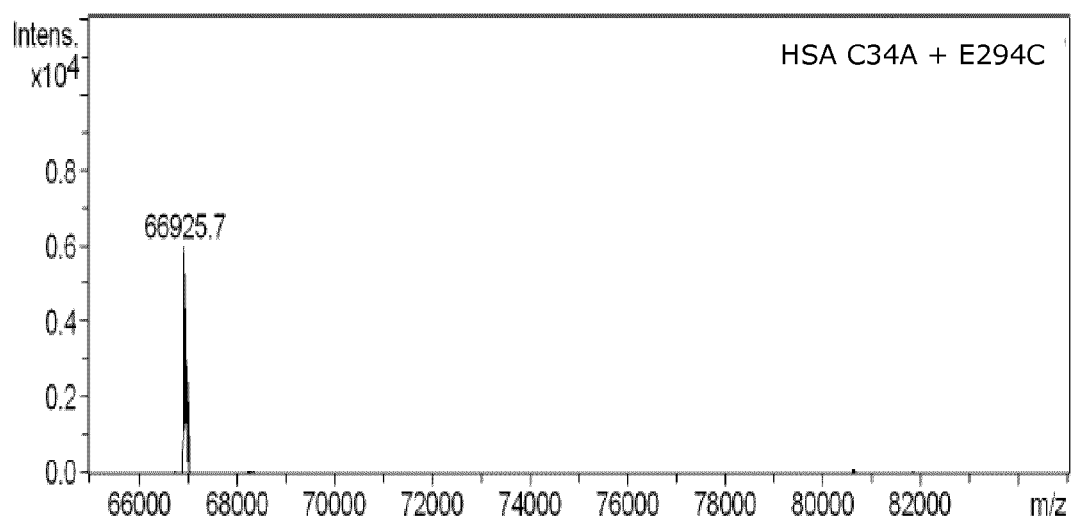
Figure 6**A****B**

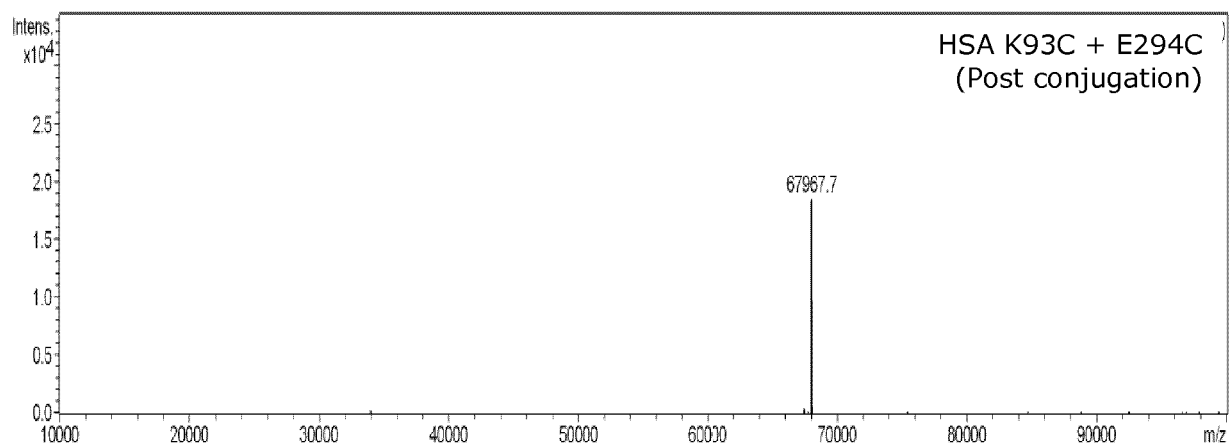
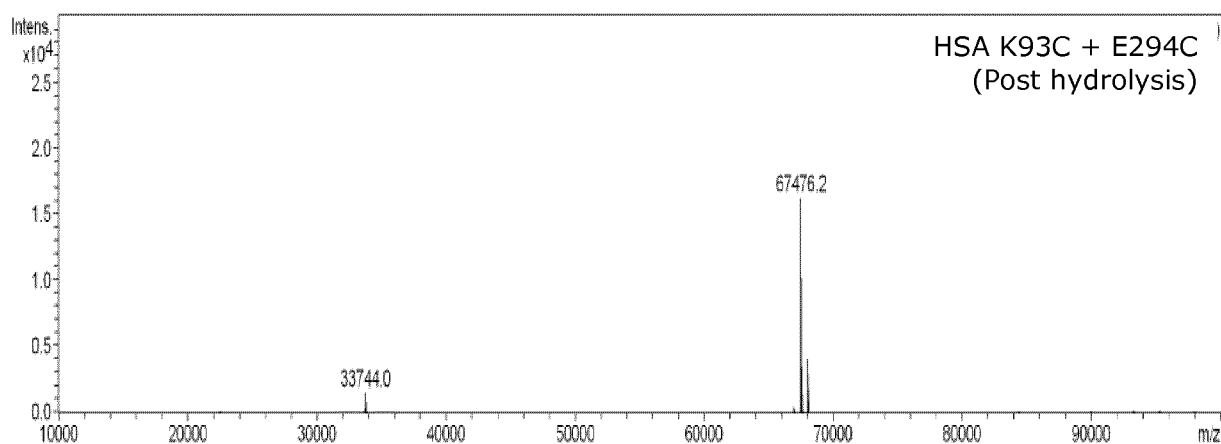
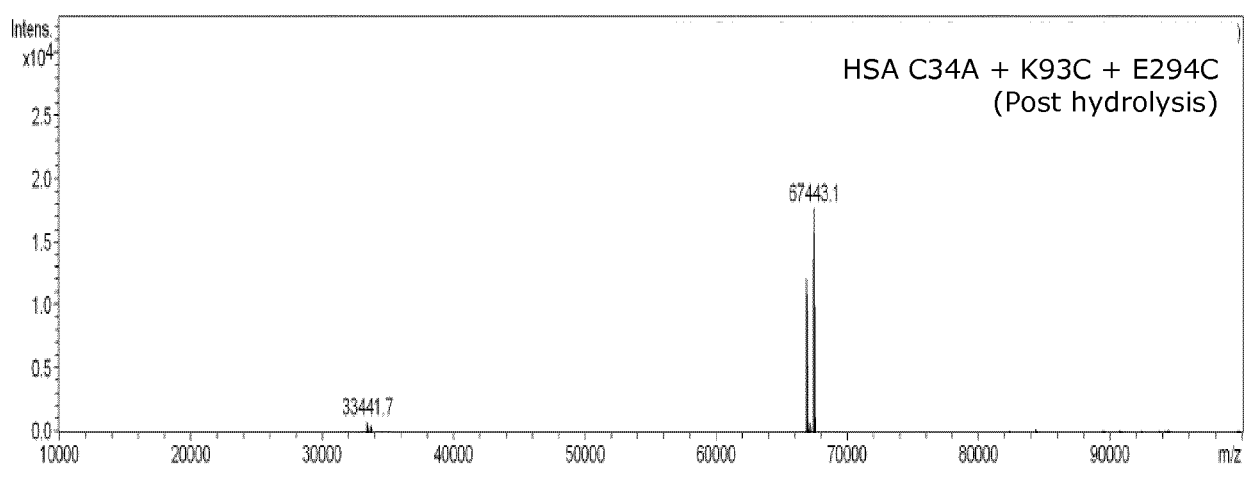
Figure 7**A****B****C**

Figure 8

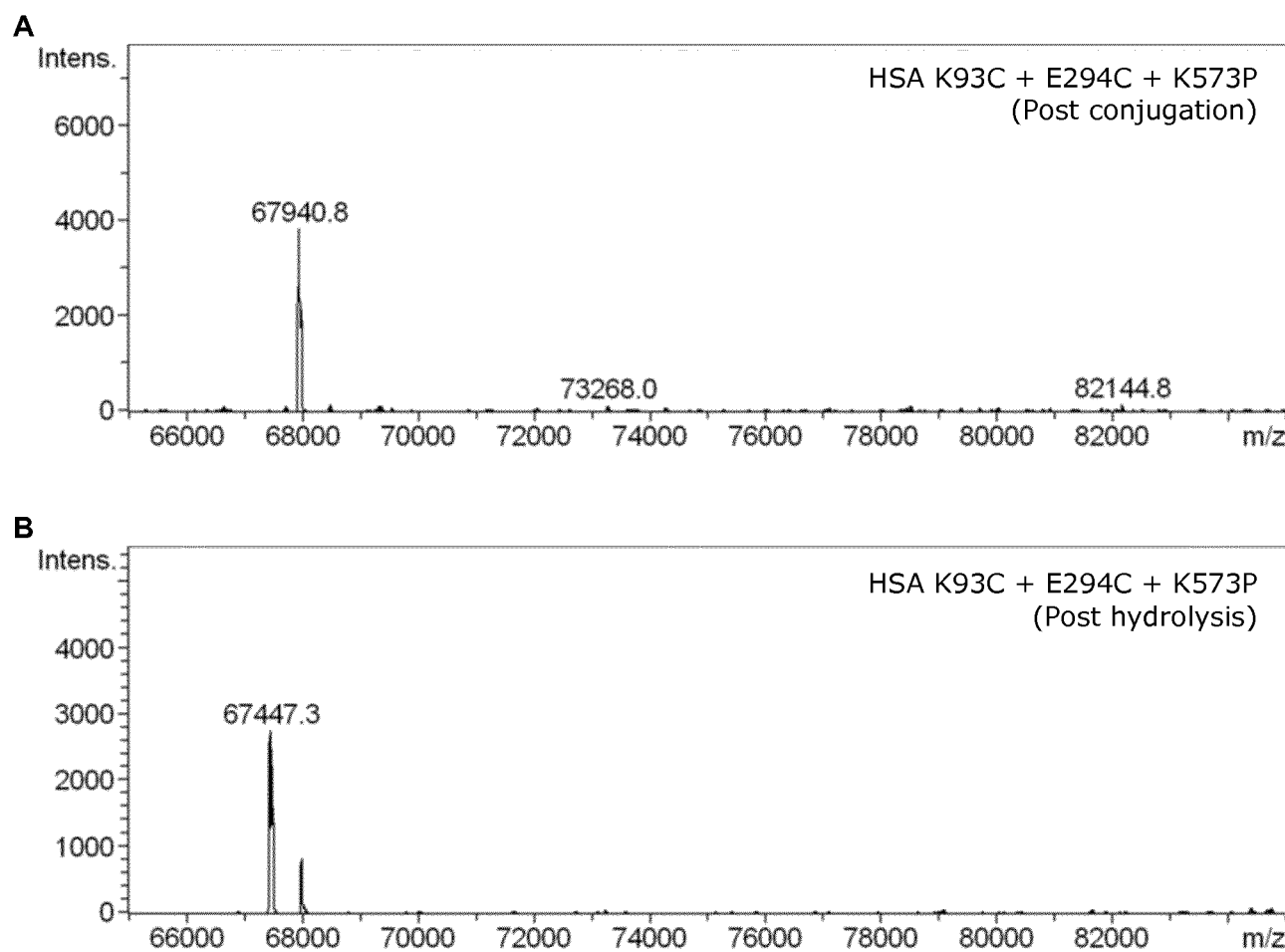


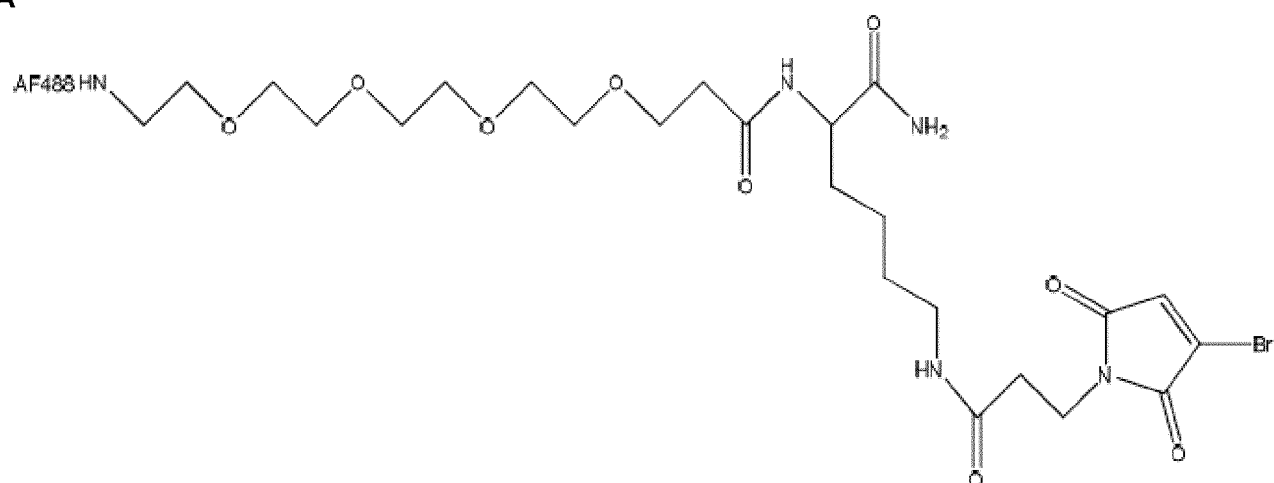
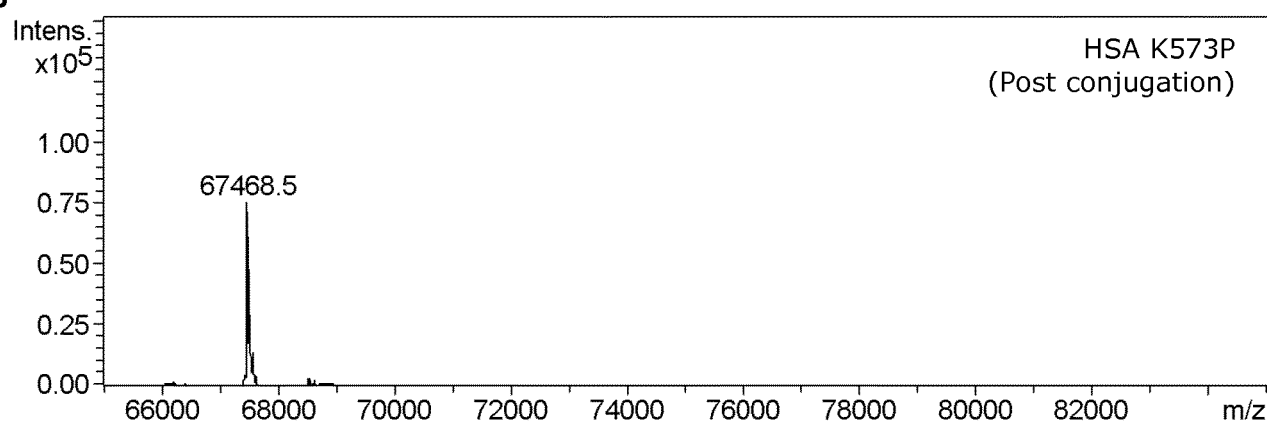
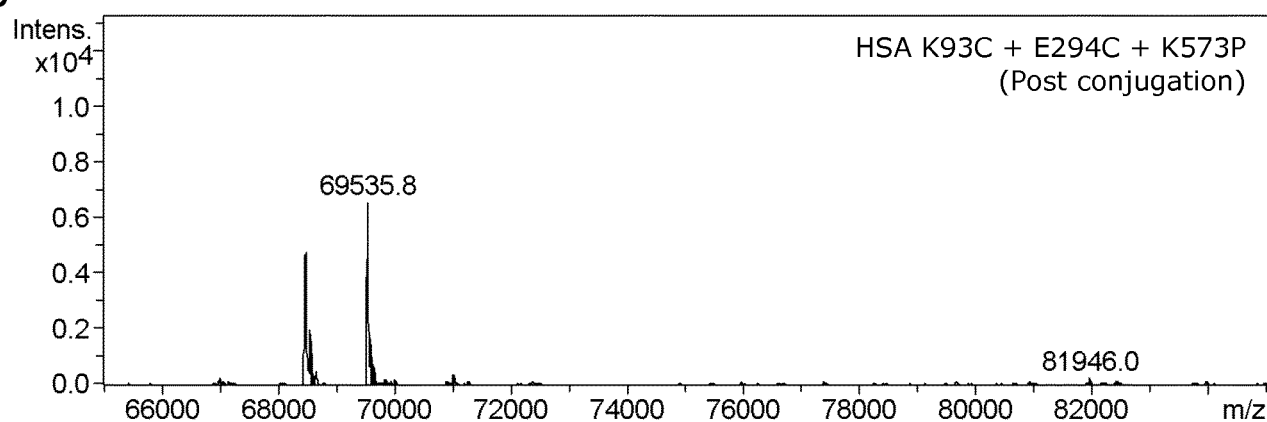
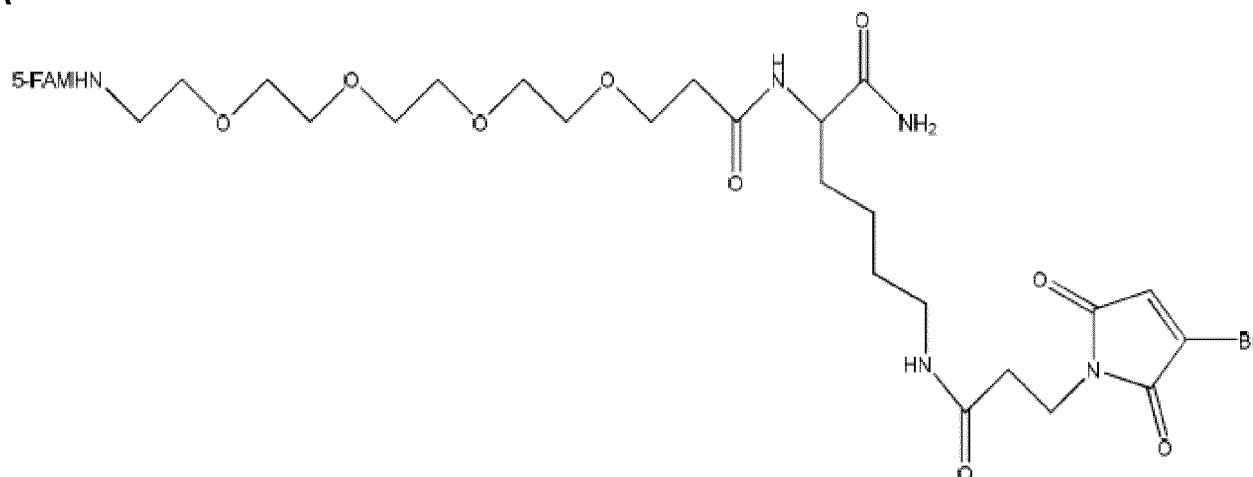
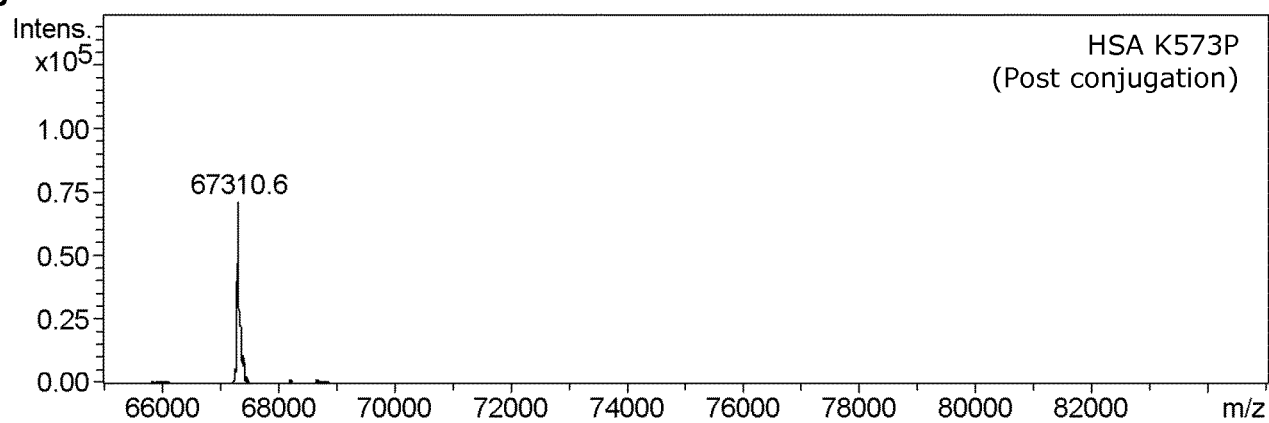
Figure 9**A****B****C**

Figure 10

A



B



C

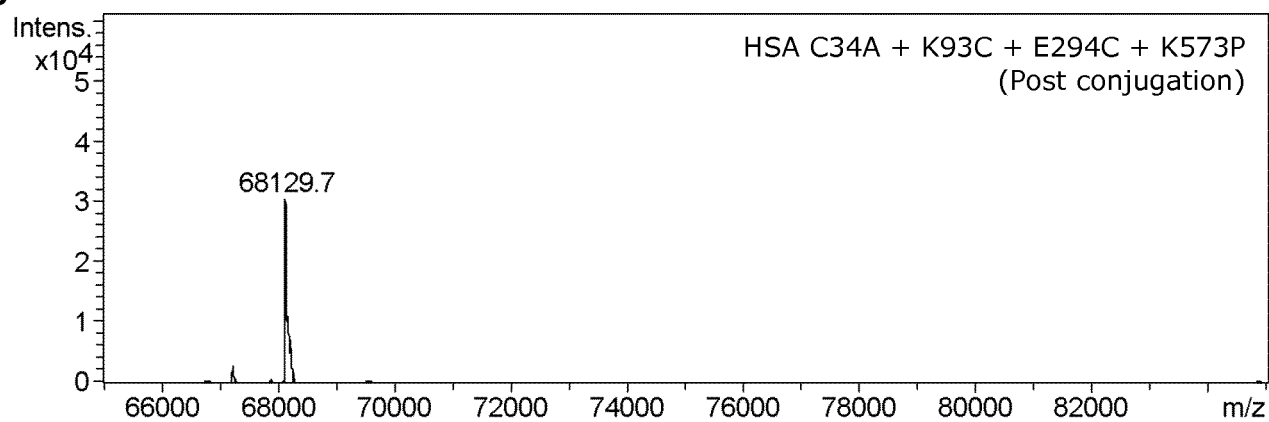
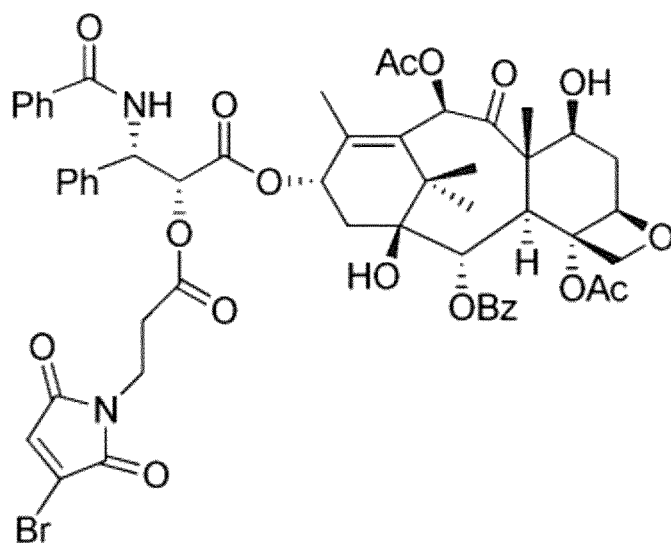
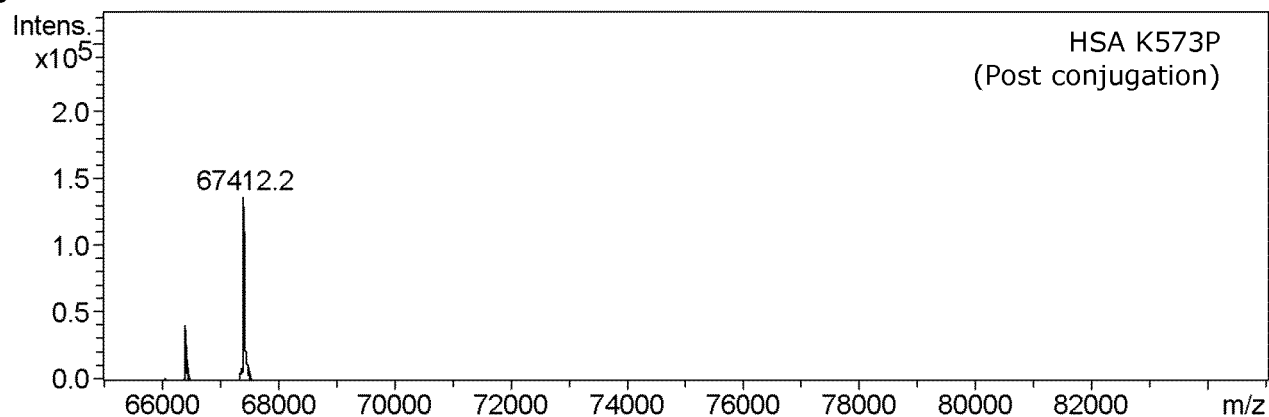


Figure 11

A



B



C

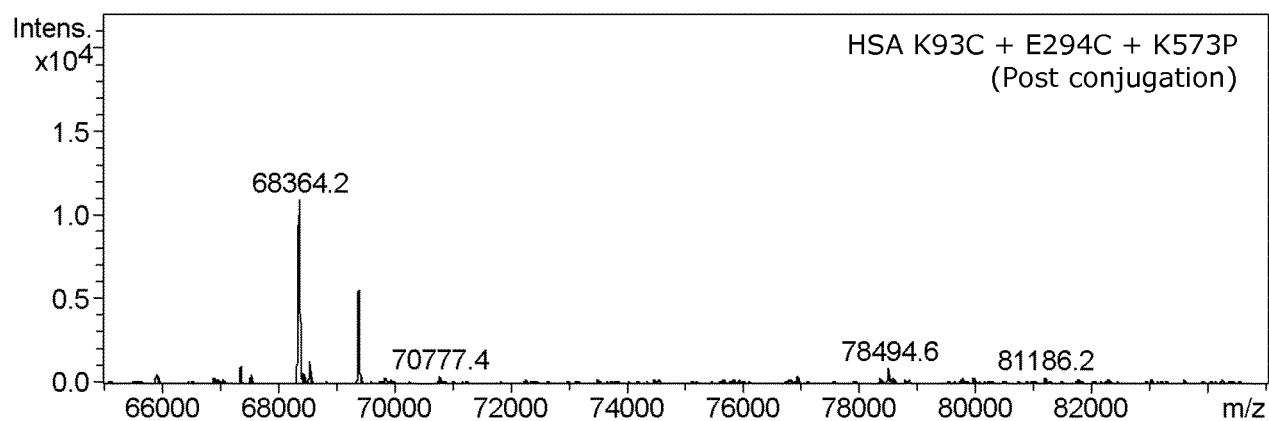
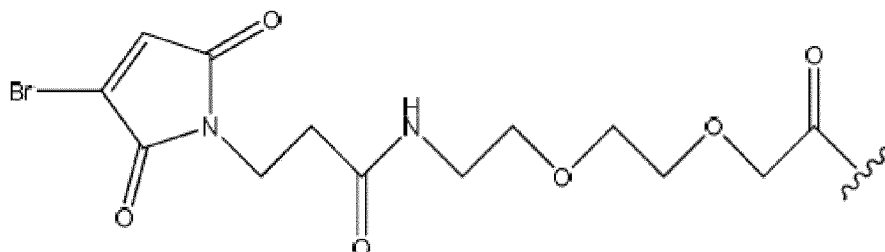


Figure 12

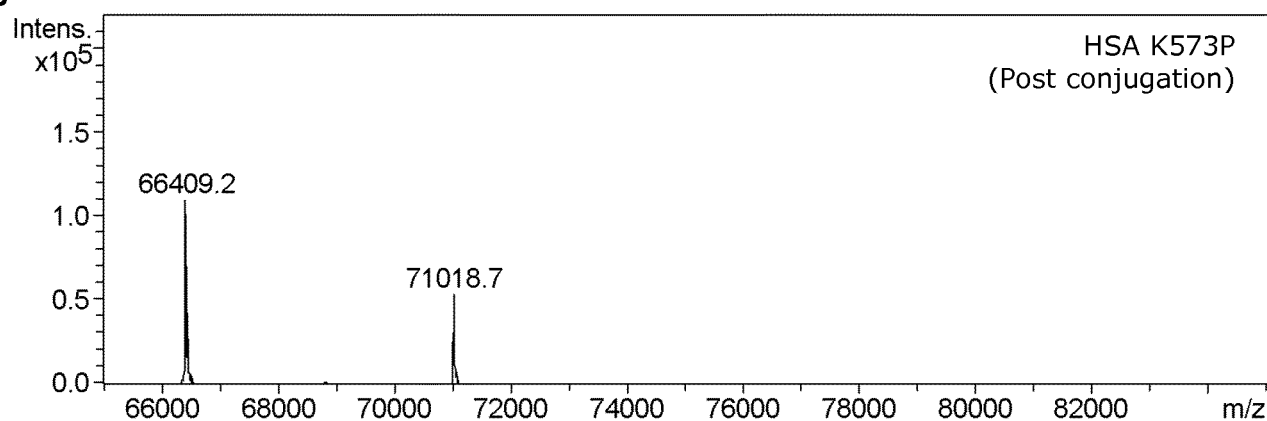
A

NH₂-HGEGT FTSDL SKQME EEAVR LFIEW LKNNGG
PSSGA PPPSK(Bromomaleimide-PEG2)-NH₂

Where bromomaleimide-PEG2 =



B



C

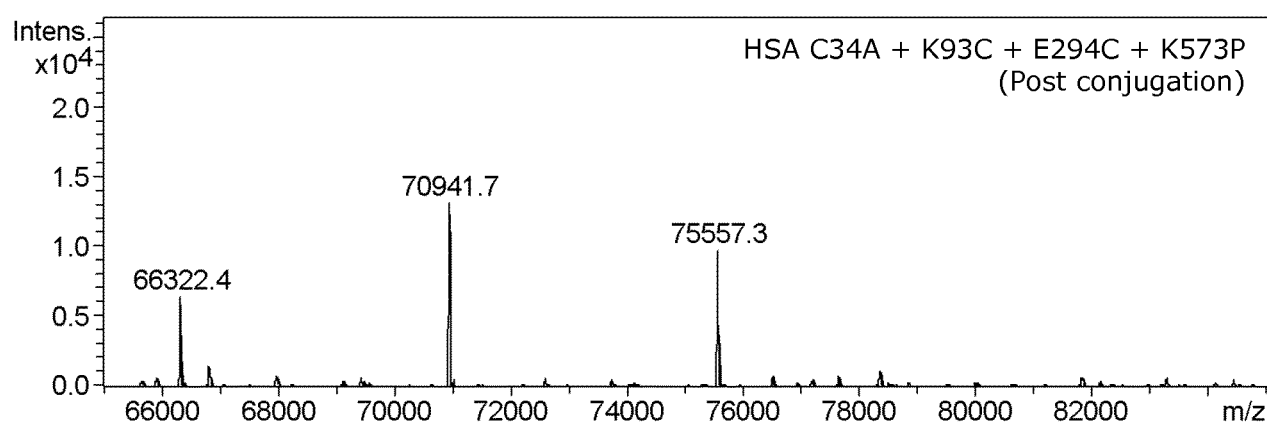
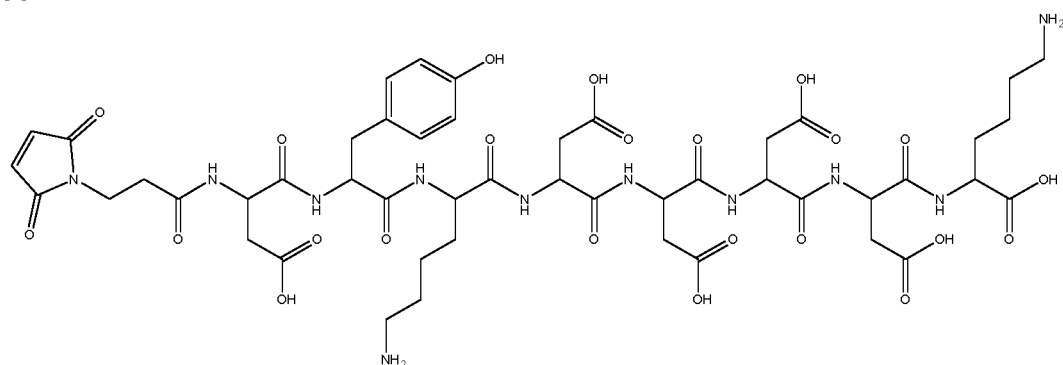
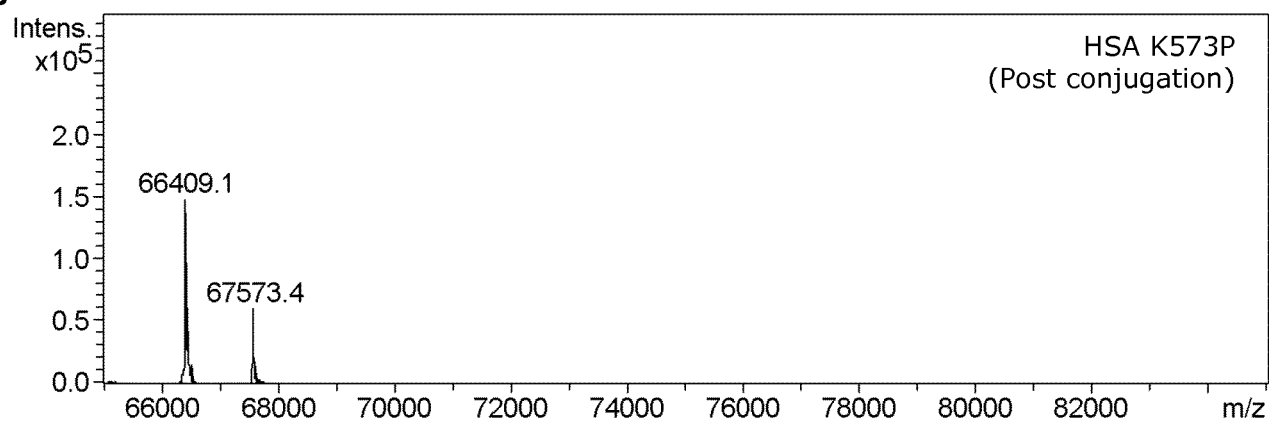


Figure 13

A



B



C

