SEQUENCE LISTING

<110> Woods, Elliot C
Xiao, Han
Bertozzi, Carolyn R
Gray, Melissa

<120> CONJUGATES FOR TARGETED CELL SURFACE EDITING

<130> STAN-1302WO

<150> 62357645
<151> 2016-07-01

<160> 4

<170> PatentIn version 3.5

<210> 1
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic sequence

<400> 1

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                  10                  15


Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn Thr Ala
            20                  25                  30


Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45


Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60


Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro
                85                  90                  95


Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110
```

```
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 2
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic sequence

<400> 2

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
            20                  25                  30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val
    50                  55                  60
```

```
Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Pro Lys Ser Cys
    210                 215                 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
```

```
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

Pro Gly Lys
    450
```

<210> 3
<211> 381
<212> PRT
<213> Salmonella typhimurium sialidase

<400> 3

```
Thr Val Glu Lys Ser Val Val Phe Lys Ala Glu Gly Glu His Phe Thr
1               5                  10                  15

Asp Gln Lys Gly Asn Thr Ile Val Gly Ser Gly Ser Gly Gly Thr Thr
            20                  25                  30

Lys Tyr Phe Arg Ile Pro Ala Met Cys Thr Thr Ser Lys Gly Thr Ile
        35                  40                  45

Val Val Phe Ala Asp Ala Arg His Asn Thr Ala Ser Asp Gln Ser Phe
    50                  55                  60

Ile Asp Thr Ala Ala Ala Arg Ser Thr Asp Gly Gly Lys Thr Trp Asn
65                  70                  75                  80

Lys Lys Ile Ala Ile Tyr Asn Asp Arg Val Asn Ser Lys Leu Ser Arg
                85                  90                  95

Val Met Asp Pro Thr Cys Ile Val Ala Asn Ile Gln Gly Arg Glu Thr
            100                 105                 110

Ile Leu Val Met Val Gly Lys Trp Asn Asn Asn Asp Lys Thr Trp Gly
        115                 120                 125

Ala Tyr Arg Asp Lys Ala Pro Asp Thr Asp Trp Asp Leu Val Leu Tyr
    130                 135                 140

Lys Ser Thr Asp Asp Gly Val Thr Phe Ser Lys Val Glu Thr Asn Ile
145                 150                 155                 160

His Asp Ile Val Thr Lys Asn Gly Thr Ile Ser Ala Met Leu Gly Gly
                165                 170                 175

Val Gly Ser Gly Leu Gln Leu Asn Asp Gly Lys Leu Val Phe Pro Val
            180                 185                 190

Gln Met Val Arg Thr Lys Asn Ile Thr Thr Val Leu Asn Thr Ser Phe
        195                 200                 205

Ile Tyr Ser Thr Asp Gly Ile Thr Trp Ser Leu Pro Ser Gly Tyr Cys
```

```
    210                 215                 220

Glu Gly Phe Gly Ser Glu Asn Asn Ile Ile Glu Phe Asn Ala Ser Leu
225                 230                 235                 240

Val Asn Asn Ile Arg Asn Ser Gly Leu Arg Arg Ser Phe Glu Thr Lys
                245                 250                 255

Asp Phe Gly Lys Thr Trp Thr Glu Phe Pro Pro Met Asp Lys Lys Val
            260                 265                 270

Asp Asn Arg Asn His Gly Val Gln Gly Ser Thr Ile Thr Ile Pro Ser
        275                 280                 285

Gly Asn Lys Leu Val Ala Ala His Ser Ser Ala Gln Asn Lys Asn Asn
    290                 295                 300

Asp Tyr Thr Arg Ser Asp Ile Ser Leu Tyr Ala His Asn Leu Tyr Ser
305                 310                 315                 320

Gly Glu Val Lys Leu Ile Asp Asp Phe Tyr Pro Lys Val Gly Asn Ala
                325                 330                 335

Ser Gly Ala Gly Tyr Ser Cys Leu Ser Tyr Arg Lys Asn Val Asp Lys
            340                 345                 350

Glu Thr Leu Tyr Val Val Tyr Glu Ala Asn Gly Ser Ile Glu Phe Gln
        355                 360                 365

Asp Leu Ser Arg His Leu Pro Val Ile Lys Ser Tyr Asn
    370                 375                 380


<210>  4
<211>  757
<212>  PRT
<213>  Vibrio cholerae sialidase

<400>  4

Ala Leu Phe Asp Tyr Asn Ala Thr Gly Asp Thr Glu Phe Asp Ser Pro
1               5                   10                  15
```

```
Ala Lys Gln Gly Trp Met Gln Asp Asn Thr Asn Asn Gly Ser Gly Val
            20                  25                  30

Leu Thr Asn Ala Asp Gly Met Pro Ala Trp Leu Val Gln Gly Ile Gly
        35                  40                  45

Gly Arg Ala Gln Trp Thr Tyr Ser Leu Ser Thr Asn Gln His Ala Gln
    50                  55                  60

Ala Ser Ser Phe Gly Trp Arg Met Thr Thr Glu Met Lys Val Leu Ser
65                  70                  75                  80

Gly Gly Met Ile Thr Asn Tyr Tyr Ala Asn Gly Thr Gln Arg Val Leu
                85                  90                  95

Pro Ile Ile Ser Leu Asp Ser Ser Gly Asn Leu Val Val Glu Phe Glu
            100                 105                 110

Gly Gln Thr Gly Arg Thr Val Leu Ala Thr Gly Thr Ala Ala Thr Glu
        115                 120                 125

Tyr His Lys Phe Glu Leu Val Phe Leu Pro Gly Ser Asn Pro Ser Ala
    130                 135                 140

Ser Phe Tyr Phe Asp Gly Lys Leu Ile Arg Asp Asn Ile Gln Pro Thr
145                 150                 155                 160

Ala Ser Lys Gln Asn Met Ile Val Trp Gly Asn Gly Ser Ser Asn Thr
                165                 170                 175

Asp Gly Val Ala Ala Tyr Arg Asp Ile Lys Phe Glu Ile Gln Gly Asp
            180                 185                 190

Val Ile Phe Arg Gly Pro Asp Arg Ile Pro Ser Ile Val Ala Ser Ser
        195                 200                 205

Val Thr Pro Gly Val Val Thr Ala Phe Ala Glu Lys Arg Val Gly Gly
    210                 215                 220

Gly Asp Pro Gly Ala Leu Ser Asn Thr Asn Asp Ile Ile Thr Arg Thr
225                 230                 235                 240
```

```
Ser Arg Asp Gly Gly Ile Thr Trp Asp Thr Glu Leu Asn Leu Thr Glu
               245                 250                 255

Gln Ile Asn Val Ser Asp Glu Phe Asp Phe Ser Asp Pro Arg Pro Ile
            260                 265                 270

Tyr Asp Pro Ser Ser Asn Thr Val Leu Val Ser Tyr Ala Arg Trp Pro
        275                 280                 285

Thr Asp Ala Ala Gln Asn Gly Asp Arg Ile Lys Pro Trp Met Pro Asn
    290                 295                 300

Gly Ile Phe Tyr Ser Val Tyr Asp Val Ala Ser Gly Asn Trp Gln Ala
305                 310                 315                 320

Pro Ile Asp Val Thr Asp Gln Val Lys Glu Arg Ser Phe Gln Ile Ala
               325                 330                 335

Gly Trp Gly Gly Ser Glu Leu Tyr Arg Arg Asn Thr Ser Leu Asn Ser
            340                 345                 350

Gln Gln Asp Trp Gln Ser Asn Ala Lys Ile Arg Ile Val Asp Gly Ala
        355                 360                 365

Ala Asn Gln Ile Gln Val Ala Asp Gly Ser Arg Lys Tyr Val Val Thr
    370                 375                 380

Leu Ser Ile Asp Glu Ser Gly Gly Leu Val Ala Asn Leu Asn Gly Val
385                 390                 395                 400

Ser Ala Pro Ile Ile Leu Gln Ser Glu His Ala Lys Val His Ser Phe
               405                 410                 415

His Asp Tyr Glu Leu Gln Tyr Ser Ala Leu Asn His Thr Thr Thr Leu
            420                 425                 430

Phe Val Asp Gly Gln Gln Ile Thr Thr Trp Ala Gly Glu Val Ser Gln
        435                 440                 445
```

```
Glu Asn Asn Ile Gln Phe Gly Asn Ala Asp Ala Gln Ile Asp Gly Arg
    450                 455                 460

Leu His Val Gln Lys Ile Val Leu Thr Gln Gln Gly His Asn Leu Val
465                 470                 475                 480

Glu Phe Asp Ala Phe Tyr Leu Ala Gln Gln Thr Pro Glu Val Glu Lys
                485                 490                 495

Asp Leu Glu Lys Leu Gly Trp Thr Lys Ile Lys Thr Gly Asn Thr Met
            500                 505                 510

Ser Leu Tyr Gly Asn Ala Ser Val Asn Pro Gly Pro Gly His Gly Ile
        515                 520                 525

Thr Leu Thr Arg Gln Gln Asn Ile Ser Gly Ser Gln Asn Gly Arg Leu
    530                 535                 540

Ile Tyr Pro Ala Ile Val Leu Asp Arg Phe Phe Leu Asn Val Met Ser
545                 550                 555                 560

Ile Tyr Ser Asp Asp Gly Gly Ser Asn Trp Gln Thr Gly Ser Thr Leu
                565                 570                 575

Pro Ile Pro Phe Arg Trp Lys Ser Ser Ser Ile Leu Glu Thr Leu Glu
            580                 585                 590

Pro Ser Glu Ala Asp Met Val Glu Leu Gln Asn Gly Asp Leu Leu Leu
        595                 600                 605

Thr Ala Arg Leu Asp Phe Asn Gln Ile Val Asn Gly Val Asn Tyr Ser
    610                 615                 620

Pro Arg Gln Gln Phe Leu Ser Lys Asp Gly Gly Ile Thr Trp Ser Leu
625                 630                 635                 640

Leu Glu Ala Asn Asn Ala Asn Val Phe Ser Asn Ile Ser Thr Gly Thr
                645                 650                 655

Val Asp Ala Ser Ile Thr Arg Phe Glu Gln Ser Asp Gly Ser His Phe
            660                 665                 670
```

```
Leu Leu Phe Thr Asn Pro Gln Gly Asn Pro Ala Gly Thr Asn Gly Arg
        675                 680                 685

Gln Asn Leu Gly Leu Trp Phe Ser Phe Asp Glu Gly Val Thr Trp Lys
    690                 695                 700

Gly Pro Ile Gln Leu Val Asn Gly Ala Ser Ala Tyr Ser Asp Ile Tyr
705                 710                 715                 720

Gln Leu Asp Ser Glu Asn Ala Ile Val Ile Val Glu Thr Asp Asn Ser
                725                 730                 735

Asn Met Arg Ile Leu Arg Met Pro Ile Thr Leu Leu Lys Gln Lys Leu
            740                 745                 750

Thr Leu Ser Gln Asn
        755
```