

DE2008-025.ST25.txt
SEQUENCE LISTING

<110> sanofi-aventis
<120> Fluorescence based assay to detect sodium-calcium exchanger (NCX)
"forward mode" modulating compounds
<130> DE2008/025
<150> 08290264.4
<151> 2008-03-20
<160> 3
<170> PatentIn version 3.3
<210> 1
<211> 973
<212> PRT
<213> Homo sapiens
<400> 1

Met Tyr Asn Met Arg Arg Leu Ser Leu Ser Pro Thr Phe Ser Met Gly
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Phe His Leu Leu Val Thr Val Ser Leu Leu Phe Ser His Val Asp His
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Val Ile Ala Glu Thr Glu Met Glu Gly Glu Gly Asn Glu Thr Gly Glu
35 40 45

Cys Thr Gly Ser Tyr Tyr Cys Lys Lys Gly Val Ile Leu Pro Ile Trp
50 55 60

Glu Pro Gln Asp Pro Ser Phe Gly Asp Lys Ile Ala Arg Ala Thr Val
65 70 75 80

Tyr Phe Val Ala Met Val Tyr Met Phe Leu Gly Val Ser Ile Ile Ala
85 90 95

Asp Arg Phe Met Ser Ser Ile Glu Val Ile Thr Ser Gln Glu Lys Glu
100 105 110

Ile Thr Ile Lys Lys Pro Asn Gly Glu Thr Thr Lys Thr Thr Val Arg
115 120 125

Ile Trp Asn Glu Thr Val Ser Asn Leu Thr Leu Met Ala Leu Gly Ser
130 135 140

Ser Ala Pro Glu Ile Leu Leu Ser Val Ile Glu Val Cys Gly His Asn
145 150 155 160

Phe Thr Ala Gly Asp Leu Gly Pro Ser Thr Ile Val Gly Ser Ala Ala
165 170 175

Phe Asn Met Phe Ile Ile Ile Ala Leu Cys Val Tyr Val Val Pro Asp
Seite 1

180

185

190

Gly Glu Thr Arg Lys Ile Lys His Leu Arg Val Phe Phe Val Thr Ala
 195 200 205
 Ala Trp Ser Ile Phe Ala Tyr Thr Trp Leu Tyr Ile Ile Leu Ser Val
 210 215 220
 Ile Ser Pro Gly Val Val Glu Val Trp Glu Gly Leu Leu Thr Phe Phe
 225 230 235 240
 Phe Phe Pro Ile Cys Val Val Phe Ala Trp Val Ala Asp Arg Arg Leu
 245 250 255
 Leu Phe Tyr Lys Tyr Val Tyr Lys Arg Tyr Arg Ala Gly Lys Gln Arg
 260 265 270
 Gly Met Ile Ile Glu His Glu Gly Asp Arg Pro Ser Ser Lys Thr Glu
 275 280 285
 Ile Glu Met Asp Gly Lys Val Val Asn Ser His Val Glu Asn Phe Leu
 290 295 300
 Asp Gly Ala Leu Val Leu Glu Val Asp Glu Arg Asp Gln Asp Asp Glu
 305 310 315 320
 Glu Ala Arg Arg Glu Met Ala Arg Ile Leu Lys Glu Leu Lys Gln Lys
 325 330 335
 His Pro Asp Lys Glu Ile Glu Gln Leu Ile Glu Leu Ala Asn Tyr Gln
 340 345 350
 Val Leu Ser Gln Gln Gln Lys Ser Arg Ala Phe Tyr Arg Ile Gln Ala
 355 360 365
 Thr Arg Leu Met Thr Gly Ala Gly Asn Ile Leu Lys Arg His Ala Ala
 370 375 380
 Asp Gln Ala Arg Lys Ala Val Ser Met His Glu Val Asn Thr Glu Val
 385 390 395 400
 Thr Glu Asn Asp Pro Val Ser Lys Ile Phe Phe Glu Gln Gly Thr Tyr
 405 410 415
 Gln Cys Leu Glu Asn Cys Gly Thr Val Ala Leu Thr Ile Ile Arg Arg
 420 425 430
 Gly Gly Asp Leu Thr Asn Thr Val Phe Val Asp Phe Arg Thr Glu Asp
 435 440 445
 Gly Thr Ala Asn Ala Gly Ser Asp Tyr Glu Phe Thr Glu Gly Thr Val

450

455

460

Val Phe Lys Pro Gly Asp Thr Gln Lys Glu Ile Arg Val Gly Ile Ile
 465 470 475 480

Asp Asp Asp Ile Phe Glu Glu Asp Glu Asn Phe Leu Val His Leu Ser
 485 490 495

Asn Val Lys Val Ser Ser Glu Ala Ser Glu Asp Gly Ile Leu Glu Ala
 500 505 510

Asn His Val Ser Thr Leu Ala Cys Leu Gly Ser Pro Ser Thr Ala Thr
 515 520 525

Val Thr Ile Phe Asp Asp Asp His Ala Gly Ile Phe Thr Phe Glu Glu
 530 535 540

Pro Val Thr His Val Ser Glu Ser Ile Gly Ile Met Glu Val Lys Val
 545 550 555 560

Leu Arg Thr Ser Gly Ala Arg Gly Asn Val Ile Val Pro Tyr Lys Thr
 565 570 575

Ile Glu Gly Thr Ala Arg Gly Gly Gly Glu Asp Phe Glu Asp Thr Cys
 580 585 590

Gly Glu Leu Glu Phe Gln Asn Asp Glu Ile Val Lys Thr Ile Ser Val
 595 600 605

Lys Val Ile Asp Asp Glu Glu Tyr Glu Lys Asn Lys Thr Phe Phe Leu
 610 615 620

Glu Ile Gly Glu Pro Arg Leu Val Glu Met Ser Glu Lys Lys Ala Leu
 625 630 635 640

Leu Leu Asn Glu Leu Gly Gly Phe Thr Ile Thr Gly Lys Tyr Leu Phe
 645 650 655

Gly Gln Pro Val Phe Arg Lys Val His Ala Arg Glu His Pro Ile Leu
 660 665 670

Ser Thr Val Ile Thr Ile Ala Asp Glu Tyr Asp Asp Lys Gln Pro Leu
 675 680 685

Thr Ser Lys Glu Glu Glu Glu Arg Arg Ile Ala Glu Met Gly Arg Pro
 690 695 700

Ile Leu Gly Glu His Thr Lys Leu Glu Val Ile Ile Glu Glu Ser Tyr
 705 710 715 720

Glu Phe Lys Ser Thr Val Asp Lys Leu Ile Lys Lys Thr Asn Leu Ala
 Seite 3

Leu Val Val Gly Thr Asn Ser Trp Arg Glu Gln Phe Ile Glu Ala Ile
740 745 750

Thr Val Ser Ala Gly Glu Asp Asp Asp Asp Asp Glu Cys Gly Glu Glu
755 760 765

Lys Leu Pro Ser Cys Phe Asp Tyr Val Met His Phe Leu Thr Val Phe
770 775 780

Trp Lys Val Leu Phe Ala Phe Val Pro Pro Thr Glu Tyr Trp Asn Gly
785 790 795 800

Trp Ala Cys Phe Ile Val Ser Ile Leu Met Ile Gly Leu Leu Thr Ala
805 810 815

Phe Ile Gly Asp Leu Ala Ser His Phe Gly Cys Thr Ile Gly Leu Lys
820 825 830

Asp Ser Val Thr Ala Val Val Phe Val Ala Leu Gly Thr Ser Val Pro
835 840 845

Asp Thr Phe Ala Ser Lys Val Ala Ala Thr Gln Asp Gln Tyr Ala Asp
850 855 860

Ala Ser Ile Gly Asn Val Thr Gly Ser Asn Ala Val Asn Val Phe Leu
865 870 875 880

Gly Ile Gly Val Ala Trp Ser Ile Ala Ala Ile Tyr His Ala Ala Asn
885 890 895

Gly Glu Gln Phe Lys Val Ser Pro Gly Thr Leu Ala Phe Ser Val Thr
900 905 910

Leu Phe Thr Ile Phe Ala Phe Ile Asn Val Gly Val Leu Leu Tyr Arg
915 920 925

Arg Arg Pro Glu Ile Gly Gly Glu Leu Gly Gly Pro Arg Thr Ala Lys
930 935 940

Leu Leu Thr Ser Cys Leu Phe Val Leu Leu Trp Leu Leu Tyr Ile Phe
945 950 955 960

Phe Ser Ser Leu Glu Ala Tyr Cys His Ile Lys Gly Phe
965 970

<210> 2
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<212> PRT
<213> Homo sapiens

<400> 2

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 35 40 45

Cys Gln Pro Gly Val Leu Leu Pro Val Trp Glu Pro Asp Asp Pro Ser
 50 55 60

Leu Gly Asp Lys Ala Ala Arg Ala Val Val Tyr Phe Val Ala Met Val
 65 70 75 80

Tyr Met Phe Leu Gly Val Ser Ile Ile Ala Asp Arg Phe Met Ala Ala
 85 90 95

Ile Glu Val Ile Thr Ser Lys Glu Lys Glu Ile Thr Ile Thr Lys Ala
 100 105 110

Asn Gly Glu Thr Ser Val Gly Thr Val Arg Ile Trp Asn Glu Thr Val
 115 120 125

Ser Asn Leu Thr Leu Met Ala Leu Gly Ser Ser Ala Pro Glu Ile Leu
 130 135 140

Leu Ser Val Ile Glu Val Cys Gly His Asn Phe Gln Ala Gly Glu Leu
 145 150 155 160

Gly Pro Gly Thr Ile Val Gly Ser Ala Ala Phe Asn Met Phe Val Val
 165 170 175

Ile Ala Val Cys Ile Tyr Val Ile Pro Ala Gly Glu Ser Arg Lys Ile
 180 185 190

Lys His Leu Arg Val Phe Phe Val Thr Ala Ser Trp Ser Ile Phe Ala
 195 200 205

Tyr Val Trp Leu Tyr Leu Ile Leu Ala Val Phe Ser Pro Gly Val Val
 210 215 220

Gln Val Trp Glu Ala Leu Leu Thr Leu Val Phe Phe Pro Val Cys Val
 225 230 235 240

Val Phe Ala Trp Met Ala Asp Lys Arg Leu Leu Phe Tyr Lys Tyr Val
 245 250 255

Tyr Lys Arg Tyr Arg Thr Asp Pro Arg Ser Gly Ile Ile Ile Gly Ala
 260 265 270

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Glu Gly Asp Pro Pro Lys Ser Ile Glu Leu Asp Gly Thr Phe Val Gly
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 Ala Glu Ala Pro Gly Glu Leu Gly Gly Leu Gly Pro Gly Pro Ala Glu
 290 295 300
 Ala Arg Glu Leu Asp Ala Ser Arg Arg Glu Val Ile Gln Ile Leu Lys
 305 310 315 320
 Asp Leu Lys Gln Lys His Pro Asp Lys Asp Leu Glu Gln Leu Val Gly
 325 330 335
 Ile Ala Asn Tyr Tyr Ala Leu Leu His Gln Gln Lys Ser Arg Ala Phe
 340 345 350
 Tyr Arg Ile Gln Ala Thr Arg Leu Met Thr Gly Ala Gly Asn Val Leu
 355 360 365
 Arg Arg His Ala Ala Asp Ala Ser Arg Arg Ala Ala Pro Ala Glu Gly
 370 375 380
 Ala Gly Glu Asp Glu Asp Asp Gly Ala Ser Arg Ile Phe Phe Glu Pro
 385 390 395 400
 Ser Leu Tyr His Cys Leu Glu Asn Cys Gly Ser Val Leu Leu Ser Val
 405 410 415
 Thr Cys Gln Gly Gly Glu Gly Asn Ser Thr Phe Tyr Val Asp Tyr Arg
 420 425 430
 Thr Glu Asp Gly Ser Ala Lys Ala Gly Ser Asp Tyr Glu Tyr Ser Glu
 435 440 445
 Gly Thr Leu Val Phe Lys Pro Gly Glu Thr Gln Lys Glu Leu Arg Ile
 450 455 460
 Gly Ile Ile Asp Asp Asp Ile Phe Glu Glu Asp Glu His Phe Phe Val
 465 470 475 480
 Arg Leu Leu Asn Leu Arg Val Gly Asp Ala Gln Gly Met Phe Glu Pro
 485 490 495
 Asp Gly Gly Gly Arg Pro Lys Gly Arg Leu Val Ala Pro Leu Leu Ala
 500 505 510
 Thr Val Thr Ile Leu Asp Asp Asp His Ala Gly Ile Phe Ser Phe Gln
 515 520 525
 Asp Arg Leu Leu His Val Ser Glu Cys Met Gly Thr Val Asp Val Arg
 530 535 540

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Val Val Arg Ser Ser Gly Ala Arg Gly Thr Val Arg Leu Pro Tyr Arg
 545 550 555 560
 Thr Val Asp Gly Thr Ala Arg Gly Gly Gly Val His Tyr Glu Asp Ala
 565 570 575
 Cys Gly Glu Leu Glu Phe Gly Asp Asp Glu Thr Met Lys Thr Leu Gln
 580 585 590
 Val Lys Ile Val Asp Asp Glu Glu Tyr Glu Lys Lys Asp Asn Phe Phe
 595 600 605
 Ile Glu Leu Gly Gln Pro Gln Trp Leu Lys Arg Gly Ile Ser Ala Leu
 610 615 620
 Leu Leu Asn Gln Gly Asp Gly Asp Arg Lys Leu Thr Ala Glu Glu Glu
 625 630 635 640
 Glu Ala Arg Arg Ile Ala Glu Met Gly Lys Pro Val Leu Gly Glu Asn
 645 650 655
 Cys Arg Leu Glu Val Ile Ile Glu Glu Ser Tyr Asp Phe Lys Asn Thr
 660 665 670
 Val Asp Lys Leu Ile Lys Lys Thr Asn Leu Ala Leu Val Ile Gly Thr
 675 680 685
 His Ser Trp Arg Glu Gln Phe Leu Glu Ala Ile Thr Val Ser Ala Gly
 690 695 700
 Asp Glu Glu Glu Glu Glu Asp Gly Ser Arg Glu Glu Arg Leu Pro Ser
 705 710 715 720
 Cys Phe Asp Tyr Val Met His Phe Leu Thr Val Phe Trp Lys Val Leu
 725 730 735
 Phe Ala Cys Val Pro Pro Thr Glu Tyr Cys His Gly Trp Ala Cys Phe
 740 745 750
 Gly Val Ser Ile Leu Val Ile Gly Leu Leu Thr Ala Leu Ile Gly Asp
 755 760 765
 Leu Ala Ser His Phe Gly Cys Thr Val Gly Leu Lys Asp Ser Val Asn
 770 775 780
 Ala Val Val Phe Val Ala Leu Gly Thr Ser Ile Pro Asp Thr Phe Ala
 785 790 795 800
 Ser Lys Val Ala Ala Leu Gln Asp Gln Cys Ala Asp Ala Ser Ile Gly
 805 810 815

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Asn Val Thr Gly Ser Asn Ala Val Asn Val Phe Leu Gly Leu Gly Val
820 825 830

Ala Trp Ser Val Ala Ala Val Tyr Trp Ala Val Gln Gly Arg Pro Phe
835 840 845

Glu Val Arg Thr Gly Thr Leu Ala Phe Ser Val Thr Leu Phe Thr Val
850 855 860

Phe Ala Phe Val Gly Ile Ala Val Leu Leu Tyr Arg Arg Arg Pro His
865 870 875 880

Ile Gly Gly Glu Leu Gly Gly Pro Arg Gly Pro Lys Leu Ala Thr Thr
885 890 895

Ala Leu Phe Leu Gly Leu Trp Leu Leu Tyr Ile Leu Phe Ala Ser Leu
900 905 910

Glu Ala Tyr Cys His Ile Arg Gly Phe
915 920

<210> 3
<211> 924
<212> PRT
<213> Homo sapiens

<400> 3

Met Ala Trp Leu Arg Leu Gln Pro Leu Thr Ser Ala Phe Leu His Phe
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Gly Leu Val Thr Phe Val Leu Phe Leu Asn Gly Leu Arg Ala Glu Ala
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Gly Gly Ser Gly Asp Val Pro Ser Thr Gly Gln Asn Asn Glu Ser Cys
35 40 45

Ser Gly Ser Ser Asp Cys Lys Glu Gly Val Ile Leu Pro Ile Trp Tyr
50 55 60

Pro Glu Asn Pro Ser Leu Gly Asp Lys Ile Ala Arg Val Ile Val Tyr
65 70 75 80

Phe Val Ala Leu Ile Tyr Met Phe Leu Gly Val Ser Ile Ile Ala Asp
85 90 95

Arg Phe Met Ala Ser Ile Glu Val Ile Thr Ser Gln Glu Arg Glu Val
100 105 110

Thr Ile Lys Lys Pro Asn Gly Glu Thr Ser Thr Thr Thr Ile Arg Val
115 120 125

DE2008-025.ST25.txt

Trp Asn Glu Thr Val Ser Asn Leu Thr Leu Met Ala Leu Gly Ser Ser
 130 135 140
 Ala Pro Glu Ile Leu Leu Ser Leu Ile Glu Val Cys Gly His Gly Phe
 145 150 155 160
 Ile Ala Gly Asp Leu Gly Pro Ser Thr Ile Val Gly Ser Ala Ala Phe
 165 170 175
 Asn Met Phe Ile Ile Ile Gly Ile Cys Val Tyr Val Ile Pro Asp Gly
 180 185 190
 Glu Thr Arg Lys Ile Lys His Leu Arg Val Phe Phe Ile Thr Ala Ala
 195 200 205
 Trp Ser Ile Phe Ala Tyr Ile Trp Leu Tyr Met Ile Leu Ala Val Phe
 210 215 220
 Ser Pro Gly Val Val Gln Val Trp Glu Gly Leu Leu Thr Leu Phe Phe
 225 230 235 240
 Phe Pro Val Cys Val Leu Leu Ala Trp Val Ala Asp Lys Arg Leu Leu
 245 250 255
 Phe Tyr Lys Tyr Met His Lys Lys Tyr Arg Thr Asp Lys His Arg Gly
 260 265 270
 Ile Ile Ile Glu Thr Glu Gly Asp His Pro Lys Gly Ile Glu Met Asp
 275 280 285
 Gly Lys Met Met Asn Ser His Phe Leu Asp Gly Asn Leu Val Pro Leu
 290 295 300
 Glu Gly Lys Glu Val Asp Glu Ser Arg Arg Glu Met Ile Arg Ile Leu
 305 310 315 320
 Lys Asp Leu Lys Gln Lys His Pro Glu Lys Asp Leu Asp Gln Leu Val
 325 330 335
 Glu Met Ala Asn Tyr Tyr Ala Leu Ser His Gln Gln Lys Ser Arg Ala
 340 345 350
 Phe Tyr Arg Ile Gln Ala Thr Arg Met Met Thr Gly Ala Gly Asn Ile
 355 360 365
 Leu Lys Lys His Ala Ala Glu Gln Ala Lys Lys Ala Ser Ser Met Ser
 370 375 380
 Glu Val His Thr Asp Glu Pro Glu Asp Phe Ile Ser Lys Val Phe Phe
 385 390 395 400

DE2008-025.ST25.txt

Asp Pro Cys Ser Tyr Gln Cys Leu Glu Asn Cys Gly Ala Val Leu Leu
 405 410 415
 Thr Val Val Arg Lys Gly Gly Asp Met Ser Lys Thr Met Tyr Val Asp
 420 425 430
 Tyr Lys Thr Glu Asp Gly Ser Ala Asn Ala Gly Ala Asp Tyr Glu Phe
 435 440 445
 Thr Glu Gly Thr Val Val Leu Lys Pro Gly Glu Thr Gln Lys Glu Phe
 450 455 460
 Ser Val Gly Ile Ile Asp Asp Asp Ile Phe Glu Glu Asp Glu His Phe
 465 470 475 480
 Phe Val Arg Leu Ser Asn Val Arg Ile Glu Glu Glu Gln Pro Glu Glu
 485 490 495
 Gly Met Pro Pro Ala Ile Phe Asn Ser Leu Pro Leu Pro Arg Ala Val
 500 505 510
 Leu Ala Ser Pro Cys Val Ala Thr Val Thr Ile Leu Asp Asp Asp His
 515 520 525
 Ala Gly Ile Phe Thr Phe Glu Cys Asp Thr Ile His Val Ser Glu Ser
 530 535 540
 Ile Gly Val Met Glu Val Lys Val Leu Arg Thr Ser Gly Ala Arg Gly
 545 550 555 560
 Thr Val Ile Val Pro Phe Arg Thr Val Glu Gly Thr Ala Lys Gly Gly
 565 570 575
 Gly Glu Asp Phe Glu Asp Thr Tyr Gly Glu Leu Glu Phe Lys Asn Asp
 580 585 590
 Glu Thr Val Lys Thr Ile Arg Val Lys Ile Val Asp Glu Glu Glu Tyr
 595 600 605
 Glu Arg Gln Glu Asn Phe Phe Ile Ala Leu Gly Glu Pro Lys Trp Met
 610 615 620
 Glu Arg Gly Ile Ser Ala Leu Leu Leu Ser Pro Asp Arg Lys Leu Thr
 625 630 635 640
 Met Glu Glu Glu Glu Ala Lys Arg Ile Ala Glu Met Gly Lys Pro Val
 645 650 655
 Leu Gly Glu His Pro Lys Leu Glu Val Ile Ile Glu Glu Ser Tyr Glu
 660 665 670

DE2008-025.ST25.txt

Phe Lys Thr Thr Val Asp Lys Leu Ile Lys Lys Thr Asn Leu Ala Leu
 675 680 685
 Val Val Gly Thr His Ser Trp Arg Asp Gln Phe Met Glu Ala Ile Thr
 690 695 700
 Val Ser Ala Ala Gly Asp Glu Asp Glu Asp Glu Ser Gly Glu Glu Arg
 705 710 715 720
 Leu Pro Ser Cys Phe Asp Tyr Val Met His Phe Leu Thr Val Phe Trp
 725 730 735
 Lys Val Leu Phe Ala Cys Val Pro Pro Thr Glu Tyr Cys His Gly Trp
 740 745 750
 Ala Cys Phe Ala Val Ser Ile Leu Ile Ile Gly Met Leu Thr Ala Ile
 755 760 765
 Ile Gly Asp Leu Ala Ser His Phe Gly Cys Thr Ile Gly Leu Lys Asp
 770 775 780
 Ser Val Thr Ala Val Val Phe Val Ala Phe Gly Thr Ser Val Pro Asp
 785 790 795 800
 Thr Phe Ala Ser Lys Ala Ala Ala Leu Gln Asp Val Tyr Ala Asp Ala
 805 810 815
 Ser Ile Gly Asn Val Thr Gly Ser Asn Ala Val Asn Val Phe Leu Gly
 820 825 830
 Ile Gly Leu Ala Trp Ser Val Ala Ala Ile Tyr Trp Ala Leu Gln Gly
 835 840 845
 Gln Glu Phe His Val Ser Ala Gly Thr Leu Ala Phe Ser Val Thr Leu
 850 855 860
 Phe Thr Ile Phe Ala Phe Val Cys Ile Ser Val Leu Leu Tyr Arg Arg
 865 870 875 880
 Arg Pro His Leu Gly Gly Glu Leu Gly Gly Pro Arg Gly Cys Lys Leu
 885 890 895
 Ala Thr Thr Trp Leu Phe Val Ser Leu Trp Leu Leu Tyr Ile Leu Phe
 900 905 910
 Ala Thr Leu Glu Ala Tyr Cys Tyr Ile Lys Gly Phe
 915 920