

N3214PCT\_SEQ.LIST.  
SEQUENCE LISTING

<110> Ludwig-Maximilians-Universität München  
 <120> A fluorescent two-hybrid (F2H) assay for direct visualization of  
 protein interactions in living cells  
 <130> N3214 PCT  
 <150> EP 08 00 0297.5  
 <151> 2008-01-09  
 <160> 10  
 <170> PatentIn version 3.3  
 <210> 1  
 <211> 238  
 <212> PRT  
 <213> Aequorea victoria  
 <400> 1

Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  
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Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60

Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg  
 85 90 95

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  
 100 105 110

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile  
 115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
 130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
 145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
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Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
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Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val  
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Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
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aaacttaccc ttaaatttat ttgcactact ggaaaactac ctgttccatg gccaacactt 180  
gtcactactt tctcttatgg tgttcaatgc ttttcaagat acccagatca tatgaaacag 240  
catgactttt tcaagagtgc catgcccgaagggttatgtac aggaaagaac tatatttttc 300  
aaagatgacg ggaactacaa gacacgtgct gaagtcaagt ttgaaggatga tacccttggt 360  
aatagaatcg agttaaaaagg tattgatttt aaagaagatg gaaacattct tggacacaaa 420  
ttggaatata actataactc acacaatgta tacatcatgg cagacaaaca aaagaatgga 480  
atcaaagtta acttcaaaat tagacacaac attgaagatg gaagcgttca actagcagac 540  
cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga caaccattac 600  
ctgtccacac aatctgccct ttcgaaagat cccaacgaaa agagagacca catggtcctt 660  
cttgagtttg taacagctgc tgggattaca catggcatgg atgaactata caaataa 717

<210> 3  
<211> 225  
<212> PRT  
<213> Discosoma

<400> 3

Met Arg Ser Ser Lys Asn Val Ile Lys Glu Phe Met Arg Phe Lys Val  
1 5 10 15

Arg Met Glu Gly Thr Val Asn Gly His Glu Phe Glu Ile Glu Gly Glu  
20 25 30

Gly Glu Gly Arg Pro Tyr Glu Gly His Asn Thr Val Lys Leu Lys Val  
35 40 45

Thr Lys Gly Gly Pro Leu Pro Phe Ala Trp Asp Ile Leu Ser Pro Gln  
50 55 60

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Phe Gln Tyr Gly Ser Lys Val Tyr Val Lys His Pro Ala Asp Ile Pro  
65 70 75 80

Asp Tyr Lys Lys Leu Ser Phe Pro Glu Gly Phe Lys Trp Glu Arg Val  
85 90 95

Met Asn Phe Glu Asp Gly Gly Val Val Thr Val Thr Gln Asp Ser Ser  
100 105 110

Leu Gln Asp Gly Cys Phe Ile Tyr Lys Val Lys Phe Ile Gly Val Asn  
115 120 125

Phe Pro Ser Asp Gly Pro Val Met Gln Lys Lys Thr Met Gly Trp Glu  
130 135 140

Ala Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Lys Gly Glu  
145 150 155 160

Ile His Lys Ala Leu Lys Leu Lys Asp Gly Gly His Tyr Leu Val Glu  
165 170 175

Phe Lys Ser Ile Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Tyr  
180 185 190

Tyr Tyr Val Asp Ser Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr  
195 200 205

Thr Ile Val Glu Gln Tyr Glu Arg Thr Glu Gly Arg His His Leu Phe  
210 215 220

Leu  
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<210> 4  
<211> 678  
<212> DNA  
<213> Discosoma

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cacaataaccg taaagcttaa ggtaaccaag gggggacctt tgccatttgc ttgggatatt 180  
ttgtcaccac aatttcagta tggaagcaag gtatatgtca agcaccctgc cgacatacca 240  
gactataaaa agctgtcatt tcctgaagga tttaaatggg aaagggtcat gaactttgaa 300  
gacgggtggcg tcgttactgt aaccaggat tccagtttgc aggatggctg tttcatctac 360  
aagggtcaagt tcattggcgt gaactttcct tccgatggac ctgttatgca aaagaagaca 420  
atgggctggg aagccagcac tgagcgtttg taccctcgtg atggcgtgtt gaaaggagag 480  
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 <213> artificial sequence

<220>  
 <223> /note="Description of artificial sequence: mRFP1"

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Met Ala Ser Ser Glu Asp Val Ile Lys Glu Phe Met Arg Phe Lys Val  
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Arg Met Glu Gly Ser Val Asn Gly His Glu Phe Glu Ile Glu Gly Glu  
 20 25 30

Gly Glu Gly Arg Pro Tyr Glu Gly Thr Gln Thr Ala Lys Leu Lys Val  
 35 40 45

Thr Lys Gly Gly Pro Leu Pro Phe Ala Trp Asp Ile Leu Ser Pro Gln  
 50 55 60

Phe Gln Tyr Gly Ser Lys Ala Tyr Val Lys His Pro Ala Asp Ile Pro  
 65 70 75 80

Asp Tyr Leu Lys Leu Ser Phe Pro Glu Gly Phe Lys Trp Glu Arg Val  
 85 90 95

Met Asn Phe Glu Asp Gly Gly Val Val Thr Val Thr Gln Asp Ser Ser  
 100 105 110

Leu Gln Asp Gly Glu Phe Ile Tyr Lys Val Lys Leu Arg Gly Thr Asn  
 115 120 125

Phe Pro Ser Asp Gly Pro Val Met Gln Lys Lys Thr Met Gly Trp Glu  
 130 135 140

Ala Ser Thr Glu Arg Met Tyr Pro Glu Asp Gly Ala Leu Lys Gly Glu  
 145 150 155 160

Ile Lys Met Arg Leu Lys Leu Lys Asp Gly Gly His Tyr Asp Ala Glu  
 165 170 175

Val Lys Thr Thr Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Ala  
 180 185 190

Tyr Lys Thr Asp Ile Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr  
 195 200 205

# N3214PCT\_SEQ.LIST.

Thr Ile Val Glu Gln Tyr Glu Arg Ala Glu Gly Arg His Ser Thr Gly  
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Ala Gly Leu Tyr Lys  
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<210> 6  
 <211> 690  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> /note="Description of artificial sequence: mRFP1"

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 acccagaccg ccaagctgaa ggtgaccaag ggcggccccc tgcccttcgc ctgggacatc 180  
 ctgtcccctc agttccagta cggctccaag gcctacgtga agcaccgccg cgacatcccc 240  
 gactacttga agctgtcctt ccccgagggc ttcaagtggg agcgcgtgat gaacttcgag 300  
 gacggcgggc tggtgaccgt gaccaggac tcctccctgc aggacggcga gttcatctac 360  
 aaggtgaagc tgcgcggcac caacttcccc tccgacggcc ccgtaatgca gaagaagacc 420  
 atgggctggg aggcctccac cgagcggatg taccctgagg acggcgccct gaagggcgag 480  
 atcaagatga ggctgaagct gaaggacggc ggccactacg acgccgaggt caagaccacc 540  
 tacatggcca agaagcccggt gcagctgccc ggcgcctaca agaccgacat caagctggac 600  
 atcacctccc acaacgagga ctacaccatc gtggaacagt acgagcgcgc cgagggccgc 660  
 cactccaccg gcgccggcct gtacaagtaa 690

<210> 7  
 <211> 117  
 <212> PRT  
 <213> artificial sequence

<220>  
 <223> /note="Description of artificial sequence: VHH fragment of  
 fluorescent chromobody against GFP"

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Met Ala Asp Val Gln Leu Val Glu Ser Gly Gly Ala Leu Val Gln Pro  
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Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Val Asn  
 20 25 30

Arg Tyr Ser Met Arg Trp Tyr Arg Gln Ala Pro Gly Lys Glu Arg Glu  
 35 40 45

Trp Val Ala Gly Met Ser Ser Ala Gly Asp Arg Ser Ser Tyr Glu Asp

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

Val Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Asn Val Asn Val Gly Phe Glu Tyr Trp Gly Gln Gly Thr Gln  
100 105 110

Val Thr Val Ser Ser  
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<210> 8  
<211> 351  
<212> DNA  
<213> artificial sequence

<220>  
<223> /note="Description of artificial sequence: sequence encoding VHH  
fragment of fluorescent chromobody of SEQ ID NO: 7"

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caggctccag ggaaggagcg cgagtgggtc gcgggtatga gtagtgctgg tgatcgttca 180  
agttatgaag actccgtgaa gggccgattc accatctcca gagacgacgc caggaatacg 240  
gtgtatctgc aaatgaacag cctgaaacct gaggacacgg ccgtgtatta ctgtaatgtc 300  
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<210> 9  
<211> 117  
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fluorescent chromobody against GFP (mutant C92S)"

<400> 9

Met Ala Asp Val Gln Leu Val Glu Ser Gly Gly Ala Leu Val Gln Pro  
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Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Val Asn  
20 25 30

Arg Tyr Ser Met Arg Trp Tyr Arg Gln Ala Pro Gly Lys Glu Arg Glu  
35 40 45

Trp Val Ala Gly Met Ser Ser Ala Gly Asp Arg Ser Ser Tyr Glu Asp  
50 55 60

N3214PCT\_SEQ.LIST.

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

Val Tyr Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Ser Asn Val Asn Val Gly Phe Glu Tyr Trp Gly Gln Gly Thr Gln  
100 105 110

Val Thr Val Ser Ser  
115

<210> 10  
<211> 351  
<212> DNA  
<213> artificial sequence

<220>  
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caggctccag ggaaggagcg cgagtgggtc gcgggtatga gtagtgctgg tgatcgttca 180  
agttatgaag actccgtgaa gggccgattc accatctcca gagacgacgc caggaatacg 240  
gtgtatctgc aaatgaacag cctgaaacct gaggacacgg ccgtgtatta ctcgaatgtc 300  
aatgtgggct ttgagtactg gggccagggg acccaggtca ccgtctcctc a 351