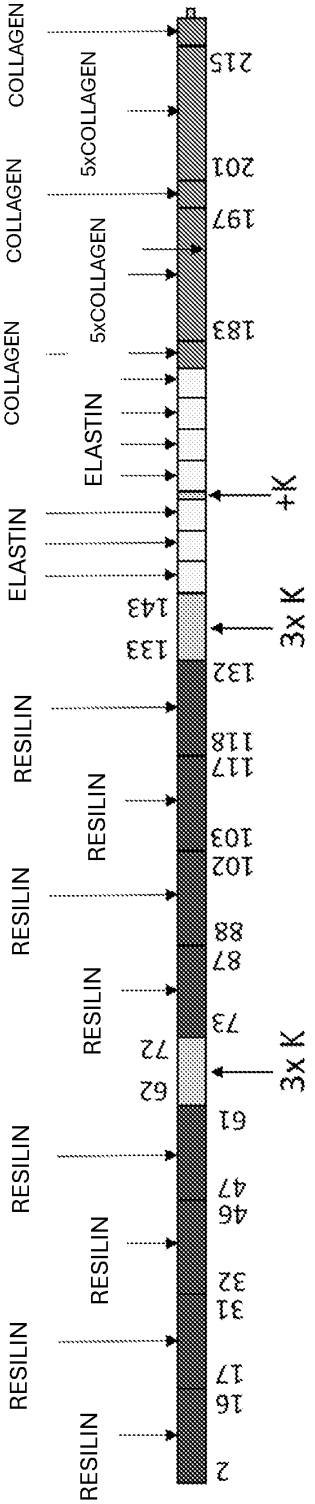


REC2z
219 aa

Fig.1

REC1f	CCAGTGCCAAGCTT**cat**ATGAGCGACACCTAC
REC1r	CCGGGGATCCTCTAGAGTCGACTTAACCCTT
REC2zf	GGCCAGTGCCAAGCTT**cat**ATGGGTGGAAGG
REC2zr	CCCGGGGATCCTCTAGAGTCGACTTAACCT
RE3r	CCCGGGGATCCTAGAGTCGACTTAACC
RE5f	CAGTGCCAAGC**a**TATGGGTGGCCGTCCGA
RE5r	CGGGGATCCTCTAGAGTCGACTTAGCCCG
RE6RGDr	CCGGGGATCCTCTAGAGTCGACTTAGCTGCT
RE7zr	CGGGGATCCTCTAGAGTCGACTTAACCCG
REC8zf	CGGCCAGTGCCAAGCTT**cat**ATGGGTGCGC
RE10zr	CCCGGGGATCCTCTAGAGTCGACTTAGCCA
REC11f	GGCCAGTGCCAAGCTT**cat**ATGGGTGGCCGT
EC13f	GCCAGTGCCAAGCTT**cat**ATGGTGCCGGGT
EJ17sek	GCGAGTAGCGTTCC
T7term	CTAGTTATTGCTCAGCGG
EJ17sek2	TGCTGGTGGGGCT
sekT7	TAATACGACTCACTATAGG
EJ17sek3R	ACCAGAGCCCGCA
EJ17sek4	CGTGCCTGCATTTG

Fig. 2

ATGGGTGGAAGGCCCTCAGATAGTTATGGGGCTCCGGGTGGAGGCAATGGTGGTCGTCCGTCGGAT
TCCTACGGCGCTCCGGGTGGCGGTAACGGCGGACGCCCAAGCGACAGCTATGGTGCCCCGGGC
GGTGGCAACGGCGGTCGTCCGAGCGACTCTTACGGCGCGCCAGGCGGCGGCAACGGCGGCAAG
GGTGGCAAAGGCGGTAAGGGTGGTGGGGGCAGACCGAGCGACTCTTATGGCGCTCCGGGTGGAG
GCAACGGTGGCCGTCCGAGCGATTCCTACGGCGCGCCGGGCGGTGGCAATGGCGGCCGTCCGT
CCGACAGCTATGGTGCCCCTGGCGGTGGCAATGGTGGTCGCCCAAGTGATAGCTACGGCGCGCCA
GGCGGTGGAAACGGTGGGAAAGGTGGTAAGGGCGGCAAAGGTGGCGTTCCGGGTGCTGGCGTTC
CGGGCGCGGGTGTTCCGGGTGCGGGTAAGGTGCCGGGCGCGGGCGTGCCGGGTGCCGGTGTCC
CGGGTGCGGGGGTGCCGGGCGCGGGTCCCAAGGGTCCGGGCGGTCCGGGTGGTCCGGGCGGT
CCGGGTGGTCCGGGTGGTCCGAAAGGTCCGGCAGGCCCGGCGGGTCCGGCAGGTCCGGCAGGT
CCGGCAGGTCCGAAAGGT**TAA**

Fig. 3

MGGRPSDSYGAPGGGNGGRPSDSYGAPGGGNGGRPSDSYGAPGGGNGGRPSDSYGAPGGGNGGK
GGKGGKGGGGRPSDSYGAPGGGNGGRPSDSYGAPGGGNGGRPSDSYGAPGGGNGGRPSDSYGAP
GGGNGGKGGKGGKGGVPGAGVPGAGVPGAGKVPGAGVPGAGVPGAGVPGAGPKGPGGPGGPGGP
GGPGGPKGPAGPAGPAGPAGPAGPKG

Fig. 4

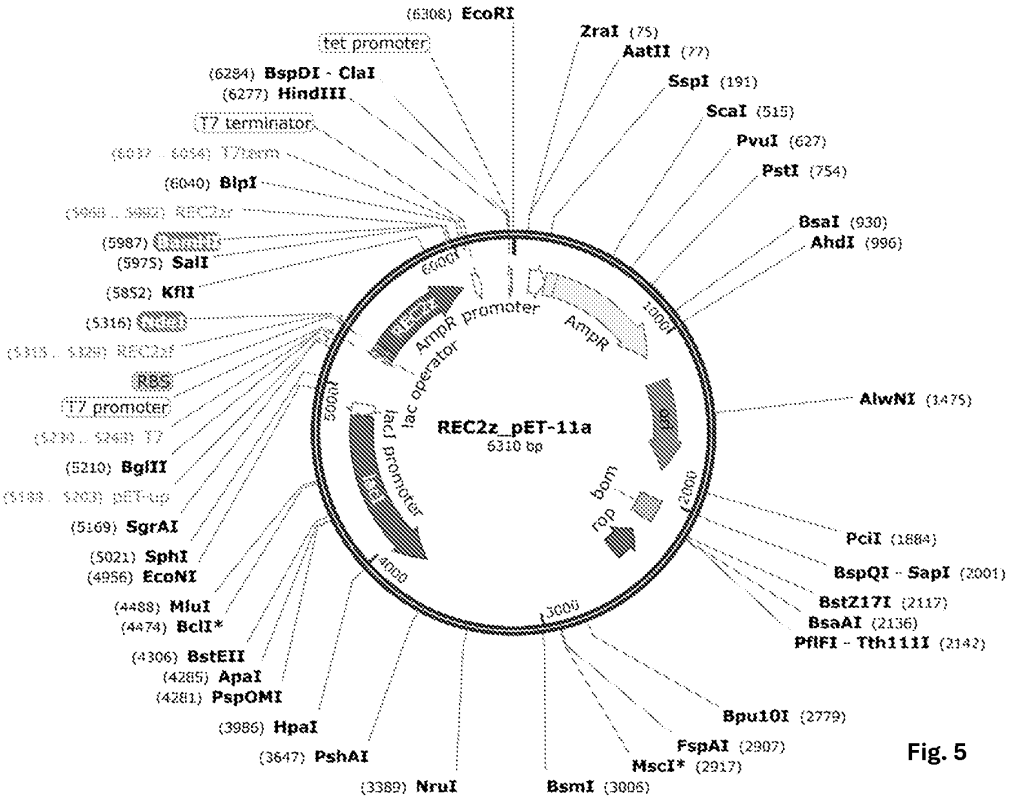

REC2z_pET-11a
5310 bp
(6308) EcoRI
ZraI (75)
AatII (77)
SspI (191)
ScaI (515)
PvuI (627)
PstI (754)
BsaI (930)
AhdI (996)
AlwNI (1475)
PciI (1884)
BspQI - SapI (2001)
BstZ17I (2117)
BsaAI (2136)
PflFI - Tth111I (2142)
Bpu10I (2779)
FspAI (2907)
MscI* (2917)
BsmI (3006)
(3389) NruI
(3647) PshAI
(3986) HpaI
(4281) PspOMI
(4285) ApaI
(4306) BstEII
(4474) BclI*
(4488) MluI
(4956) EcoNI
(5021) SphI
(5169) SgrAI
(5210) BglII
T7 promoter
RBS
(5316) NcoI
(5852) KflI
(5975) SalI
(5987) XhoI
(6040) BlpI
T7 terminator
(6277) HindIII
(6284) BspDI - ClaI
tet promoter
AmpR promoter
lac operator
AmpR
lacI promoter
lacI
ori
bom
rop

Fig. 5

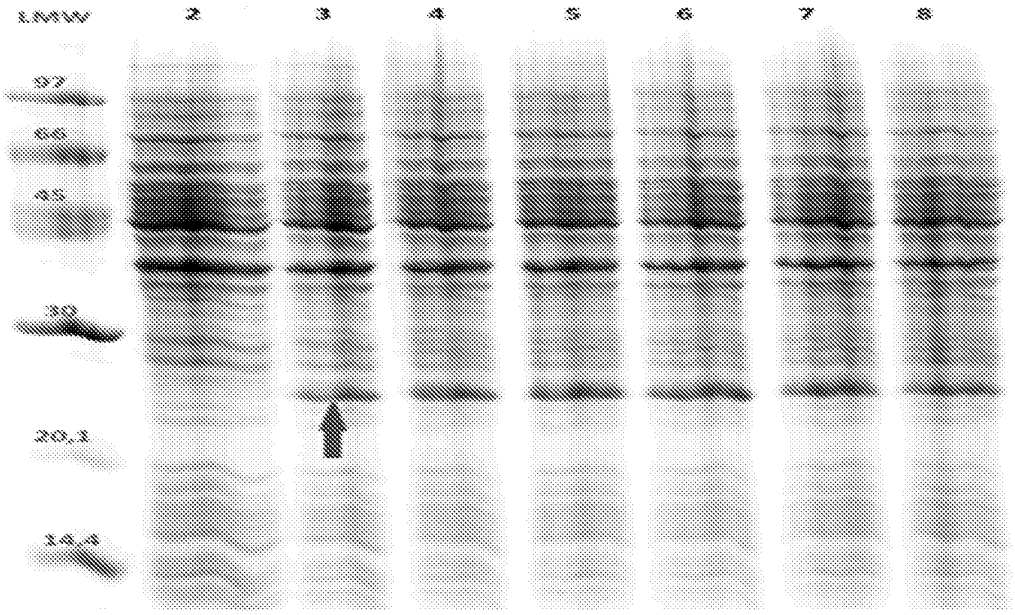

LMW
2
3
4
5
6
7
8
97
66
45
30
20.1
14.4

Fig. 6A

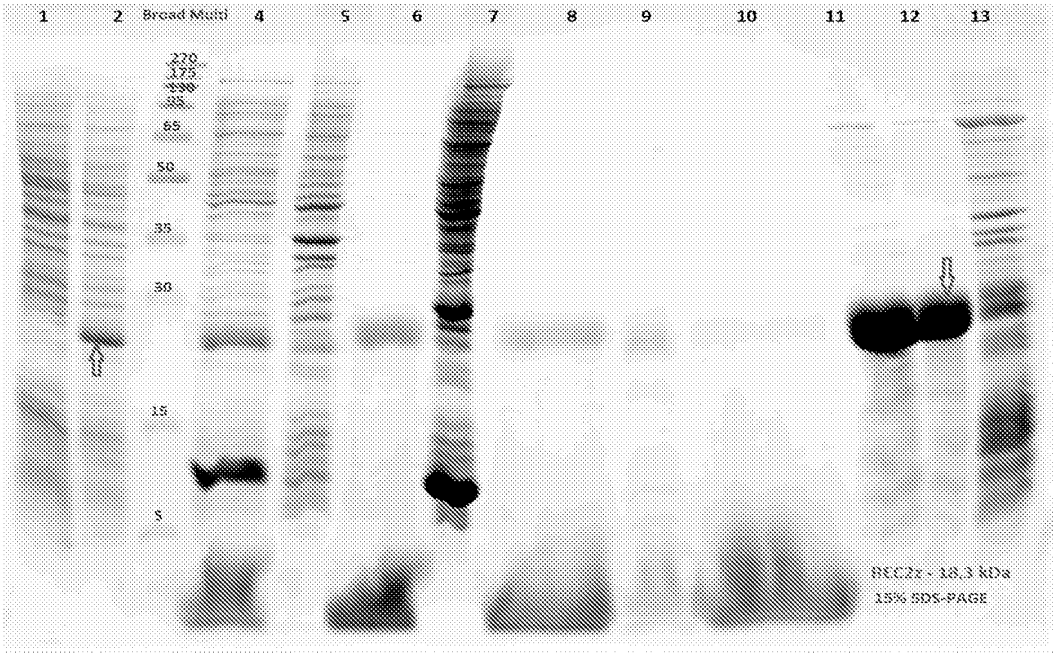

1
2
Broad Multi
4
5
6
7
8
9
10
11
12
13
270
65
50
35
30
15
5
REC2z - 18,3 kDa
15% SDS-PAGE

Fig. 6B

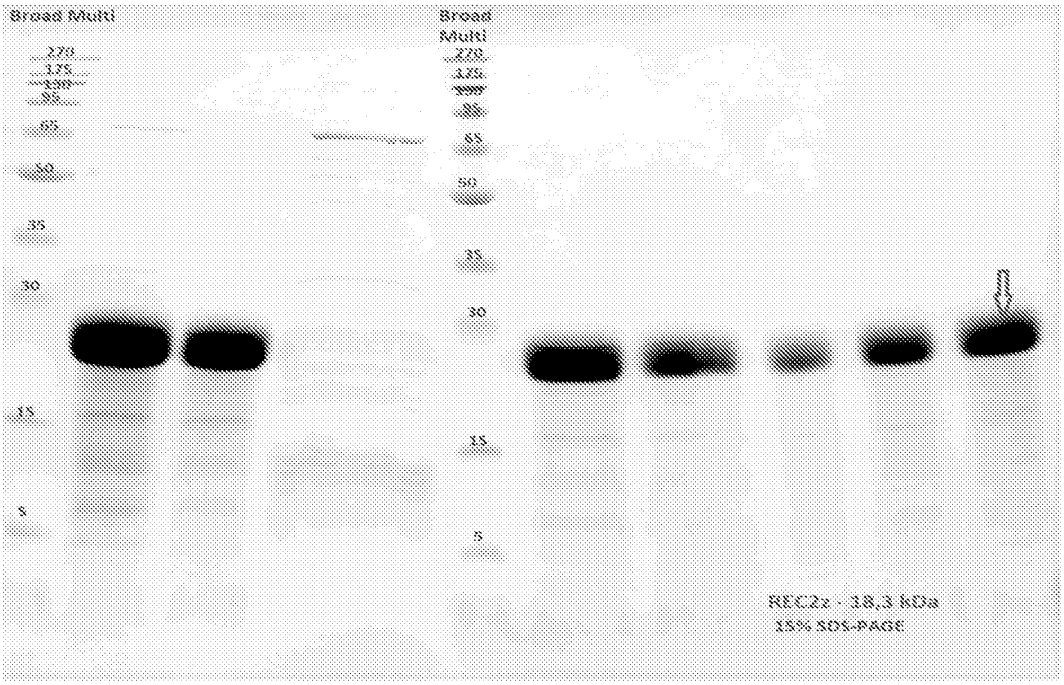

Broad Multi
270
65
50
35
30
15
5
Broad Multi
270
65
50
35
30
15
5
REC2z - 38,3 kDa
15% SDS-PAGE

Fig. 6C

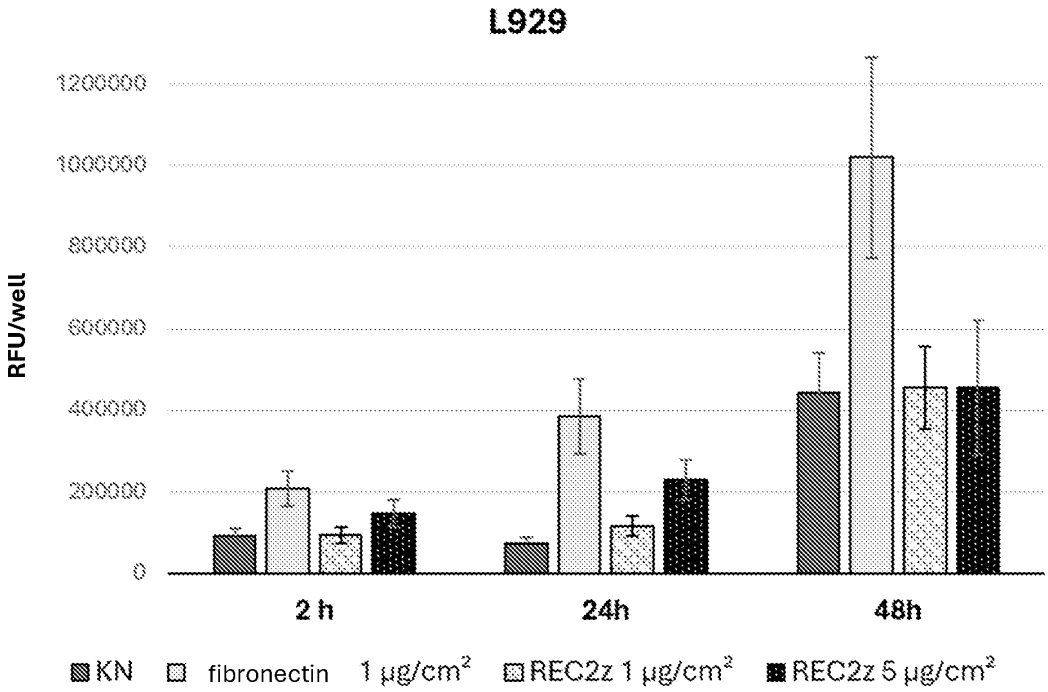

L929
RFU/well
1200000
1000000
800000
600000
400000
200000
0
2 h
24h
48h
KN
fibronectin 1 µg/cm²
REC2z 1 µg/cm²
REC2z 5 µg/cm²

Fig. 7

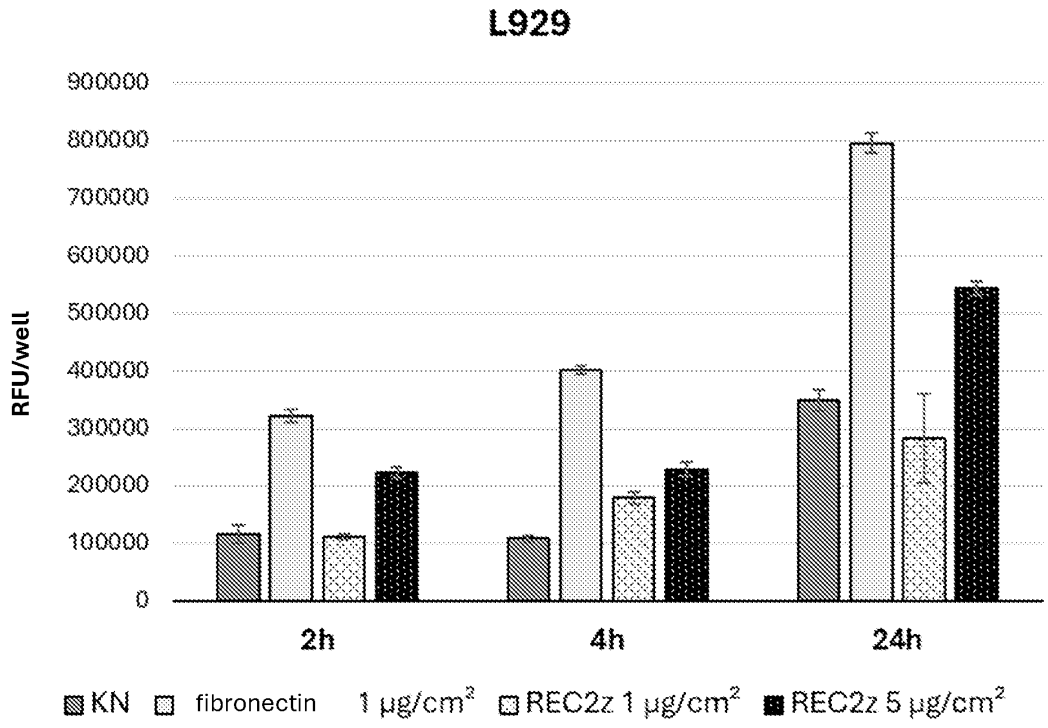

L929
RFU/well
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
2h
4h
24h
KN
fibronectin 1 µg/cm²
REC2z 1 µg/cm²
REC2z 5 µg/cm²

Fig. 8

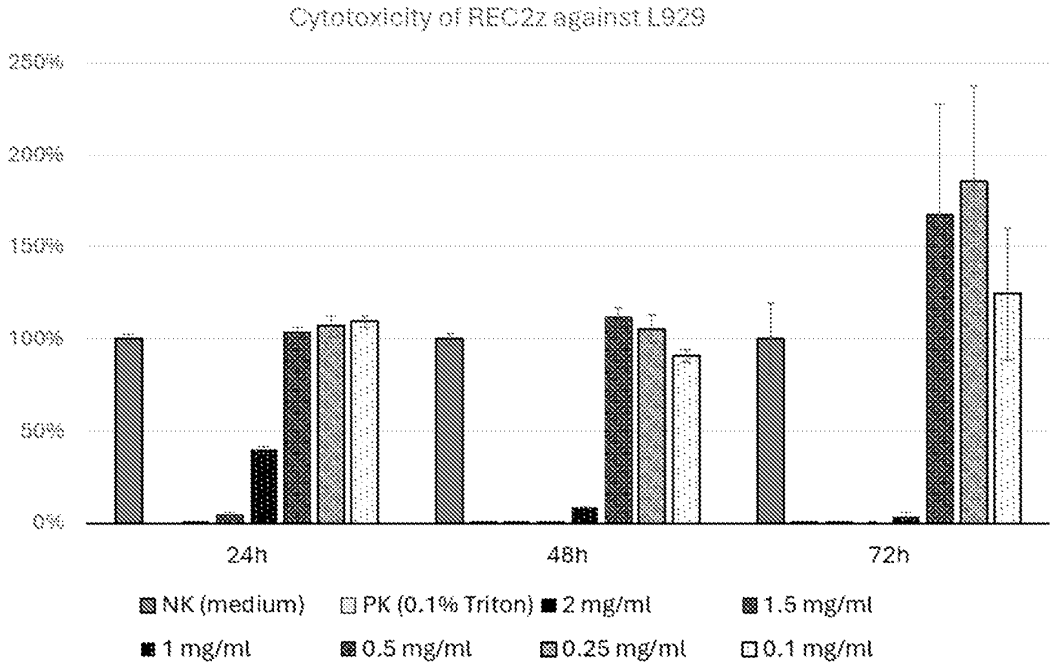

Cytotoxicity of REC2z against L929
250%
200%
150%
100%
50%
0%
24h
48h
72h
NK (medium)
PK (0.1% Triton)
2 mg/ml
1.5 mg/ml
1 mg/ml
0.5 mg/ml
0.25 mg/ml
0.1 mg/ml

Fig. 9

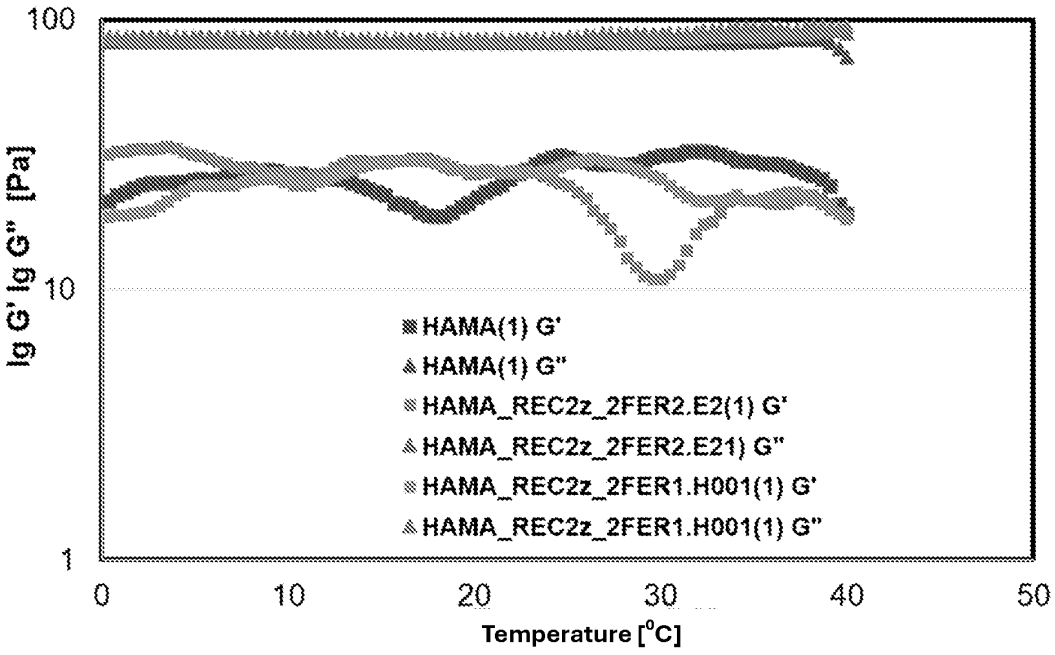

100
10
1
lg G' lg G" [Pa]
0
10
20
30
40
50
Temperature [°C]
HAMA(1) G'
HAMA(1) G"
HAMA_REC2z_2FER2.E2(1) G'
HAMA_REC2z_2FER2.E21) G"
HAMA_REC2z_2FER1.H001(1) G'
HAMA_REC2z_2FER1.H001(1) G"

Fig. 10

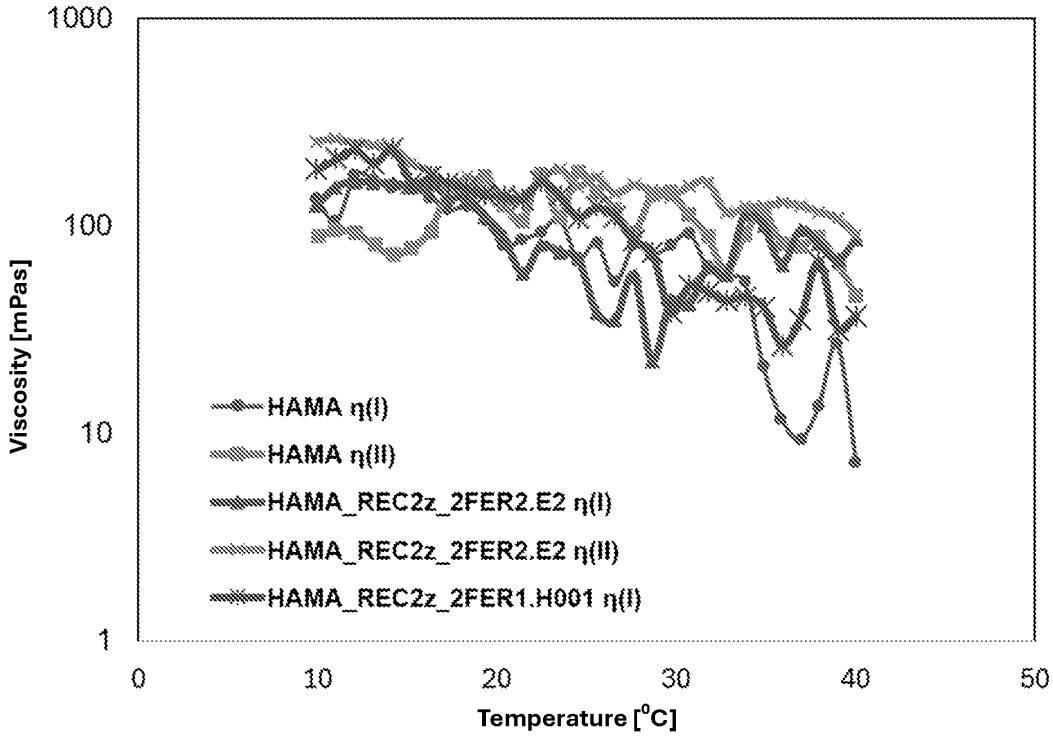

1000
100
10
1
Viscosity [mPas]
0
10
20
30
40
50
Temperature [°C]
HAMA η(I)
HAMA η(II)
HAMA_REC2z_2FER2.E2 η(I)
HAMA_REC2z_2FER2.E2 η(II)
HAMA_REC2z_2FER1.H001 η(I)

Fig. 11

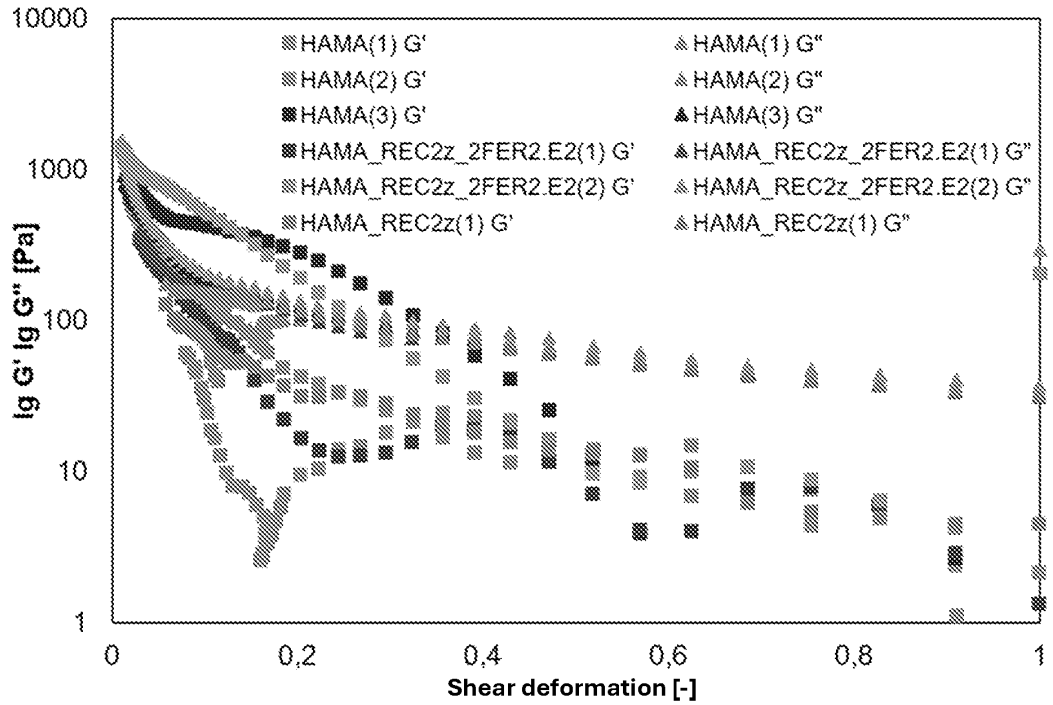

10000
1000
100
10
1
lg G' lg G" [Pa]
0
0,2
0,4
0,6
0,8
1
Shear deformation [-]
HAMA(1) G'
HAMA(2) G'
HAMA(3) G'
HAMA_REC2z_2FER2.E2(1) G'
HAMA_REC2z_2FER2.E2(2) G'
HAMA_REC2z(1) G'
HAMA(1) G"
HAMA(2) G"
HAMA(3) G"
HAMA_REC2z_2FER2.E2(1) G"
HAMA_REC2z_2FER2.E2(2) G"
HAMA_REC2z(1) G"

Fig. 12

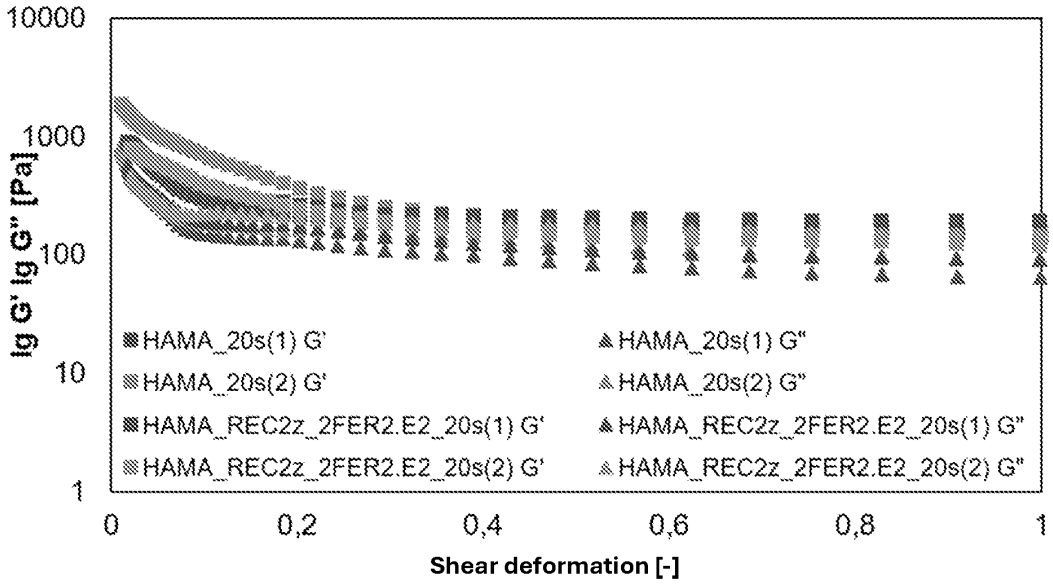

10000
1000
100
10
1
lg G' lg G" [Pa]
0
0,2
0,4
0,6
0,8
1
Shear deformation [-]
HAMA_20s(1) G'
HAMA_20s(1) G"
HAMA_20s(2) G'
HAMA_20s(2) G"
HAMA_REC2z_2FER2.E2_20s(1) G'
HAMA_REC2z_2FER2.E2_20s(1) G"
HAMA_REC2z_2FER2.E2_20s(2) G'
HAMA_REC2z_2FER2.E2_20s(2) G"

Fig. 13

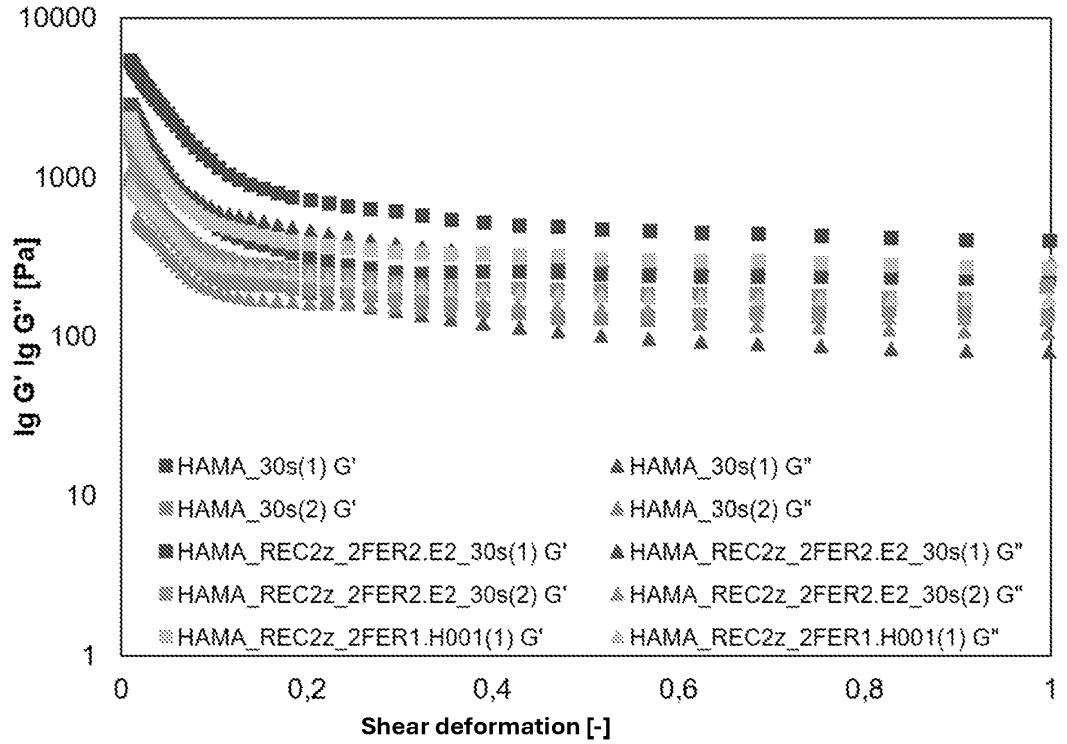

10000
1000
100
10
1
lg G' lg G" [Pa]
0
0,2
0,4
0,6
0,8
1
Shear deformation [-]
HAMA_30s(1) G'
HAMA_30s(1) G"
HAMA_30s(2) G'
HAMA_30s(2) G"
HAMA_REC2z_2FER2.E2_30s(1) G'
HAMA_REC2z_2FER2.E2_30s(1) G"
HAMA_REC2z_2FER2.E2_30s(2) G'
HAMA_REC2z_2FER2.E2_30s(2) G"
HAMA_REC2z_2FER1.H001(1) G'
HAMA_REC2z_2FER1.H001(1) G"

Fig. 14