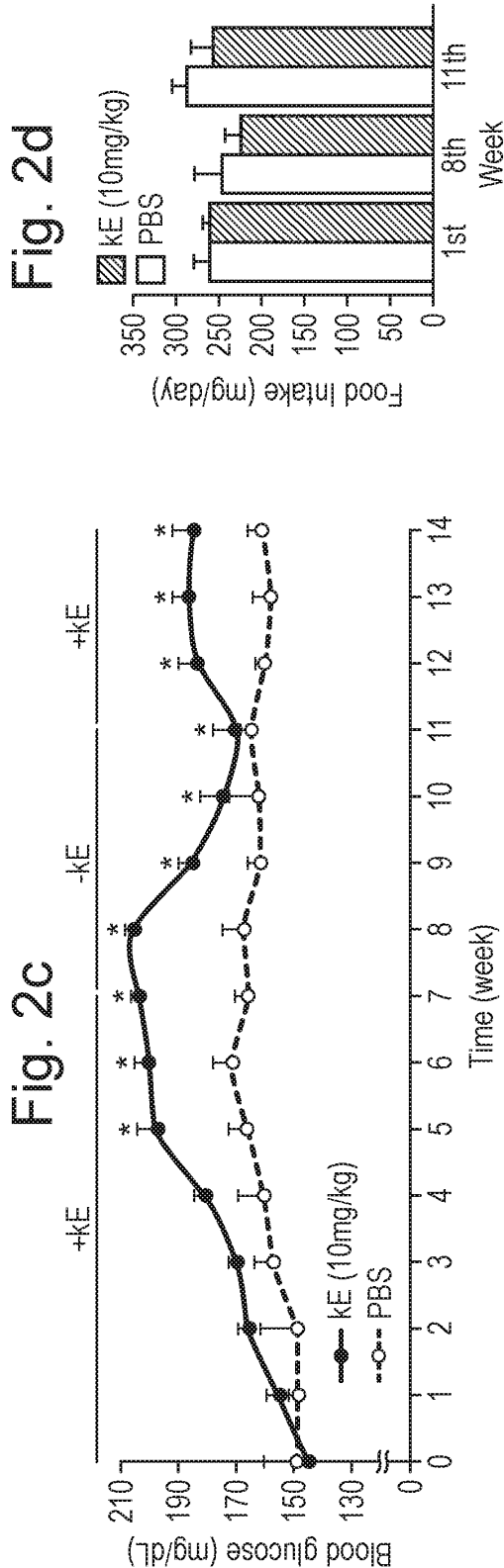
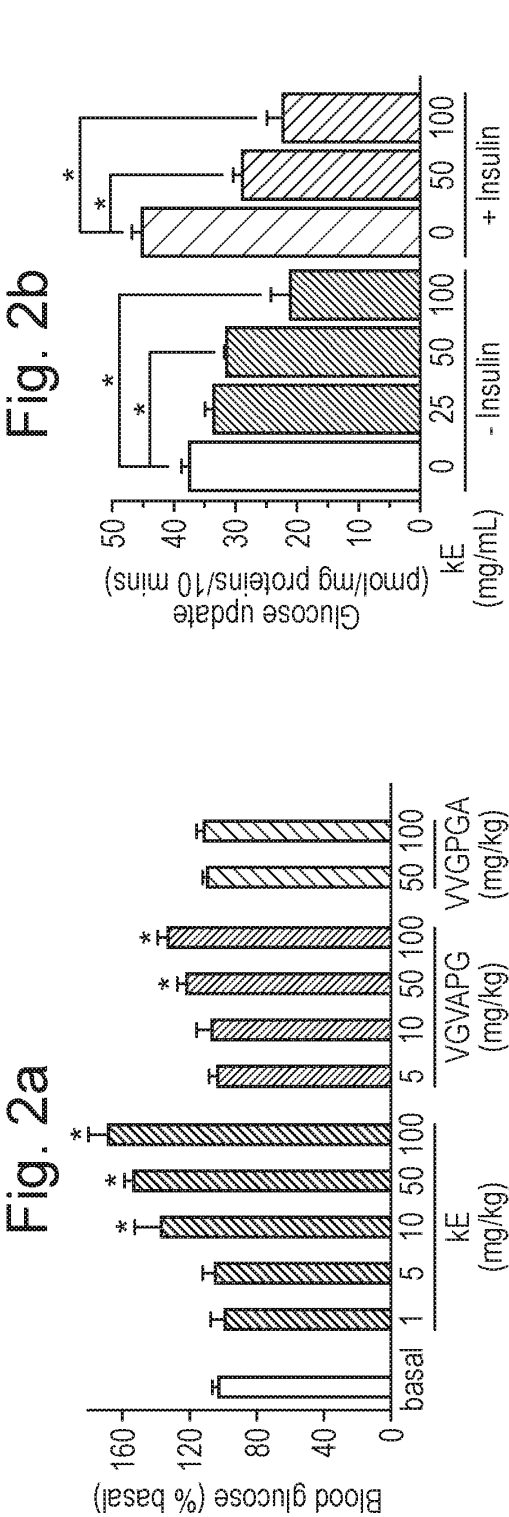


Fig. 1a

|         |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   |     |
|---------|-------------------------------|----|---|---|----|---|---|---|---|-------|---|---|---|---|------|---|------|---|---|---|-----|
| Primate |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   |     |
| 2e      |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   |     |
| 1e      | amino acid sidechain nonpolar |    |   |   |    |   |   |   |   | polar |   |   |   |   | acid |   | base |   |   |   |     |
|         | G                             | A  | V | I | L  | M | F | W | P | S     | T | C | Y | N | Q    | D | E    | R | H | K |     |
| G       |                               | 1  |   |   |    |   |   |   |   | 11    |   |   |   |   |      |   |      |   |   |   | 12  |
| A       |                               | 2  |   |   |    |   |   |   |   | 5     |   |   |   |   |      |   |      |   |   |   | 7   |
| V       |                               | 29 |   |   |    |   |   |   | 1 |       |   |   |   |   |      |   |      |   |   |   | 30  |
| I       |                               |    |   | 1 |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 1   |
| L       |                               |    | 1 |   |    |   |   |   |   |       |   |   |   |   |      |   | 1    |   |   |   | 2   |
| M       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 0   |
| F       |                               |    |   |   | 10 |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 10  |
| W       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 0   |
| P       | 1                             |    |   |   |    |   |   |   |   |       |   |   |   |   | 4    |   |      |   |   |   | 5   |
| S       |                               |    |   |   |    |   |   |   | 2 | 10    | 3 |   |   |   |      |   |      |   |   |   | 15  |
| T       | 4                             |    |   | 1 |    |   |   |   |   |       | 1 |   |   |   |      | 1 |      |   |   |   | 7   |
| C       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 0   |
| Y       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   | 10   |   |   |   | 10  |
| N       |                               |    |   |   | 1  |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 1   |
| Q       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 0   |
| D       | 2                             |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   | 1 | 3   |
| E       |                               | 3  |   |   |    |   |   |   |   |       | 3 |   |   |   |      |   |      |   |   |   | 6   |
| R       |                               |    |   |   |    |   |   |   |   | 1     |   |   |   |   |      |   |      |   |   |   | 1   |
| H       |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   | 0   |
| K       |                               |    |   |   |    |   |   |   |   |       |   | 1 |   |   |      |   |      |   |   |   | 1   |
| 111     |                               |    |   |   |    |   |   |   |   |       |   |   |   |   |      |   |      |   |   |   |     |
|         | 7                             | 35 | 1 | 2 | 11 | 0 | 0 | 0 | 3 | 27    | 7 | 1 | 0 | 4 | 1    | 0 | 11   | 0 | 0 | 1 | 111 |

Fig. 1b

|        |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    |    |
|--------|-------------------------------|----|---|----|---|---|---|---|---|---|-------|---|---|---|---|------|---|------|---|----|----|
| Rodent |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    |    |
| 2e     |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    |    |
| 1e     | amino acid sidechain nonpolar |    |   |    |   |   |   |   |   |   | polar |   |   |   |   | acid |   | base |   |    |    |
|        | G                             | A  | V | I  | L | M | F | W | P | S | T     | C | Y | N | Q | D    | E | R    | H | K  |    |
| G      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| A      |                               | 17 |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 17 |
| V      |                               | 1  |   |    |   |   |   |   |   |   |       |   |   |   |   | 3    |   |      |   |    | 4  |
| I      |                               |    | 2 |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 2  |
| L      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| M      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| F      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| W      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| P      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| S      |                               |    |   |    |   |   |   |   |   | 1 |       |   |   |   |   |      |   |      |   |    | 1  |
| T      |                               |    |   |    |   |   |   |   | 1 |   |       |   |   |   |   |      |   |      |   |    | 1  |
| C      |                               |    |   |    |   |   |   |   | 1 |   |       |   |   |   |   | 2    |   |      |   |    | 3  |
| Y      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| N      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| Q      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| D      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| E      |                               | 2  |   |    |   |   |   |   |   |   | 2     |   |   |   |   |      |   |      |   |    | 4  |
| R      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| H      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
| K      |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   |    | 0  |
|        |                               |    |   |    |   |   |   |   |   |   |       |   |   |   |   |      |   |      |   | 32 |    |
|        |                               | 0  | 0 | 20 | 2 | 0 | 0 | 0 | 0 | 2 | 1     | 0 | 2 | 0 | 0 | 0    | 5 | 0    | 0 | 0  | 32 |



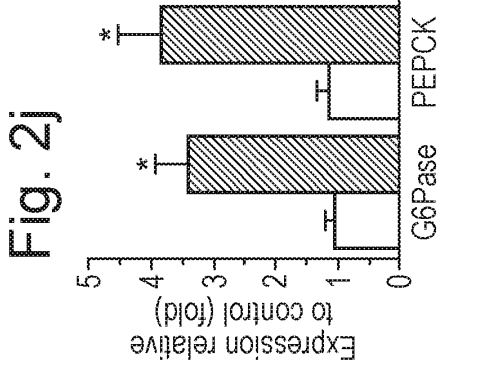
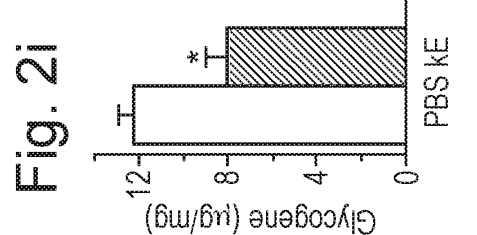
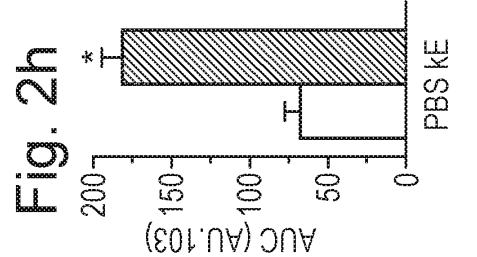
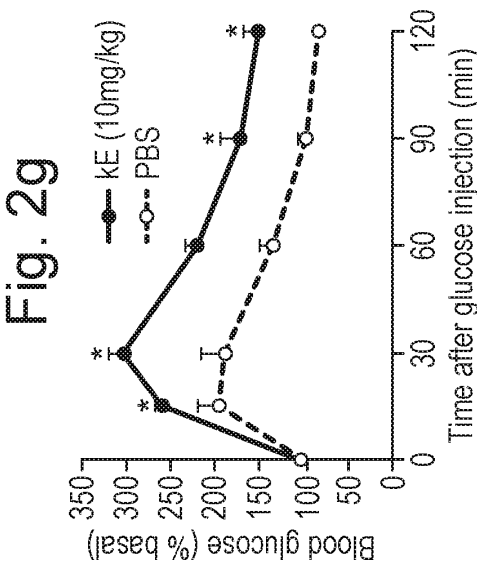
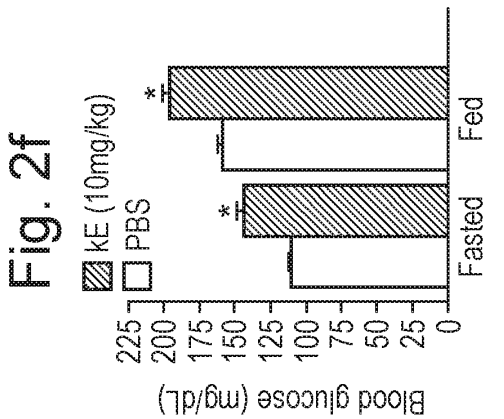
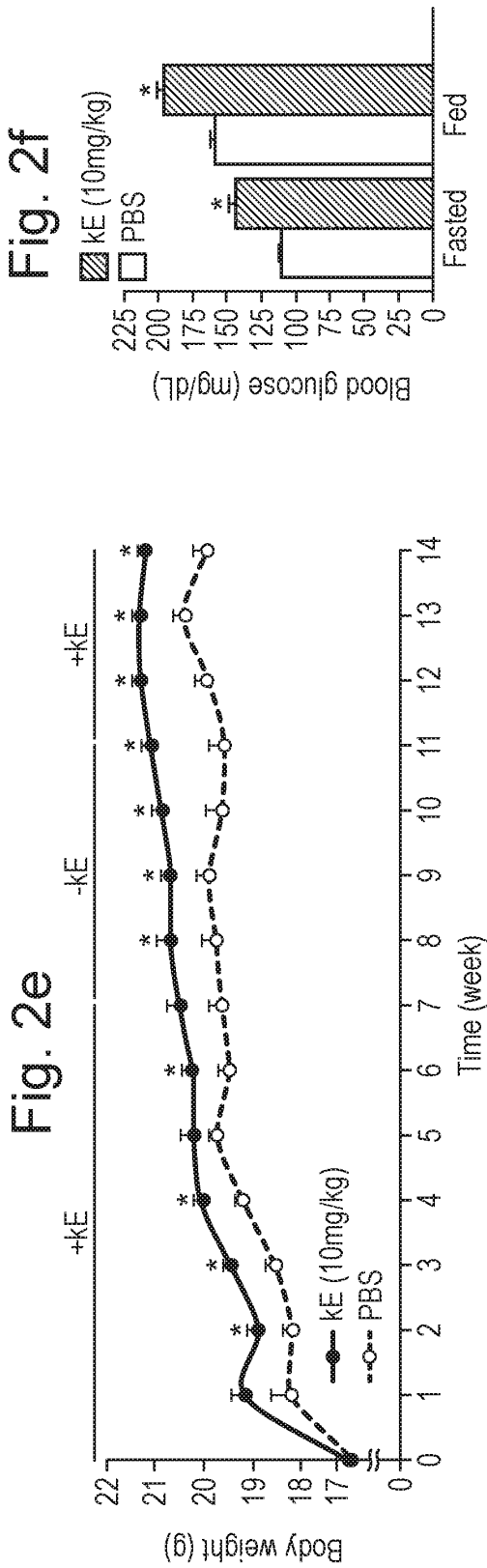


Fig. 3

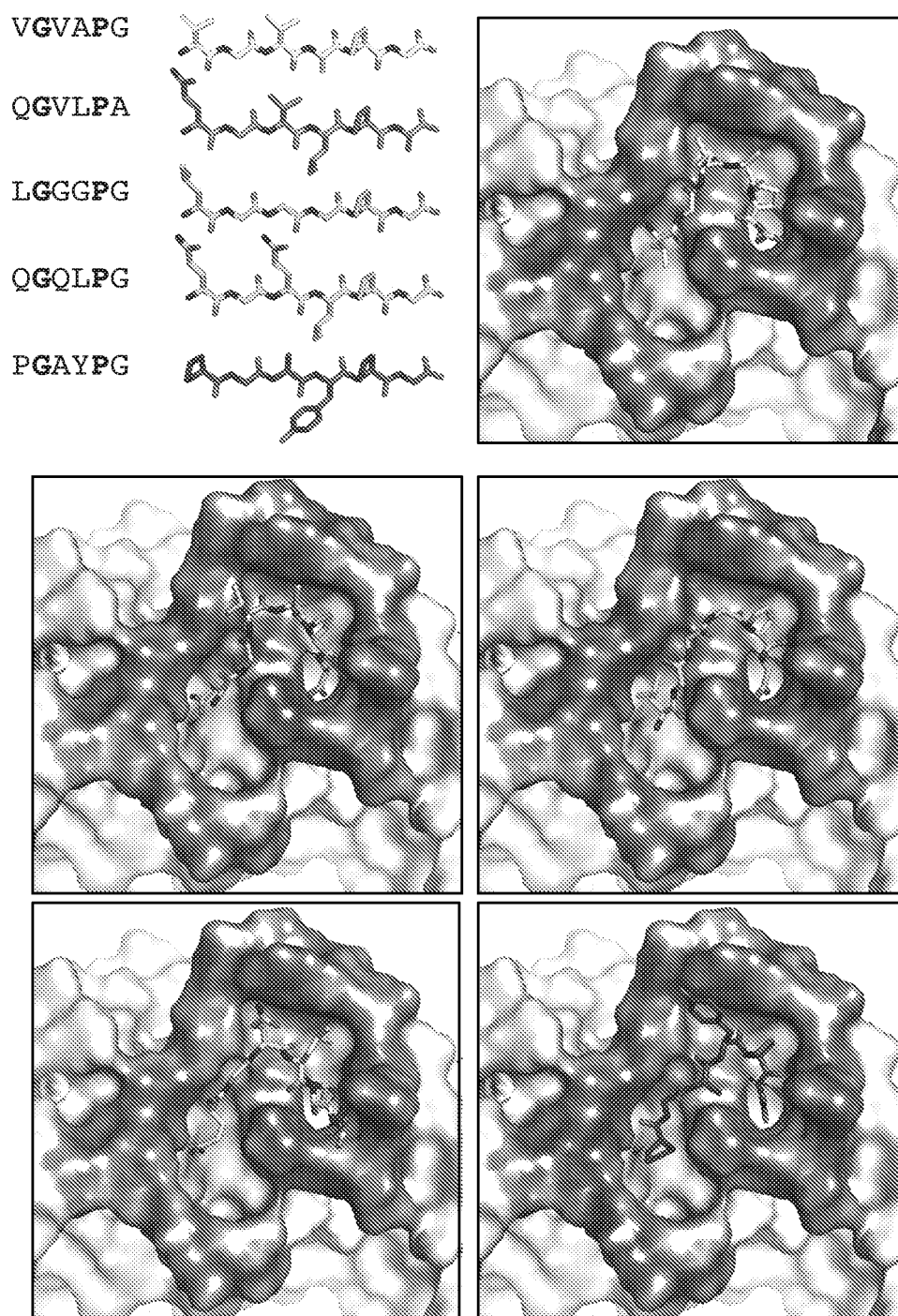


Fig. 4a

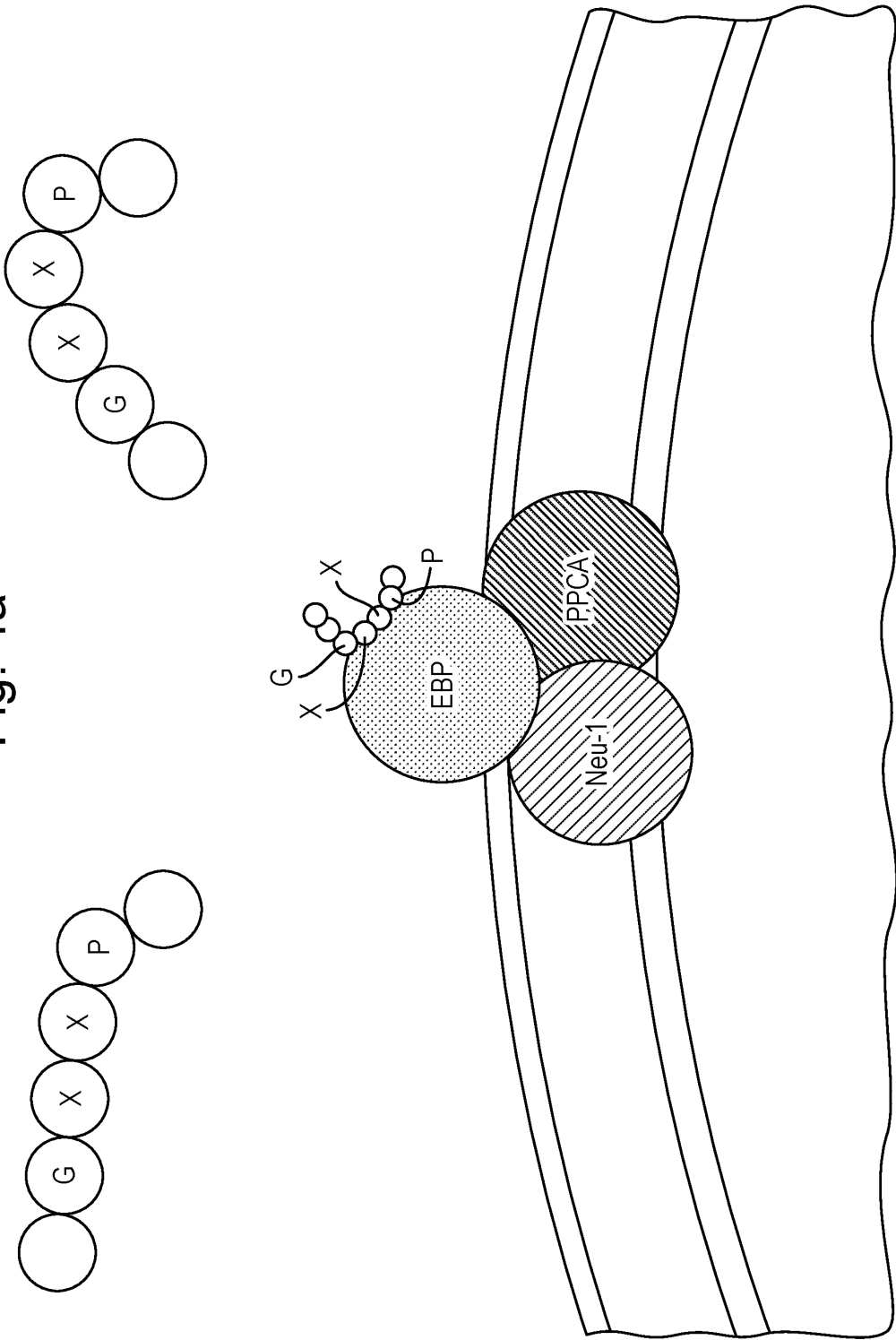


Fig. 4b

Elastogenesis

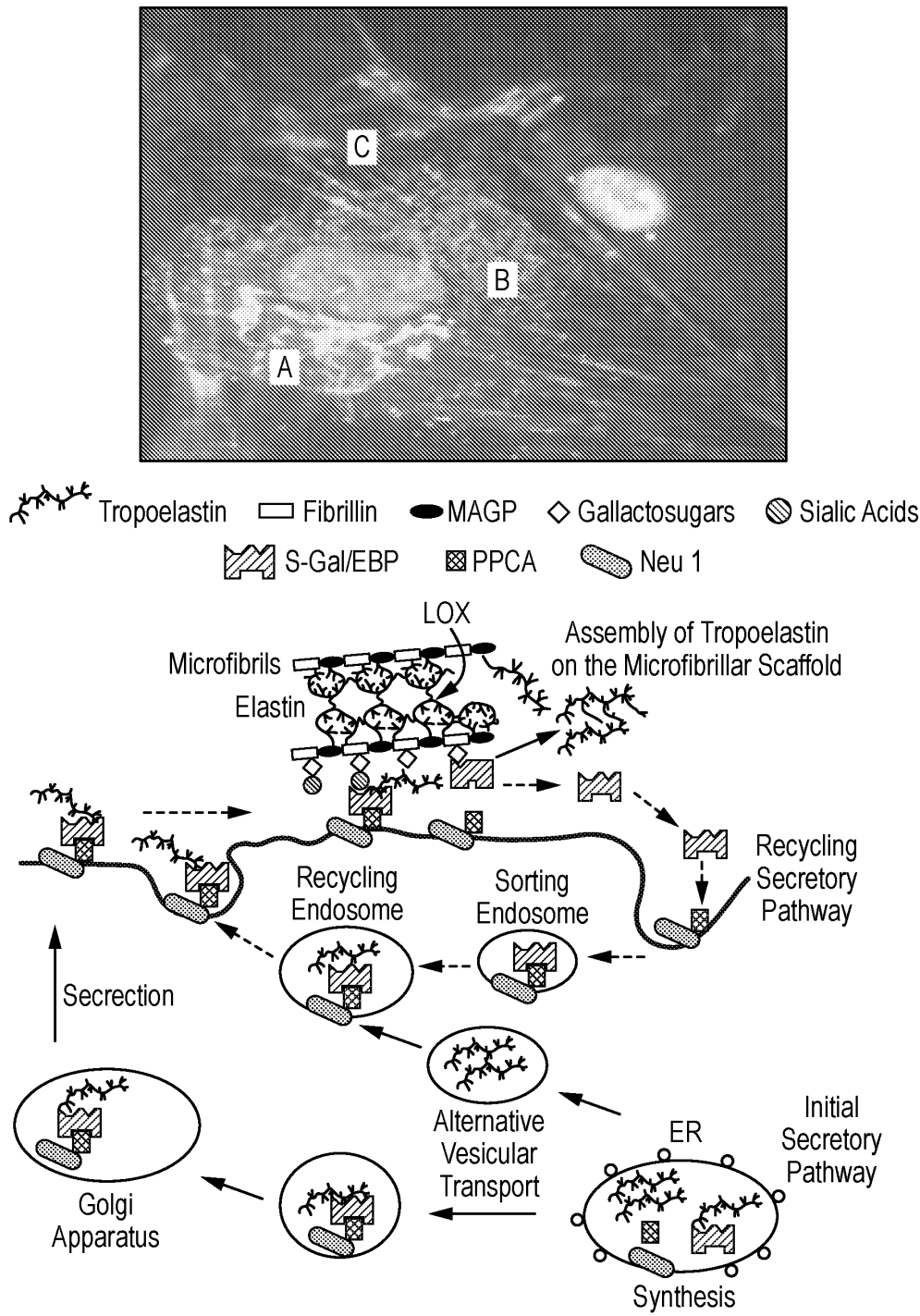
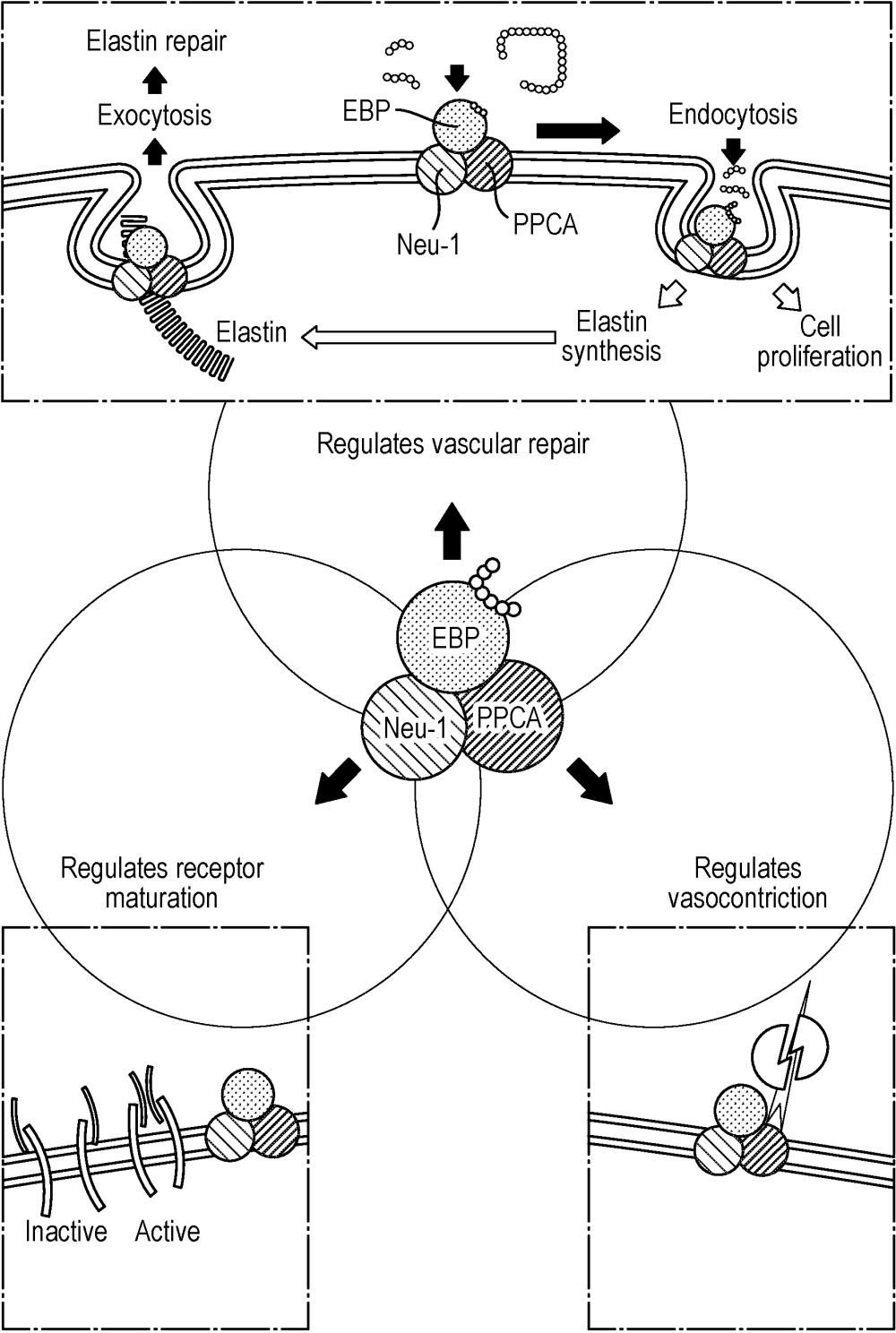


Fig. 4c



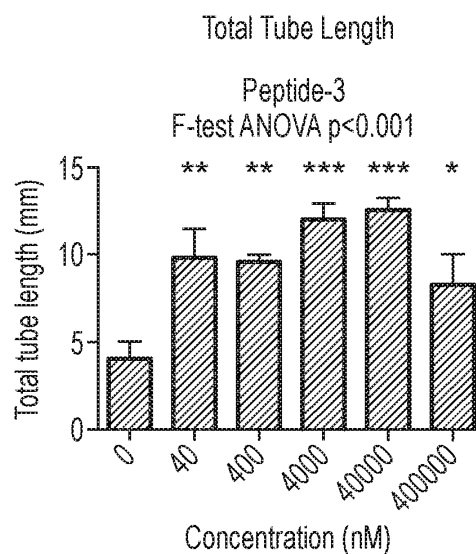
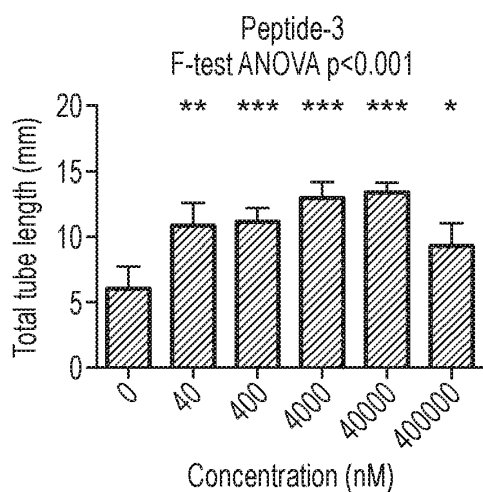
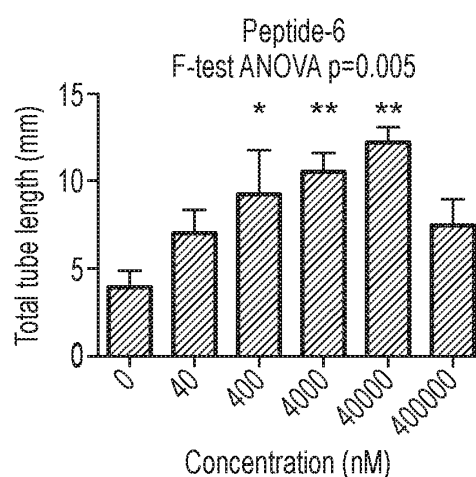
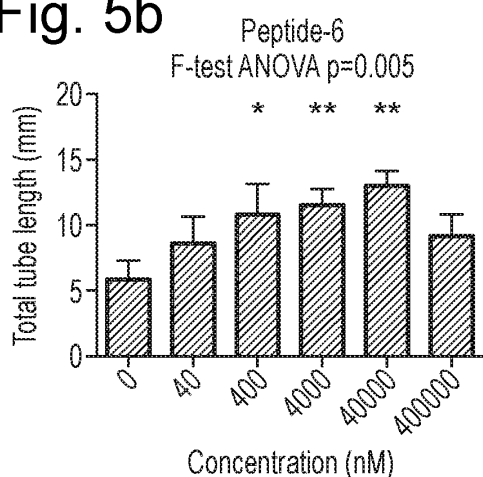
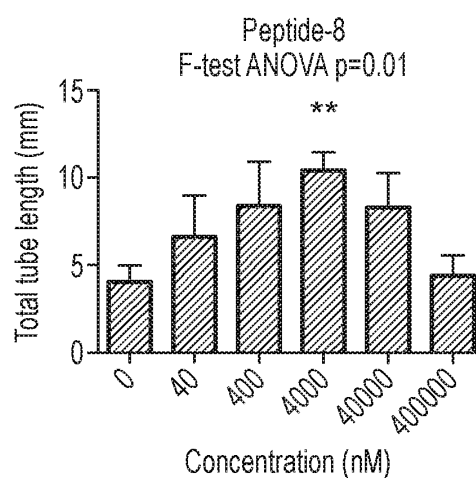
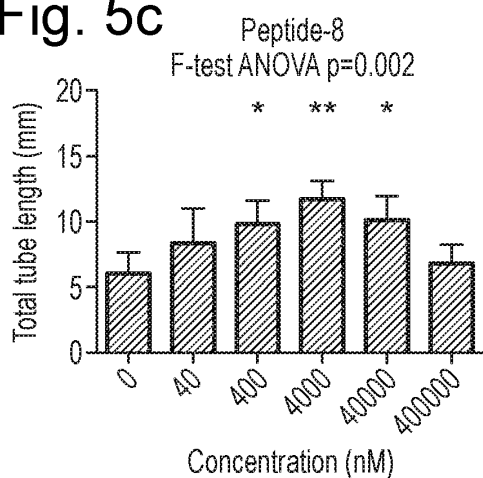
**Fig. 5a** Total Tube Length**Fig. 5b****Fig. 5c**

Fig. 6

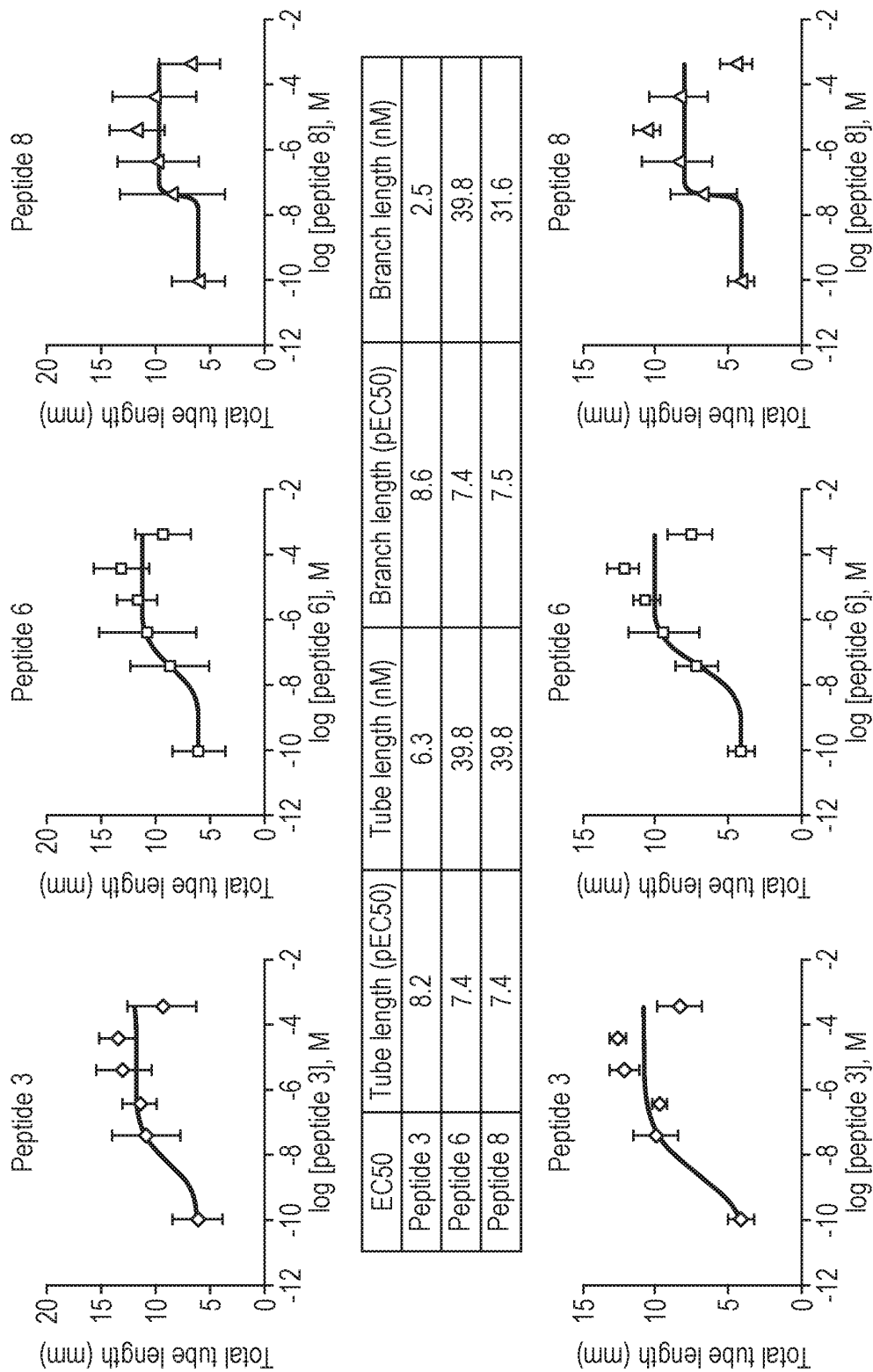


Fig. 7a

|         | C-peptide Allignments           |           |  |                     |
|---------|---------------------------------|-----------|--|---------------------|
|         |                                 | PG domain |  | Pentapeptide domain |
| Human   | EAEDLQVGQVELGGGPGAGSLQPLALEGSLQ |           |  |                     |
| Mouse 1 | EVEDPQVEQLELGGSP--GDLQTLALEVARQ |           |  |                     |
| Mouse 2 | EVEDPQVAQLELGGGPGAGDLQTLALEVAQQ |           |  |                     |
| Rat 1   | EVEDPQVPQLELGGGPEAGDLQTLALEVARQ |           |  |                     |
| Rat 2   | EVEDPQVAQLELGGGPGAGDLQTLALEVARQ |           |  |                     |

Fig. 7b

