**Structures of synthesized peptides, the chelator DOTA and myristic acid**

Peptides were synthesized as described in the supplemental methods section. Schematic drawings of the synthesized peptides are shown in Figure S3 below. DOTA coupled scavenger peptides (Figure S1 A-D and I) were used for radiolabelling (68Ga for positron emission tomography (PET) analysis and 177Lu for serum stability analysis). Schematic drawing of MG-H1 modified scavenger peptides synthesized as LC-MS/MS standards are shown in Figure S1 E-H. The schematic drawing of the acetylated pentapeptides used is shown in J while X was replaced with one of each of the canonical amino acids (Ala, Arg, Asn, Asp, Cys, Gln, Glu, Gly, His, Ile, Leu, Lys, Met, Phe, Pro, Ser, Thr, Trp, Tyr, Val) . The structure of DOTA and myristic acid is shown in K and L, respectively.

**Figure S1:** Schematic drawing of additional peptides, the chelator DOTA and myristic acid.

**Exact theoretical mass and mass determined experimentally by LC-MS for synthesized peptides**

|  |  |  |
| --- | --- | --- |
| **Peptide** | **exact mass theoretical** | **experimental** |
| CycK(Myr)R4E  | [m+2H]2+ = 546.8774 | [m+2H]2+ = 546.8983 |
| CycR4E | [m+H]+ = 745.4543 | [m+H]+ = 745.5060 |
| GERP10 | [m+4H]4+ = 1103.5547 | [m+4H]4+ = 1103.5551 |
| CycK(DOTA)K(Myr)R4E | [m+2H]2+ = 804.0150 | [m+2H]2+ =804.0287 |
| CycK(DOTA)R4E | [m+H]+ = 1268.7294 | [m+H]+ = 1268.8356 |
| K(DOTA)GERP10 | [m+4H]+ = 1232.1235 | [m+4H]+ =1232.1245  |
| K(DOTA)K(Myr)R4E  | [m+2H]2+ = 813.0203 | [m+2H]2+ = 813.0269 |
| CycK(Myr)R3MG-H1 | [m+H]+ = 1146.5820 | [m+H]+ = 1146.6365 |
| CycK(Myr)R2MG-H1RE | [m+H]+ = 1146.5820 | [m+H]+ = 1146.7676 |
| CycK(Myr)RMG-H1R2E | [m+H]+ = 1146.5820 | [m+H]+ = 1146.7585 |
| CycK(Myr)MG-H1R3E | [m+H]+ = 1146.5820 | [m+H]+ = 1146.7596 |
| CycK(DOTA)K(Myr)MG-H14E | [m+H]+ = 1823.0650 | [m+H]+ = 1823.1533 |
| AARAA | [m+H]+ = 501.2780 | [m+H]+ = 501.3151 |
| ACRAA | [m+H]+ = 533.2500 | [m+H]+ = 533.2499 |
| ADRAA | [m+H]+ = 545.2678 | [m+H]+ = 545.3080 |
| AERAA | [m+H]+ = 559.2834 | [m+H]+ = 559.2836 |
| AFRAA | [m+H]+ = 577.3093 | [m+H]+ = 577.3120 |
| AGRAA | [m+H]+ = 487.2623 | [m+H]+ = 487.2617 |
| AHRAA | [m+H]+ = 567.2998 | [m+H]+ = 567.3421 |
| AIRAA | [m+H]+ = 543.3249 | [m+H]+ = 543.3240 |
| AKRAA | [m+H]+ = 558.3358 | [m+H]+ = 558.3773 |
| ALRAA | [m+H]+ = 543.3249 | [m+H]+ = 543.3643 |
| AMRAA | [m+H]+ = 561.2813 | [m+H]+ = 561.2812 |
| ANRAA | [m+H]+ = 544.2838 | [m+H]+ = 544.2845 |
| APRAA | [m+H]+ = 527.2936 | [m+H]+ = 527.2930 |
| AQRAA | [m+H]+ = 558.2994 | [m+H]+ = 558.2990 |
| ARRAA | [m+H]+ = 586.3420 | [m+H]+ = 586.3419 |
| ASRAA | [m+H]+ = 517.2729 | [m+H]+ = 517.2736 |
| ATRAA | [m+H]+ = 531.2885 | [m+H]+ = 531.2879 |
| AVRAA | [m+H]+ = 529.3093 | [m+H]+ = 529.3096 |
| AWRAA | [m+H]+ = 616.3202 | [m+H]+ = 616.3198 |
| AYRAA | [m+H]+ = 593.3042 | [m+H]+ = 593.3045 |