まとめ

Expasyの比較

Ck-CH1-Hinge-Ch2-CH3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse Ck-IgG1 | 47500.41 | 6.03 | ­39.93 | 64.51 | -0.440 |
| Mouse Ck-IgG2a | 48278.44 | 6.29 | 46.32 | 69.02 | -0.439 |
| Mouse Ck-IgG2b | 48399.45 | 6.40 | 47.72 | 70.68 | -0.403 |
| Mouse Ck-IgG3 | 48188.33 | 7.24 | 45.14 | 70.39 | -0.426 |
| Rabbit Cka-IgG | 46528.55 | 7.92 | 40.85 | 69.04 | -0.360 |
| Rabbit Ckb-IgG | 46551.52 | 7.13 | 48.66 | 70.02 | -0.361 |

CH1-Hinge-CH2-CH3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse IgG1 | 35740.55 | 6.33 | 36.84 | 67.87 | -0.348 |
| Mouse IgG2a | 36518.57 | 6.82 | 45.34 | 73.75 | -0.348 |
| Mouse IgG2b | 36639.58 | 7.19 | 47.19 | 75.86 | -0.302 |
| Mouse IgG3 | 36428.46 | 8.36 | 43.78 | 75.56 | -0.332 |
| Rabbit IgG | 35347.19 | 8.62 | 47.58 | 70.19 | -0.379 |
|  |  |  |  |  |  |

Ck

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse Ck | 11777.88 | 5.23 | 49.30 | 54.25 | -0.722 |
| Rabbit Ck1 | 11199.38 | 4.75 | 19.83 | 65.48 | -0.299 |
| Rabbit Ck2 | 11222.35 | 4.45 | 51.86 | 69.52 | -0.304 |
|  |  |  |  |  |  |

Fc (Hinge-CH2-CH3)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse IgG1 | 25589.04 | 5.99 | 34.10 | 63.72 | -0.534 |
| Mouse IgG2a | 26257.04 | 7.36 | 40.86 | 72.07 | -0.515 |
| Mouse IgG2b | 26603.28 | 6.70 | 45.84 | 78.07 | -0.456 |
| Mouse IgG3 | 26192.79 | 7.86 | 37.20 | 70.60 | -0.561 |
| Rabbit IgG | 25597.12 | 8.22 | 49.90 | 67.89 | -0.550 |
|  |  |  |  |  |  |

CH1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse IgG1 | 10169.52 | 8.04 | 41.08 | 77.45 | 0.080 |
| Mouse IgG2a | 10150.43 | 6.93 | 50.91 | 78.47 | 0.080 |
| Mouse IgG2b | 10056.29 | 6.93 | 48.39 | 69.49 | 0.056 |
| Mouse IgG3 | 10253.69 | 8.57 | 56.00 | 87.35 | 0.213 |
| Rabbit IgG | 9768.08 | 8.85 | 41.93 | 75.68 | 0.029 |
|  |  |  |  |  |  |

CH2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse IgG1 | 12205.93 | 5.31 | 39.67 | 77.41 | -0.279 |
| Mouse IgG2a | 12367.20 | 5.86 | 38.26 | 92.88 | -0.196 |
| Mouse IgG2b | 12458.23 | 5.87 | 38.66 | 88.47 | -0.305 |
| Mouse IgG3 | 12423.32 | 8.75 | 30.39 | 78.02 | -0.368 |
| Rabbit IgG | 12422.36 | 9.11 | 44.27 | 83.94 | -0.420 |
|  |  |  |  |  |  |

CH3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class Subclass | MW | pI | Instability index | Aliphatic index | GRAVY |
| Mouse IgG1 | 12123.57 | 6.20 | 30.12 | 53.30 | -0.838 |
| Mouse IgG2a | 12331.89 | 6.40 | 45.03 | 56.79 | -0.818 |
| Mouse IgG2b | 11970.50 | 7.93 | 43.52 | 76.23 | -0.585 |
| Mouse IgG3 | 12155.62 | 6.07 | 36.05 | 69.81 | -0.677 |
| Rabbit IgG | 12022.41 | 5.88 | 52.51 | 58.22 | -0.682 |
|  |  |  |  |  |  |

まとめ

アミノ酸組成の比較

Ck-CH1-Hinge-CH2-CH3

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse Ck-IgG1 | 13 | 31 | 3931+8 | 4522+23 | 17 | 36 | 9249+43 | 7616+21+39 | 3818+9+11 |
| Mouse Ck-IgG2a | 13 | 31 | 4231+11 | 4622+24 | 19 | 36 | 9351+42 | 8416+26+42 | 3513+8+14 |
| Mouse Ck-IgG2b | 14 | 31 | 4231+11 | 4524+21 | 22 | 36 | 9958+41 | 8620+27+39 | 3513+8+14 |
| Mouse Ck-IgG3 | 11 | 29 | 4329+14 | 4320+23 | 21 | 38 | 9253+39 | 8418+27+39 | 3715+9+13 |
| Rabbit Cka-IgG | 14 | 24 | 3924+15 | 3718+19 | 22 | 40 | 9545+50 | 8213+25+44 | 3213+6+13 |
| Rabbit Ckb-IgG | 13 | 24 | 3824+14 | 3817+21 | 22 | 42 | 9653+43 | 8314+27+42 | 3213+6+13 |

CH1-Hinge-CH2-CH3

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 10 | 24 | 2924+5 | 3215+17 | 13 | 31 | 6533+32 | 6112+16+33 | 2814+7+7 |
| Mouse IgG2a | 10 | 24 | 3224+8 | 3315+18 | 15 | 31 | 6635+31 | 6912+21+36 | 259+6+10 |
| Mouse IgG2b | 11 | 24 | 3224+8 | 3217+15 | 18 | 31 | 7242+30 | 7116+22+33 | 259+6+10 |
| Mouse IgG3 | 8 | 22 | 3322+11 | 3013+17 | 17 | 33 | 6537+28 | 6914+22+33 | 2711+7+9 |
| Rabbit IgG | 10 | 20 | 3320+13 | 2812+16 | 17 | 34 | 6737+30 | 6310+21+32 | 2410+5+9 |
|  |  |  |  |  |  |  |  |  |  |

Ck

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse Ck | 3 | 7 | 107+3 | 137+6 | 4 | 5 | 2716+11 | 154+5+6 | 104+2+4 |
| Rabbit Ck1 | 4 | 4 | 64+2 | 96+3 | 5 | 6 | 288+20 | 193+4+12 | 83+1+4 |
| Rabbit Ck2 | 3 | 4 | 54+1 | 105+5 | 5 | 8 | 2916+13 | 204+6+10 | 83+1+4 |

Fc (Hinge-CH2-CH3)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 8 | 19 | 2419+5 | 2813+15 | 8 | 21 | 3617+19 | 4011+9+20 | 2112+5+4 |
| Mouse IgG2a | 7 | 19 | 2719+8 | 2712+15 | 9 | 23 | 3518+17 | 4810+13+25 | 187+4+7 |
| Mouse IgG2b | 8 | 20 | 2720+7 | 2815+13 | 11 | 22 | 3923+16 | 5216+14+22 | 187+4+7 |
| Mouse IgG3 | 5 | 18 | 2718+7 | 2612+14 | 10 | 25 | 3720+17 | 4511+14+20 | 199+5+5 |
| Rabbit IgG | 6 | 16 | 2716+11 | 2510+15 | 10 | 24 | 4023+17 | 4210+14+18 | 198+4+7 |
|  |  |  |  |  |  |  |  |  |  |

VH/VL（rabbit scFv ６７０クローンの平均） VH 115 aa, VL 110 aa

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Rabbit VH | 2 | 4 | 84+4 | 72+5 | 15 | 5 | 3216+16 | 184+9+5 | 154+5+6 |
| Rabbit VL | 4 | 3 | 54+1 | 74+3 | 14 | 4 | 2613+13 | 246+10+8 | 113+1+7 |

CH1

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 2 | 5 | 55+0 | 42+2 | 5 | 10 | 2916+13 | 211+7+13 | 72+2+3 |
| Mouse IgG2a | 3 | 5 | 55+0 | 53+2 | 6 | 8 | 3117+14 | 212+8+11 | 72+2+3 |
| Mouse IgG2b | 3 | 4 | 44+0 | 42+2 | 7 | 9 | 3419+15 | 190+8+11 | 72+2+3 |
| Mouse IgG3 | 3 | 4 | 53+2 | 41+3 | 7 | 8 | 2817+11 | 243+8+13 | 82+2+4 |
| Rabbit IgG | 4 | 4 | 64+2 | 32+1 | 7 | 10 | 2714+13 | 210+7+14 | 52+1+2 |

Hinge

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | Length | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 12 | 4 | 1 | 21+1 | 11+0 | 1 | 2 | 10+1 | 11+0+0 | 00+0+0 |
| Mouse IgG2a | 15 | 3 | 2 | 32+1 | 00+0 | 1 | 6 | 10+1 | 11+0+0 | 00+0+0 |
| Mouse IgG2b | 21 | 4 | 2 | 22+0 | 10+1 | 1 | 6 | 32+1 | 22+0+0 | 00+0+0 |
| Mouse IgG3 | 15 | 1 | 1 | 21+1 | 00+0 | 1 | 6 | 43+1 | 11+0+0 | 00+0+0 |
| Rabbit IgG | 12 | 2 | 1 | 11+0 | 00+0 | 0 | 4 | 42+2 | 00+0+0 | 00+0+0 |
|  |  |  |  |  |  |  |  |  |  |  |

CH2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 2 | 9 | 129+3 | 157+8 | 2 | 10 | 189+9 | 246+4+14 | 108+2+0 |
| Mouse IgG2a | 2 | 8 | 118+3 | 138+5 | 4 | 10 | 159+6 | 298+7+14 | 74+2+1 |
| Mouse IgG2b | 2 | 8 | 128+4 | 148+6 | 4 | 9 | 169+7 | 289+5+14 | 74+2+1 |
| Mouse IgG3 | 2 | 10 | 1410+4 | 127+5 | 5 | 12 | 137+6 | 246+5+13 | 95+3+1 |
| Rabbit IgG | 2 | 8 | 158+7 | 125+7 | 3 | 12 | 146+8 | 257+7+11 | 85+2+1 |

CH3

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class Subclass | C | K | K+R | D+E | G | P | S+T | I+L+V | F+W+Y |
| Mouse IgG1 | 2 | 9 | 109+1 | 125+7 | 5 | 9 | 178+9 | 154+5+6 | 114+3+4 |
| Mouse IgG2a | 2 | 9 | 139+4 | 144+10 | 4 | 7 | 199+10 | 181+6+11 | 113+2+6 |
| Mouse IgG2b | 2 | 10 | 1410+4 | 137+6 | 6 | 7 | 1912+7 | 225+9+8 | 113+2+6 |
| Mouse IgG3 | 2 | 7 | 117+4 | 135+8 | 4 | 7 | 2010+10 | 204+9+7 | 124+2+4 |
| Rabbit IgG | 2 | 7 | 117+4 | 135+8 | 7 | 8 | 2215+7 | 173+7+7 | 113+2+6 |

Hopp & Woods Hydrophobicity

Mouse IgG1

CH1



Mouse IgG1 CH2



Mouse IgG1 CH3



Mouse IgG1 CH1-Hinge-CH2-CH3



Mouse IgG2a

CH1



Mouse IgG2a CH2



Mouse IgG2a CH3



Mouse IgG2a CH1-Hinge-CH2-CH3



Mouse IgG2b

CH1



Mouse IgG2b CH2



Mouse IgG2b CH3



Mouse IgG2b CH1-Hinge-CH2-CH3



Mouse IgG3

CH1



Mouse IgG3 CH2



Mouse IgG3 CH3



Mouse IgG3 CH1-Hinge-CH2-CH3



Rabbit IgG

CH1



Rabbit IgG CH2



Rabbit IgG CH3



Rabbit IgG CH1-Hinge-CH2-CH3



Mouse Ck



Rabbit Ck1



Rabbit Ck2



CH1-Hinge-CH2-CH3

Mouse IgG1 Mouse IgG2a



Mouse IgG2b Mouse IgG3



Rabbit IgG

