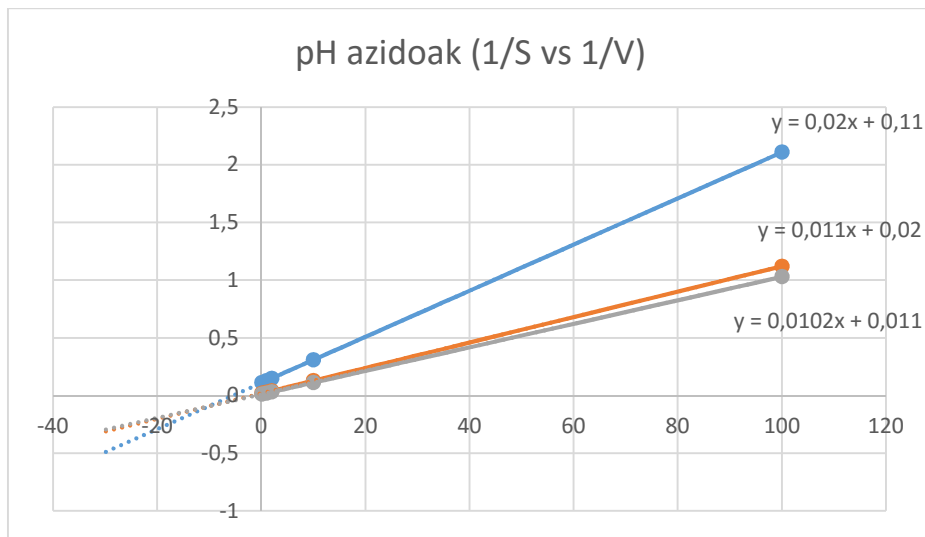
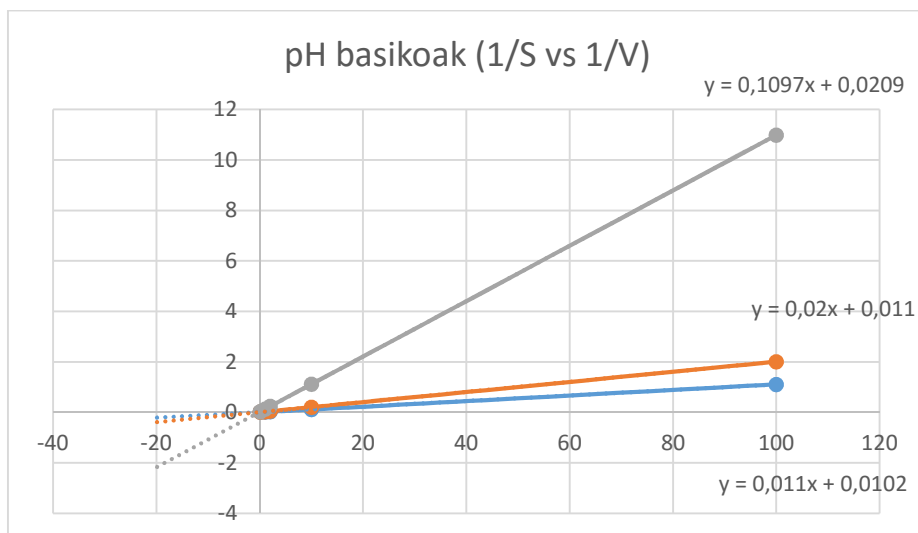


6. ariketa

pH	1/v	100	10	2	1	0,1	1/[S]
5	2,109704641	0,3099814	0,1499925	0,1300052	0,11199462		
6	1,121076233	0,13010669	0,042020338	0,03101064	0,02110194		
7	1,030927835	0,11300712	0,031409995	0,02120981	0,01202993		
8	1,111111111	0,12029352	0,032219609	0,02120981	0,01130097		
9	2,012072435	0,21101498	0,0510126	0,03101064	0,01301016		
10	10,98901099	1,11982083	0,239980802	0,1300052	0,03100102		

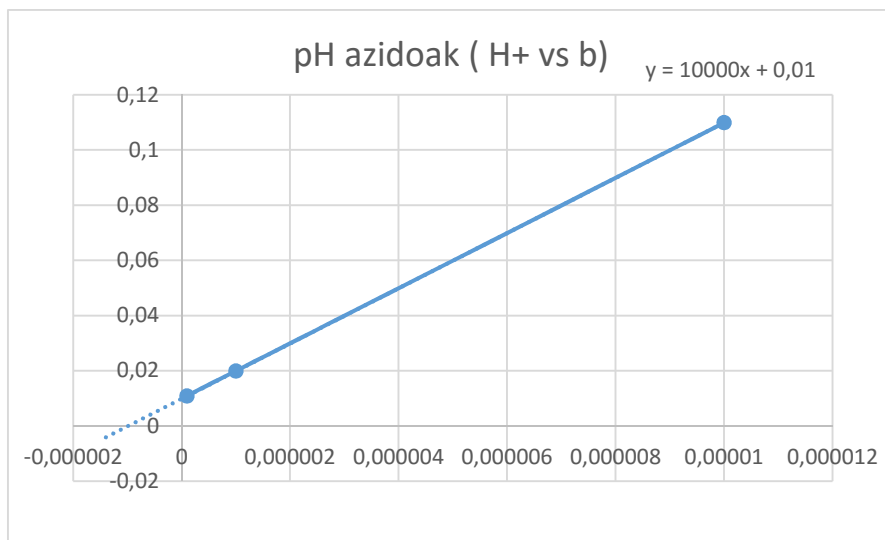


Zuzenak elkar ebakitzen duteneko x puntua $= -1/\alpha K_s = -10 \rightarrow \alpha K_s = 0,1M$



Zuzenak elkar ebakitzen duteneko x puntua $= -1/\beta K_s = -2,3 \rightarrow \beta K_s = 0,43M$

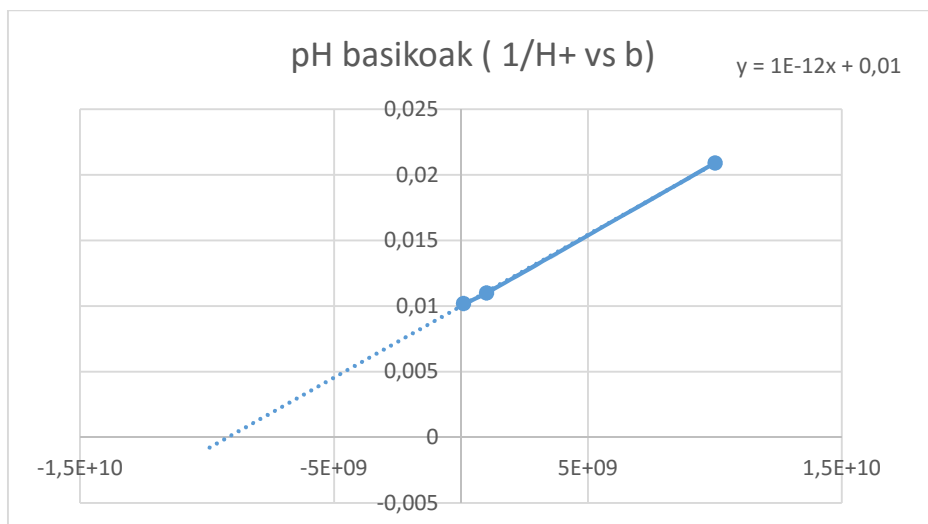
[H ⁺]	b
0,00001	0,11
0,000001	0,02
0,0000001	0,011



X ebaki puntua = $-KES1 = -10^{-6} \rightarrow KES1 = 10^{-6} M$

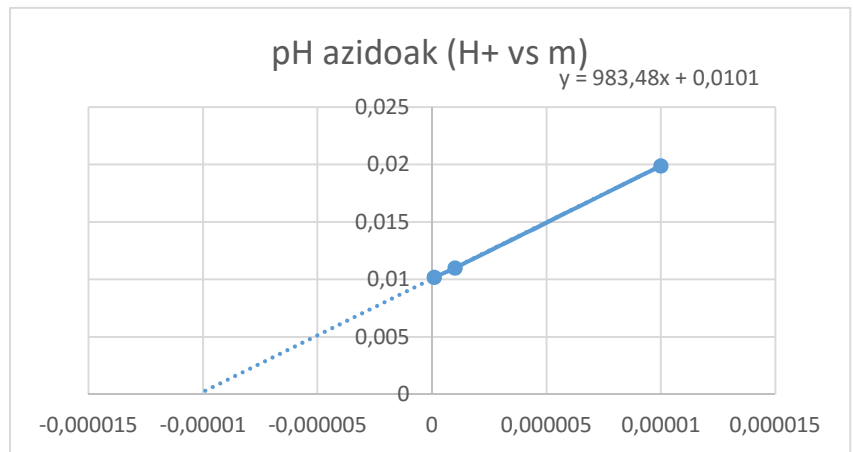
$b = 1/V_{max} = 0,01 \rightarrow V_{max} = 100 \mu\text{mol prod/min} \cdot \text{mg prot}$

1/[H ⁺]	b
1000000000	0,0102
10000000000	0,011
100000000000	0,0209



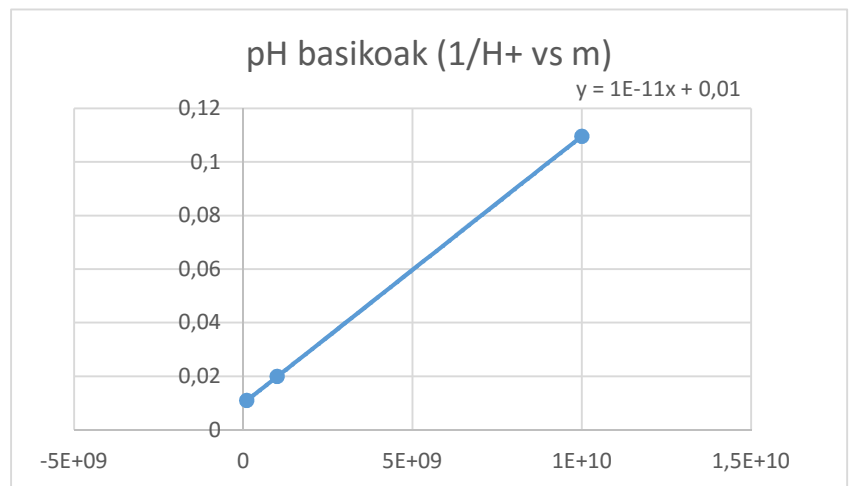
X ebaki puntua = $-1/KES2 = -10^{-10} \rightarrow KES2 = 10^{-10} M$

[H+]	m
0,00001	0,0199
0,000001	0,011
0,0000001	0,0102



X ardatz ebaki puntua = $-KE1 = -1,03 \cdot 10^{-5} \rightarrow KE1 = 1,03 \cdot 10^{-5} M$

1/[H+]	m
100000000	0,011
1000000000	0,0199
10000000000	0,1096



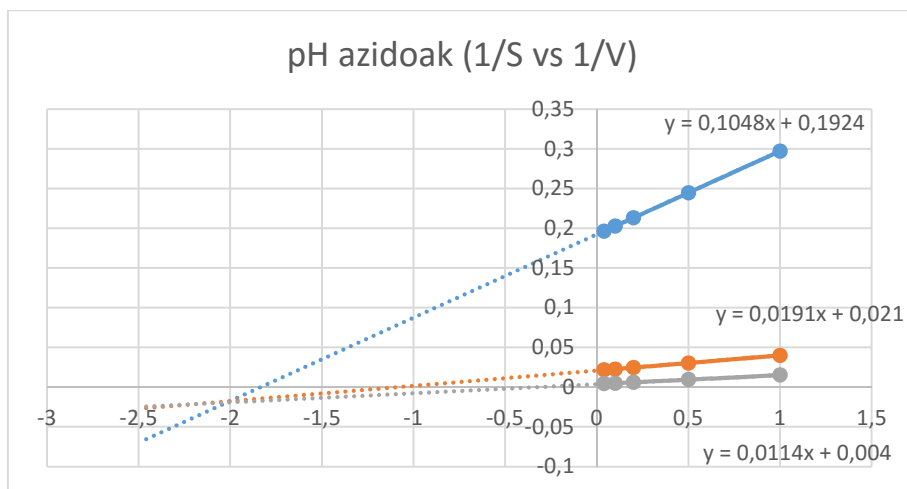
X ardatzaren ebaki puntua = $-1/KE2 = -10^{-9} \rightarrow KE2 = 10^{-9} M$

$\alpha = KES1/KE1 = 10^{-6}/1,03 \cdot 10^{-6} = 0,097 \rightarrow \alpha = 0,097$

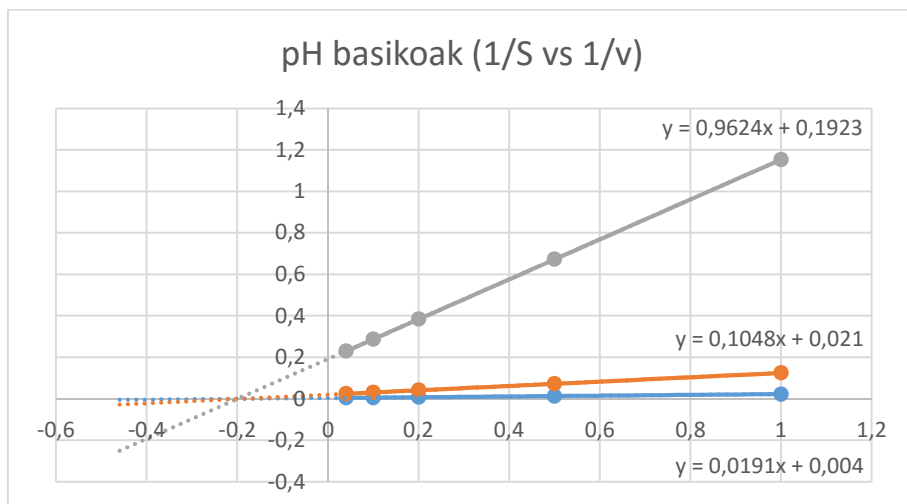
$\beta = KE2/KES2 = 10^{-9}/10^{-10} = 10 \rightarrow \beta = 10$

7. ariketa

pH	1/v	1	0,5	0,2	0,1	0,04	1/S
5	0,29717682	0,244798042	0,21335609	0,20283976	0,19657952		
6	0,04011392	0,030542745	0,02479974	0,02288591	0,02173724		
7	0,01542853	0,009714302	0,00628571	0,00514287	0,00445714		
8	0,02314279	0,013571467	0,00782859	0,00591429	0,00476572		
9	0,12573871	0,073356808	0,04192521	0,03144852	0,0251623		
10	1,15473441	0,673400673	0,38476337	0,28860029	0,23084026		

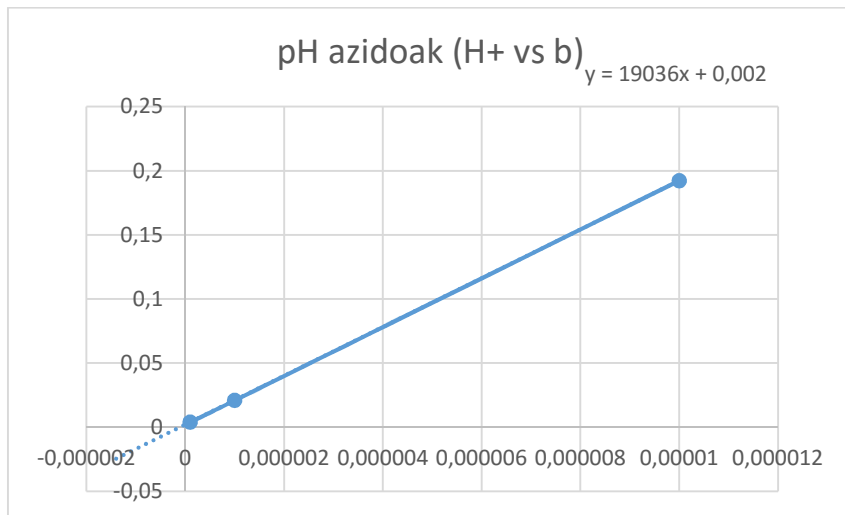


Zuzenak elkar ebakitzen duteneko x puntua $= -1/\alpha K_s = -2,1 \rightarrow \alpha K_s = 0,48M$



Zuzenak elkar ebakitzen duteneko x puntua $= -1/\beta K_s = -0,2 \rightarrow \beta K_s = 5M$

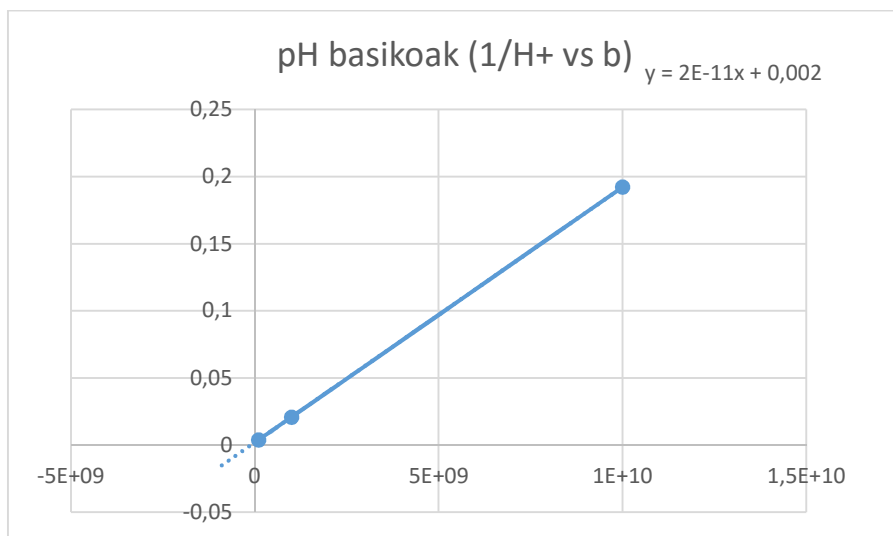
[H ⁺]	b
0,00001	0,1924
0,000001	0,021
0,0000001	0,004



$b = 1/V_{\max} = 0.002 \rightarrow V_{\max} = 500 \mu\text{mol prod./min} \cdot \text{mg prot.}$

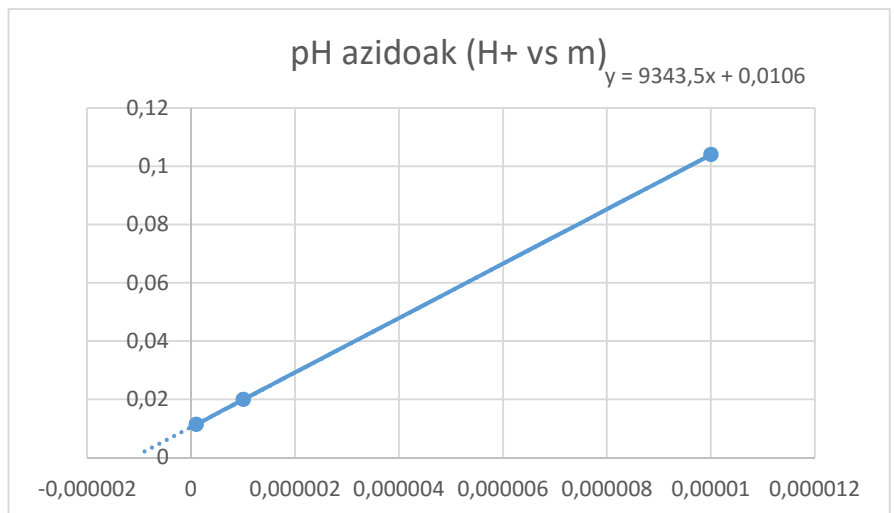
X ardatzaren ebaki puntua = $-KES1 = -1,05 \cdot 10^{-7} \rightarrow KES1 = 1,05 \cdot 10^{-7} \text{ M}$

1/[H ⁺]	b
1000000000	0,004
10000000000	0,021
100000000000	0,1923



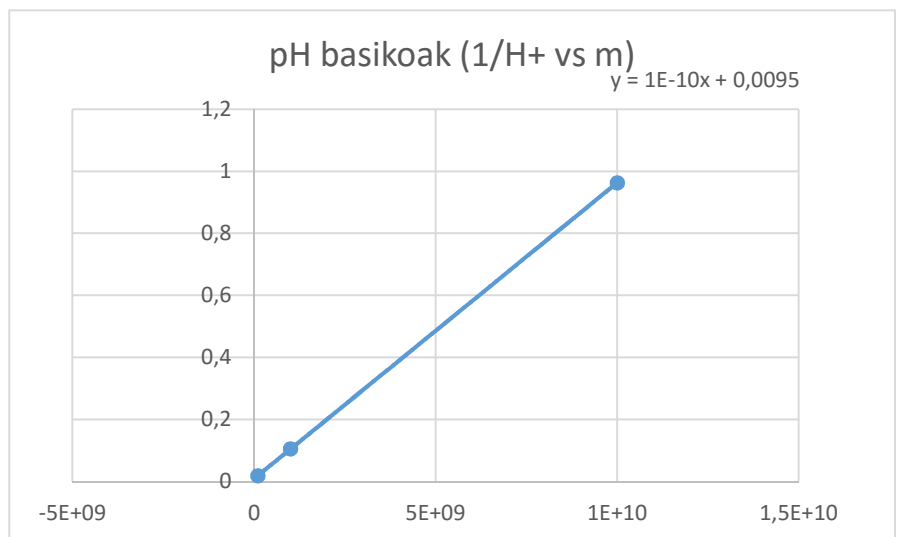
X ardatzaren ebaki puntua = $-1/KES2 = -10^8 \rightarrow KES2 = 10^{-8} \text{ M}$

[H ⁺]	m
0,00001	0,104
0,000001	0,02
0,0000001	0,01143



X ardatzaren ebaki puntua= $-KE1 = 1,13 \cdot 10^{-6} \rightarrow KE1 = 1,13 \cdot 10^{-6} M$

1/H ⁺	m
100000000	0,019
1000000000	0,1048
10000000000	0,9626



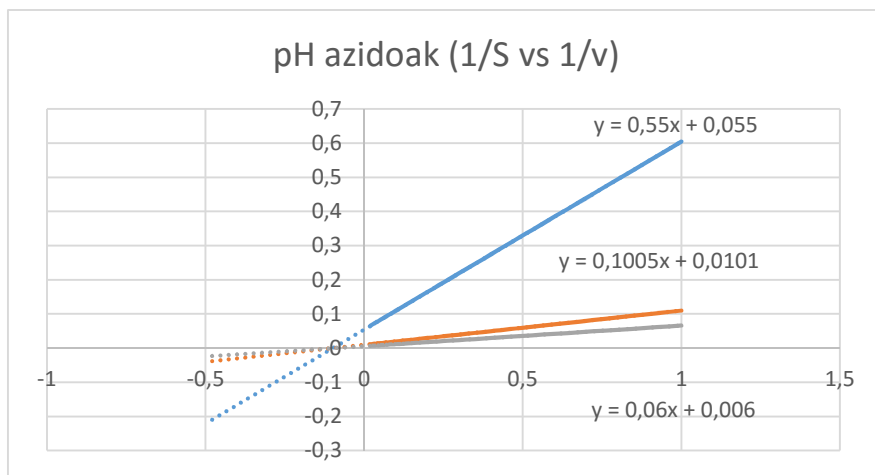
X ardatzaren ebaki puntua= $-1/KE2 = -9.5 \cdot 10^{-7} \rightarrow KE2 = 1,05 \cdot 10^{-8} M$

$\alpha = KES1/KE1 = 1,05 \cdot 10^{-7} / 1,13 \cdot 10^{-6} = 0.0929 \rightarrow \alpha = 0.0929$

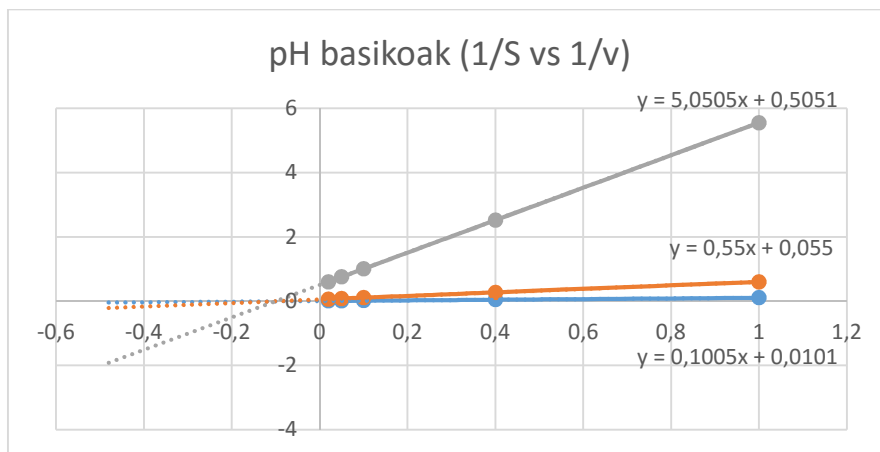
$\beta = KE2/KES2 = 1,05 \cdot 10^{-8} / 10^{-8} = 1.05 \rightarrow \beta = 1.05$

8. ariketa

pH	1/v	1	0,4	0,1	0,05	0,02	1/S
5	0,60496068	0,2750275	0,110011	0,08250825	0,0660066		
6	0,1105461	0,05025126	0,0201001	0,015075	0,01205996		
7	0,06599789	0,0300003	0,01200005	0,00900001	0,00719999		
8	0,1105461	0,05025126	0,0201001	0,015075	0,01205996		
9	0,60496068	0,2750275	0,110011	0,08250825	0,0660066		
10	5,55555556	2,52525253	1,01010101	0,75757576	0,60606061		

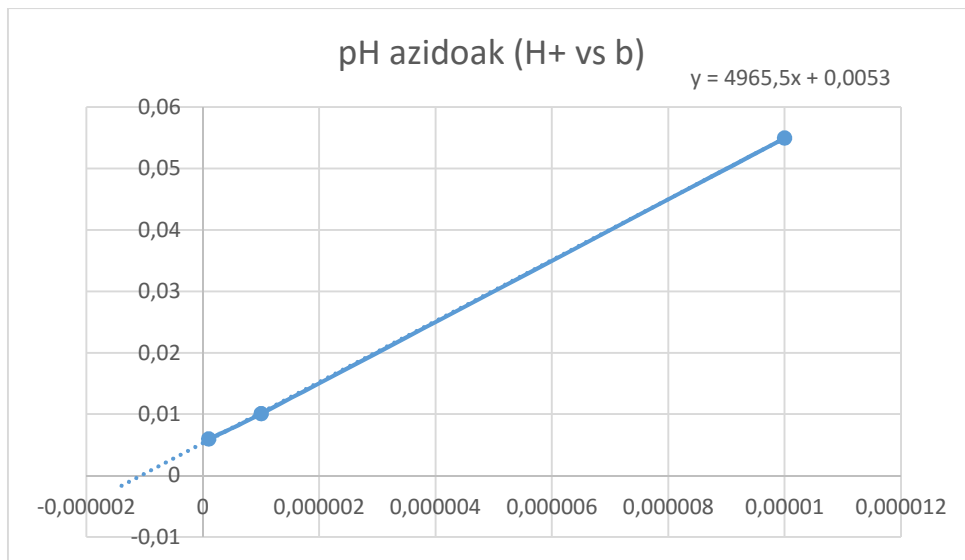


Zuzenak elkar ebakitzen duteneko x puntua= $-1/\alpha K_s = -0,1 \rightarrow \alpha K_s = 10M$



Zuzenak elkar ebakitzen duteneko x puntua= $-1/\beta K_s = -0,5 \rightarrow \beta K_s = 10M$

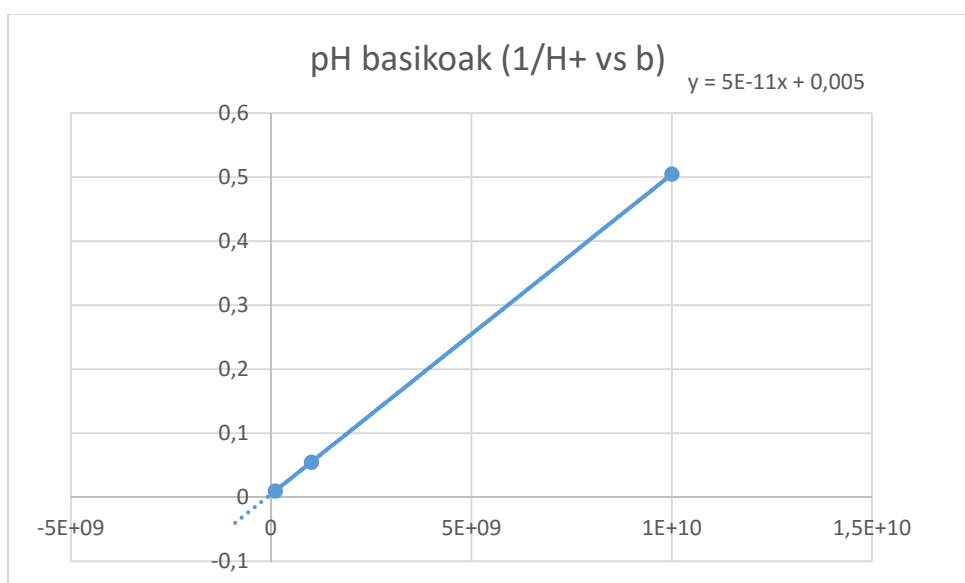
[H+]	b
0,00001	0,055
0,000001	0,0101
0,0000001	0,006



$b = 1/V_{max} = 0.0053 \rightarrow V_{max} = 188.68 \mu\text{mol prod.}/\text{min-mg prot}$

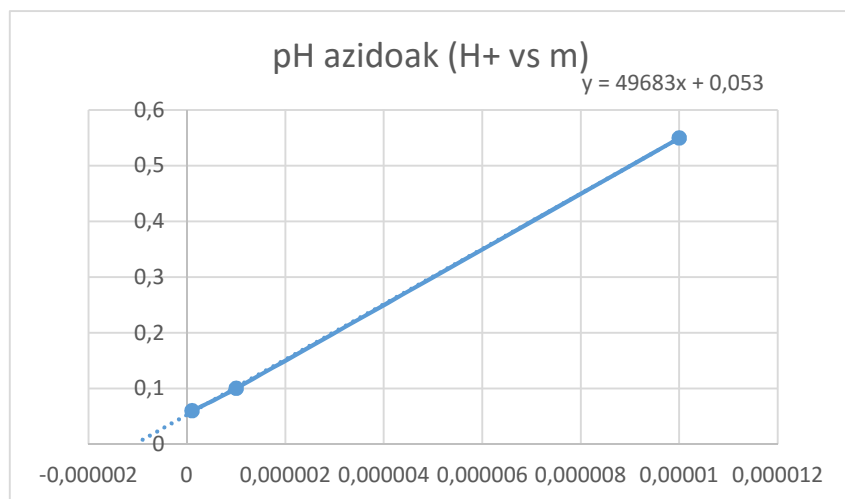
X ardatzaren ebaki puntua = $-KES1 = -1,067 \cdot 10^{-6} \rightarrow KES1 = 1,067 \cdot 10^{-6} \text{M}$

1/[H+]	b
100000000	0,0101
1000000000	0,055
1E+10	0,5051



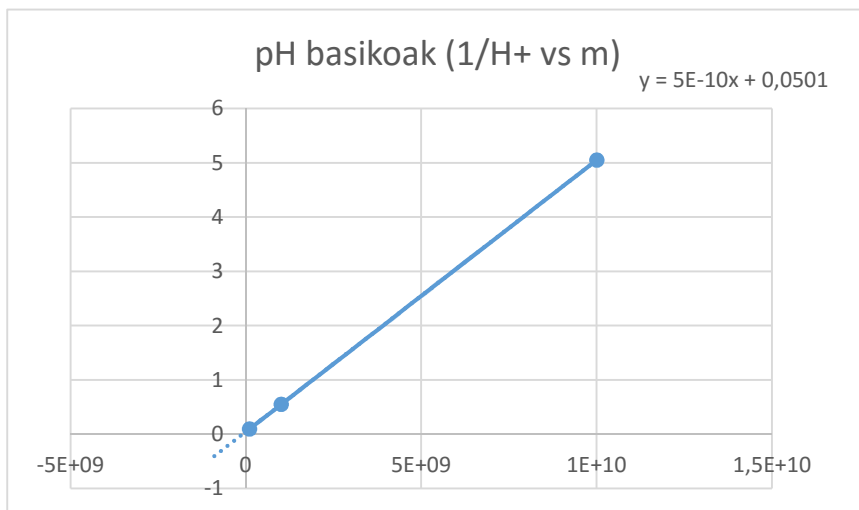
X ardatzaren ebaki puntua = $-1/KES2 = 10^8 \rightarrow KES2 = 10^{-8} \text{M}$

[H+]	m
0,00001	0,55
0,000001	0,1005
0,0000001	0,0599



X ardatzaren ebaki puntua= $-KE1 = 1,067 \cdot 10^{-6} \rightarrow KE1 = 1,067 \cdot 10^{-6} M$

1/H+	m
100000000	0,1005
1000000000	0,5498
10000000000	5,051



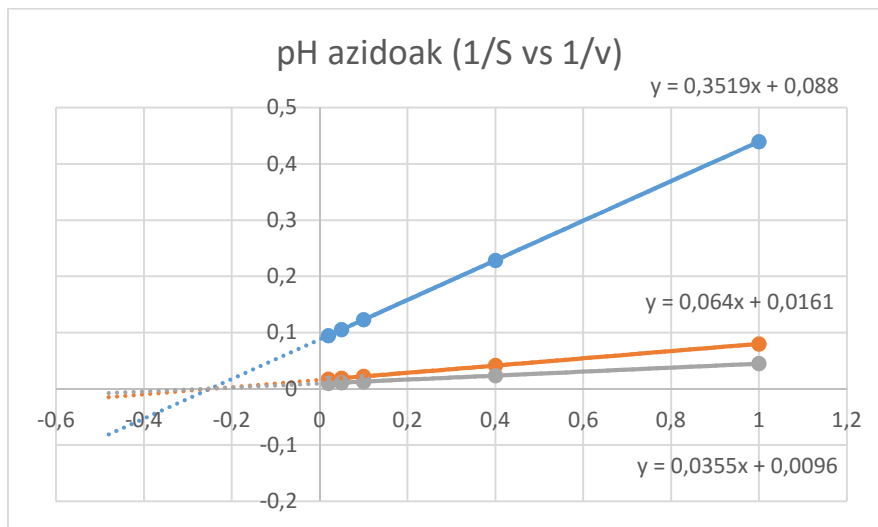
X ardatzaren ebaki puntua= $-1/KE2 = -100200000 \rightarrow KE2 = 9.98 \cdot 10^{-9} M$

$\alpha = KES1/KE1 = 1,067 \cdot 10^{-6} / 1,067 \cdot 10^{-6} \rightarrow \alpha = 1$

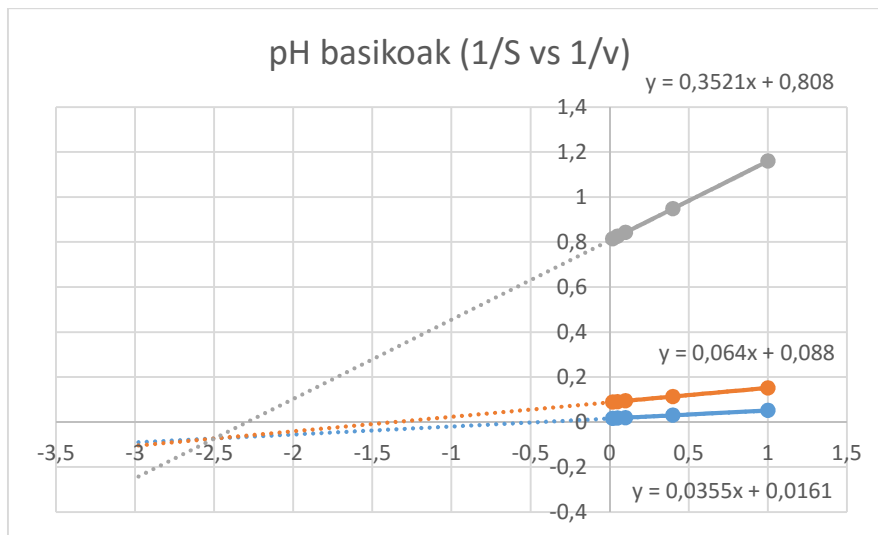
$\beta = KE2/KES2 = 9.98 \cdot 10^{-9} / 10^{-8} \rightarrow \beta = 0.998$

9. ariketa

pH	1/v	1	0,4	0,1	0,05	0,02	1/S
5	0,43994721	0,22883295	0,12321341	0,10560777	0,095048		
6	0,08010895	0,04169272	0,02248303	0,01928157	0,01736051		
7	0,04512025	0,02380782	0,01315201	0,01137605	0,01031045		
8	0,05159959	0,03028835	0,01963209	0,01785587	0,01679036		
9	0,15204501	0,11362345	0,09441088	0,09120759	0,08928571		
10	1,16009281	0,9487666	0,84317032	0,82576383	0,81499593		

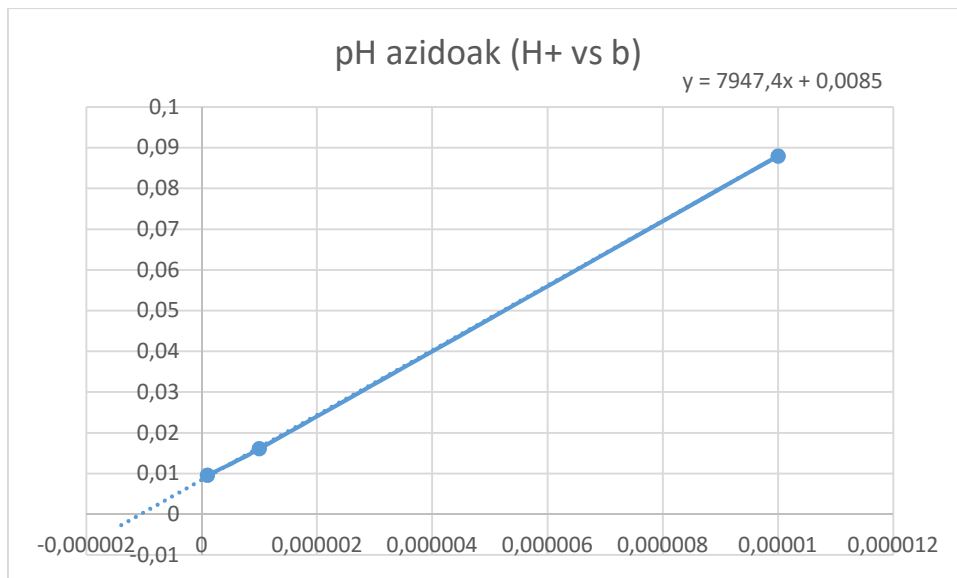


Zuzenak elkar ebakitzen duteneko x puntua = $-1/\alpha K_s = -0,25 \rightarrow \alpha K_s = 4M$



Zuzenak elkar ebakitzen duteneko x puntua = $-1/\beta K_s = -2,5 \rightarrow \beta K_s = 0,4M$

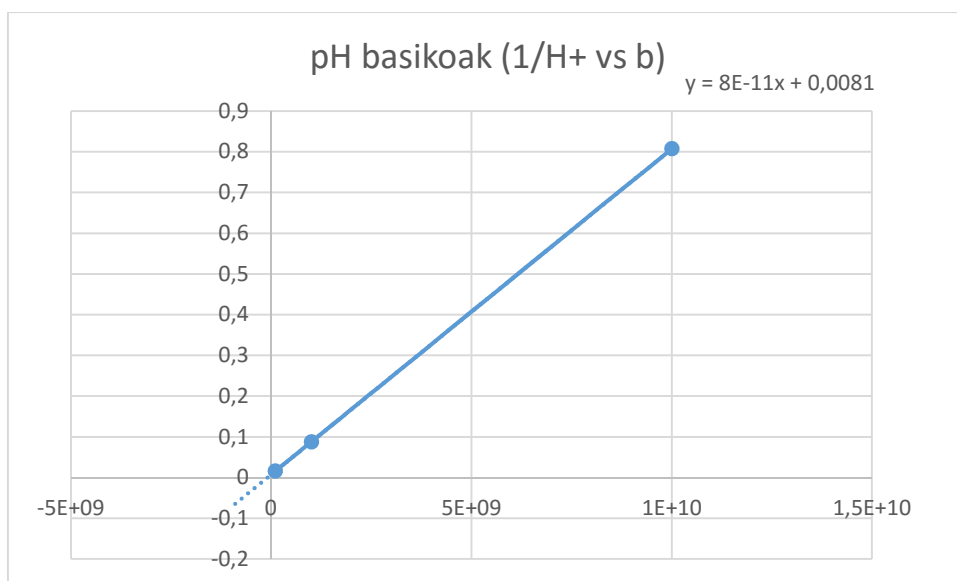
[H ⁺]	b
0,00001	0,088
0,000001	0,0161
0,0000001	0,0096



$b = 1/V_{max} = 0,0085 \rightarrow V_{max} = 117.65 \mu\text{mol prod.}/\text{min-mg prot.}$

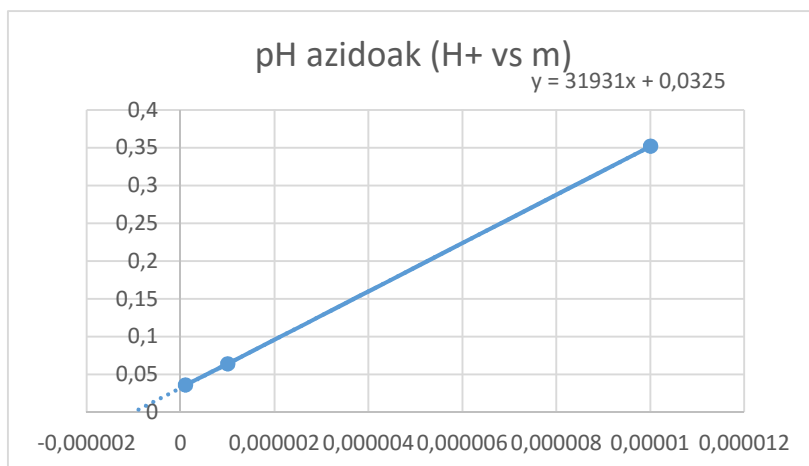
X ardatzaren ebaki puntua = $-KES1 = -1,07 \cdot 10^{-6} \rightarrow KES1 = 1,07 \cdot 10^{-6} \text{M}$

1/[H ⁺]	b
100000000	0,0161
1000000000	0,088
1E+10	0,808



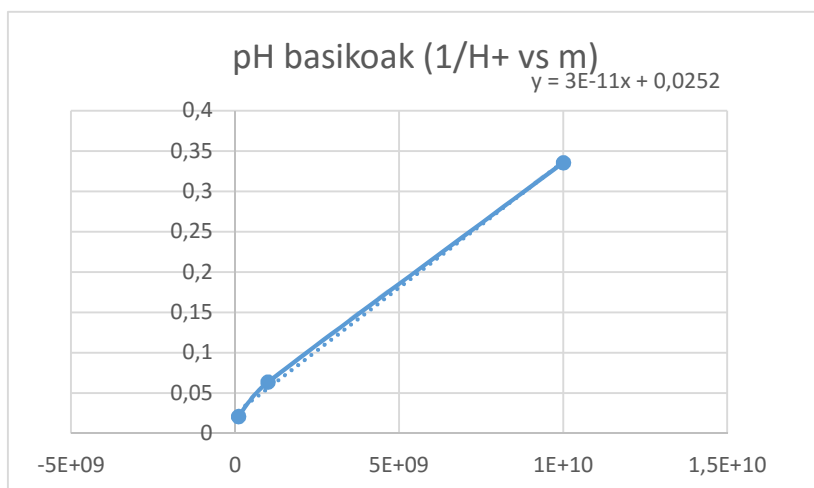
X ardatzaren ebaki puntua = $-1/KES2 = -101250000 \rightarrow KES2 = 9.88 \cdot 10^{-9} \text{M}$

[H ⁺]	m
0,00001	0,3518
0,000001	0,064
0,0000001	0,036



X ardatzaren ebaki puntua = $-KE1 = -1,02 \cdot 10^{-6} \rightarrow KE1 = 1,02 \cdot 10^{-6} M$

1/H ⁺	m
100000000	0,0213
1000000000	0,064
10000000000	0,336



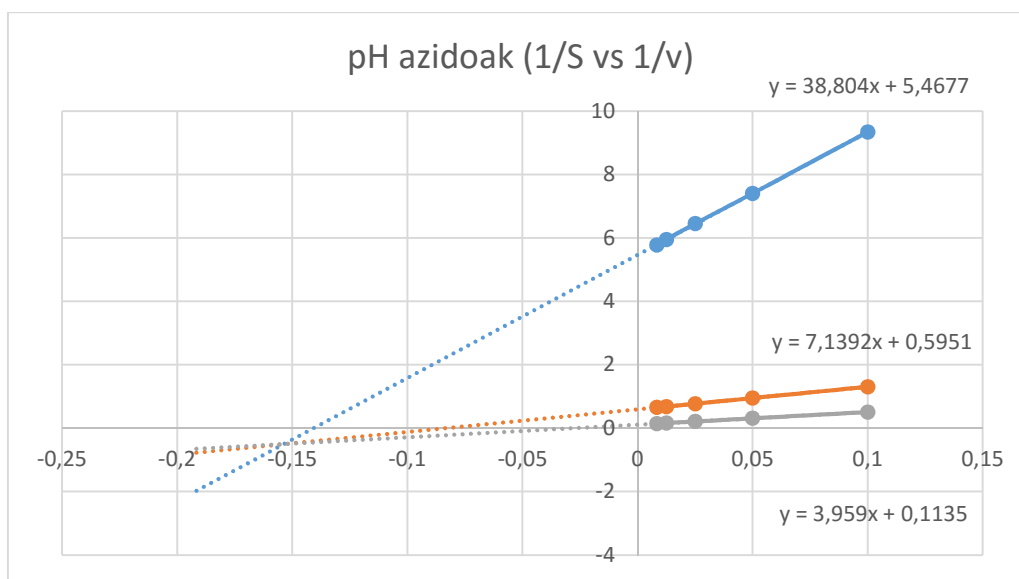
X ardatzaren ebaki puntua = $-1/KE2 = 8.4 \cdot 10^{-8} \rightarrow KE2 = 1,19 \cdot 10^{-9} M$

$\alpha = KES1/KE1 = 1,07 \cdot 10^{-6} / 1,02 \cdot 10^{-6} = 1.04 \rightarrow \alpha = 1.04$

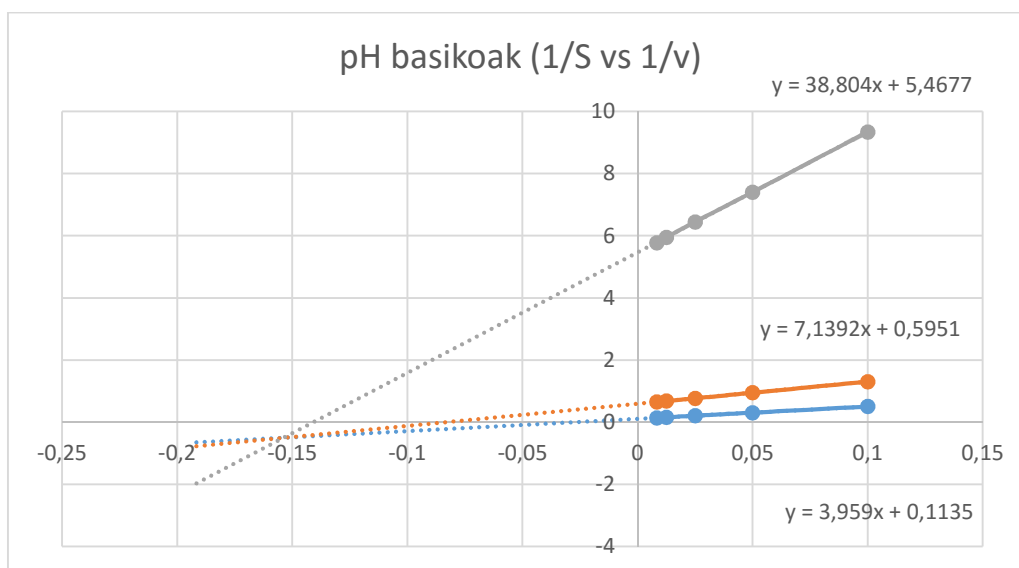
$\beta = KE2/KES2 = 1,19 \cdot 10^{-9} / 9.88 \cdot 10^{-9} = 0.12 \rightarrow \beta = 0.12$

10. ariketa

pH	1/v						1/S
	0,1	0,05	0,025	0,0125	0,00833333		
5	9,345794393	7,40740741	6,4516129	5,95238095	5,78034682		
6	1,308900524	0,95238095	0,7733952	0,6844627	0,65445026		
7	0,50942435	0,31152648	0,21249469	0,16302576	0,14652015		
8	0,50942435	0,31152648	0,21249469	0,16302576	0,14652015		
9	1,308900524	0,95238095	0,7733952	0,6844627	0,65445026		
10	9,345794393	7,40740741	6,4516129	5,95238095	5,78034682		

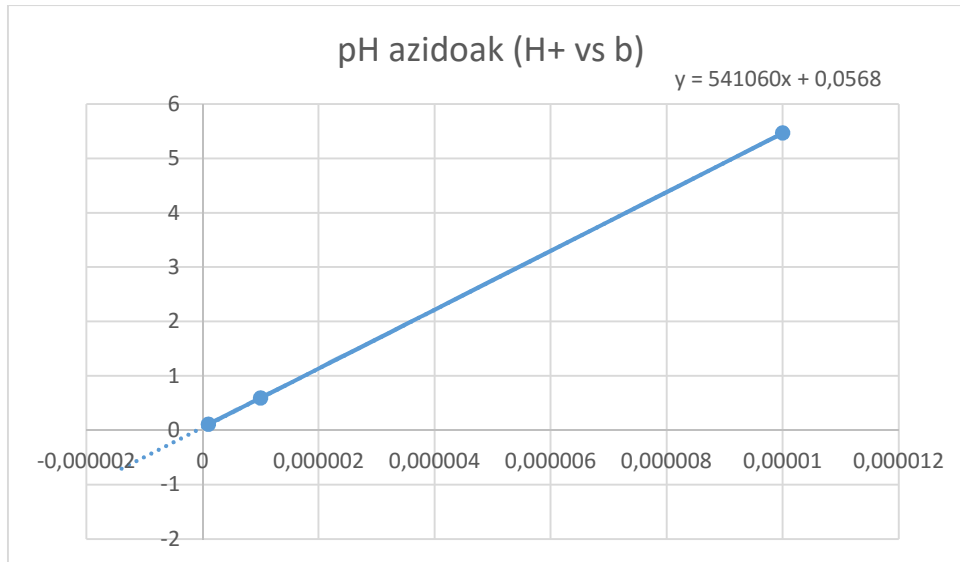


Zuzenak elkar ebakitzen duteneko x puntua = $-1/\alpha K_s = -0,155 \rightarrow \alpha K_s = 6,45M$



Zuzenak elkar ebakitzen duteneko x puntua = $-1/\beta K_s = -0,155 \rightarrow \beta K_s = 6,45M$

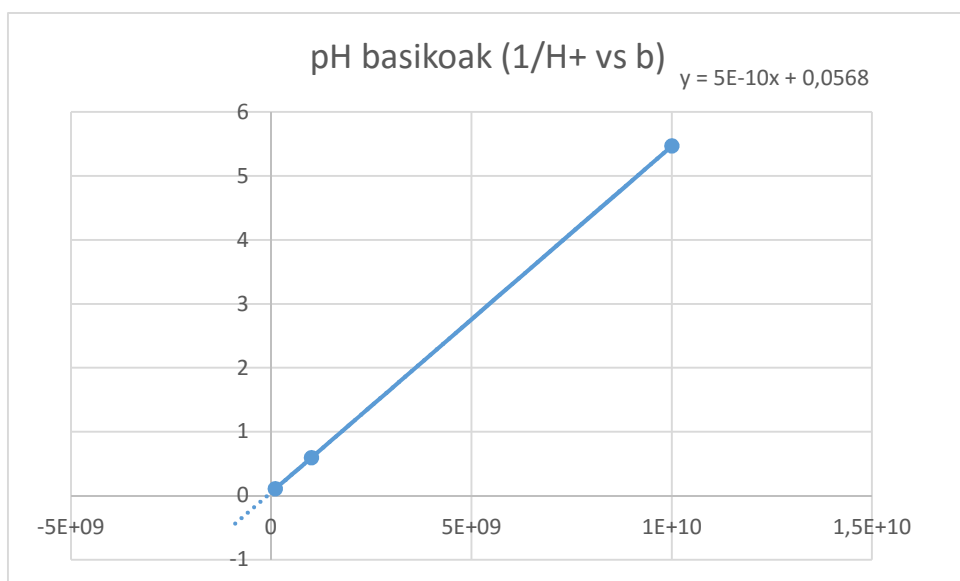
[H ⁺]	b
0,00001	5,4677
0,000001	0,5951
0,0000001	0,1135



$b = 1/V_{\max} = 0.0568 \rightarrow V_{\max} = 17.6 \mu\text{mol prod/min}\cdot\text{mg prot}$

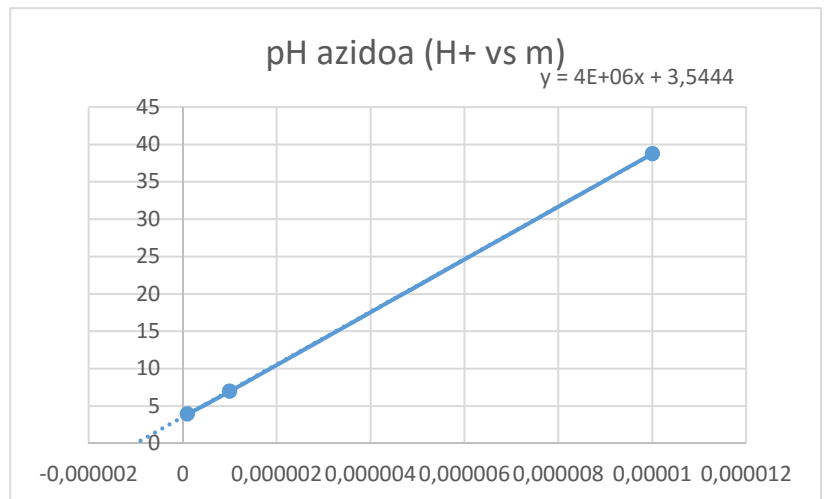
x ardatzaren ebaki puntua = $-KES1 = -1,05 \cdot 10^{-7} \rightarrow KES1 = 1,05 \cdot 10^{-7} \text{ M}$

1/[H ⁺]	b
1000000000	0,1135
10000000000	0,5951
100000000000	5,4677



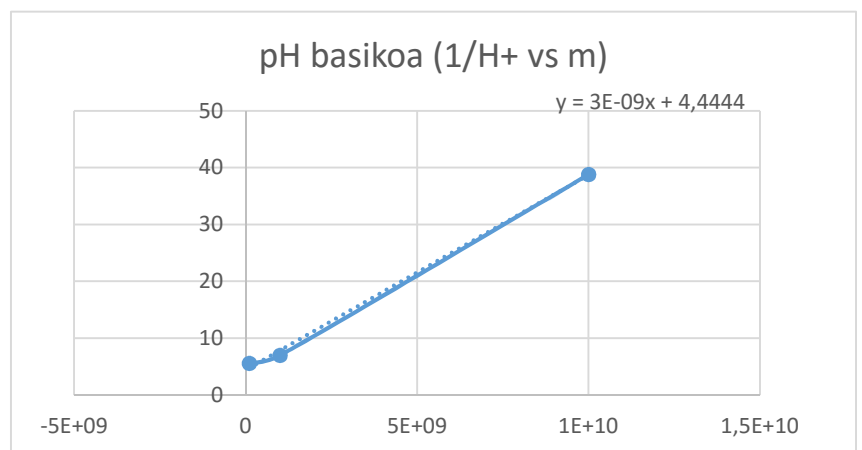
X ardatzaren ebaki puntua = $-1/KES2 = 113600000 \rightarrow KES2 = 8.8 \cdot 10^{-9} \text{ M}$

[H ⁺]	m
0,00001	38,78
0,000001	7
0,0000001	3,958



X ardatzaren ebaki puntua = $-KE1 = -8.86 \cdot 10^{-7} \rightarrow KE1 = 8.86 \cdot 10^{-7} M$

1/[H ⁺]	m
100000000	5,58
1000000000	7
10000000000	38,8



X ardatzaren ebaki puntua = $-1/KE2 = -1481333333 \rightarrow KE2 = 6.75 \cdot 10^{-10} M$

$\alpha = KES1/KE1 = 1.05 \cdot 10^{-7} / 8.86 \cdot 10^{-7} = 0.1185 \rightarrow \alpha = 0.1185$

$\beta = KE2/KES2 = 6.75 \cdot 10^{-10} / 8.8 \cdot 10^{-9} = 0.0767 \rightarrow \beta = 0.0767$