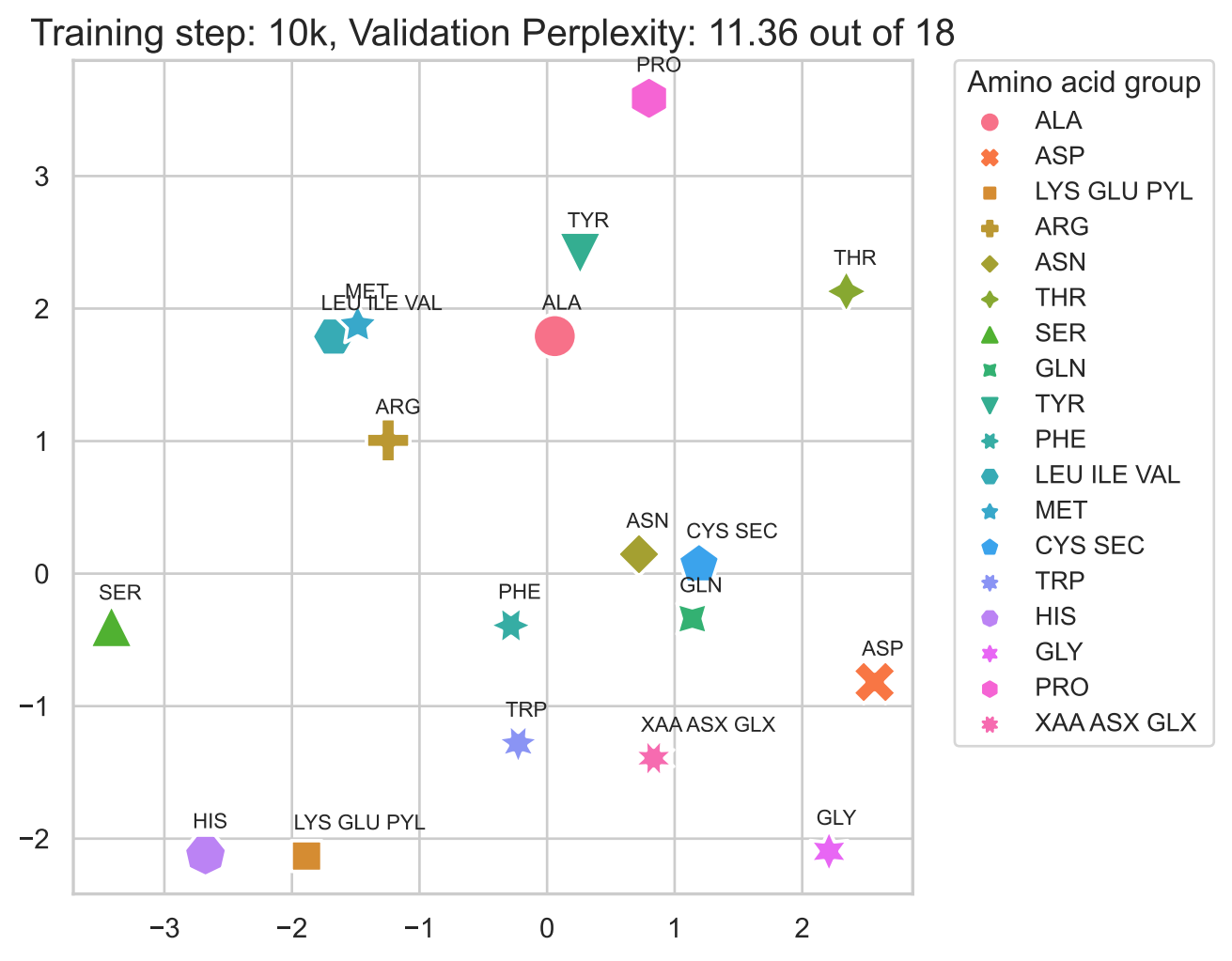
Training step: 10k, Validation Perplexity: 11.36 out of 18
PRO
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GLY
Amino acid group
ALA
ASP
LYS GLU PYL
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LEU ILE VAL
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CYS SEC
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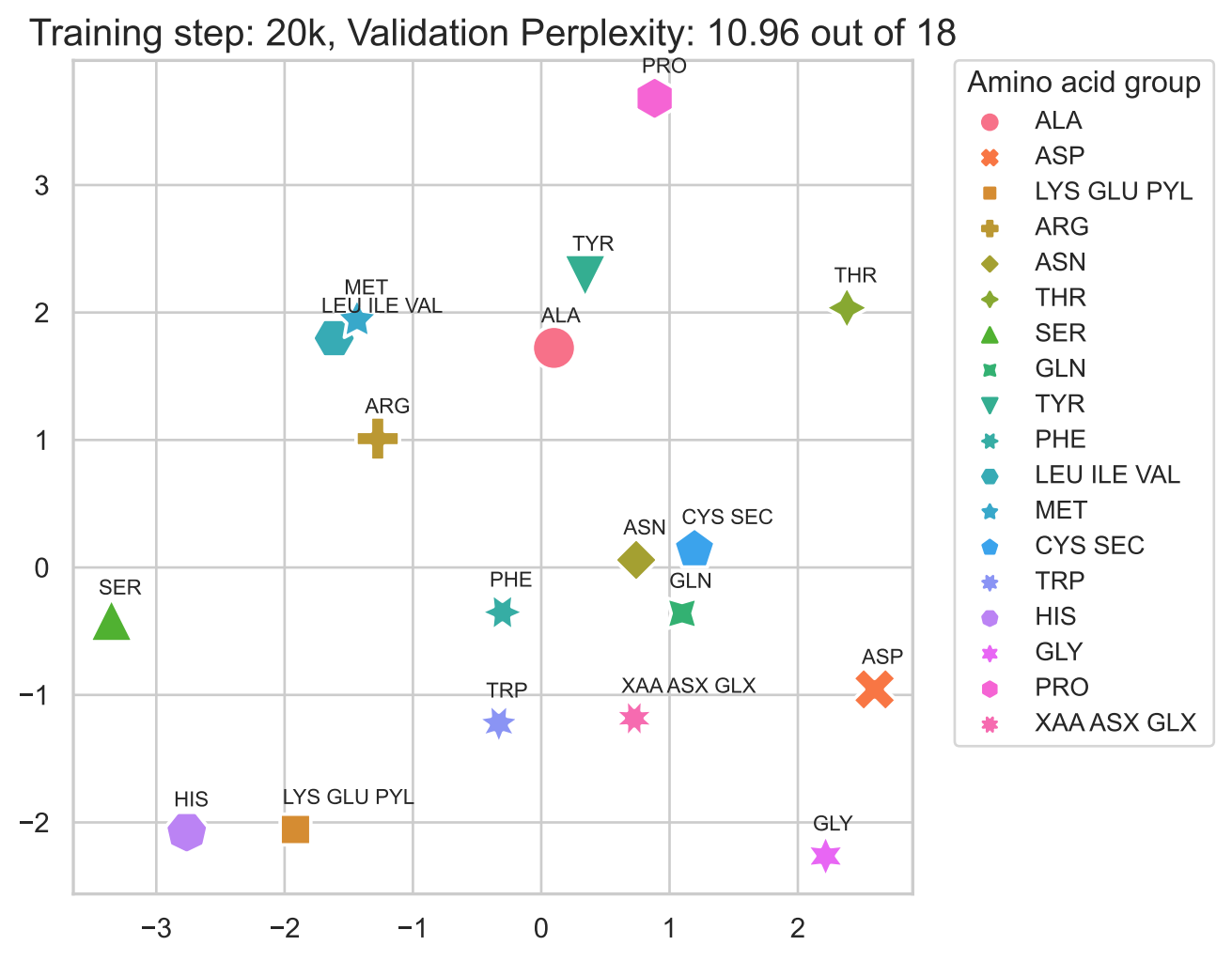
Training step: 20k, Validation Perplexity: 10.96 out of 18
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TYR
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LEU ILE VAL
ALA
ARG
ASN
CYS SEC
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PHE
GLN
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Amino acid group
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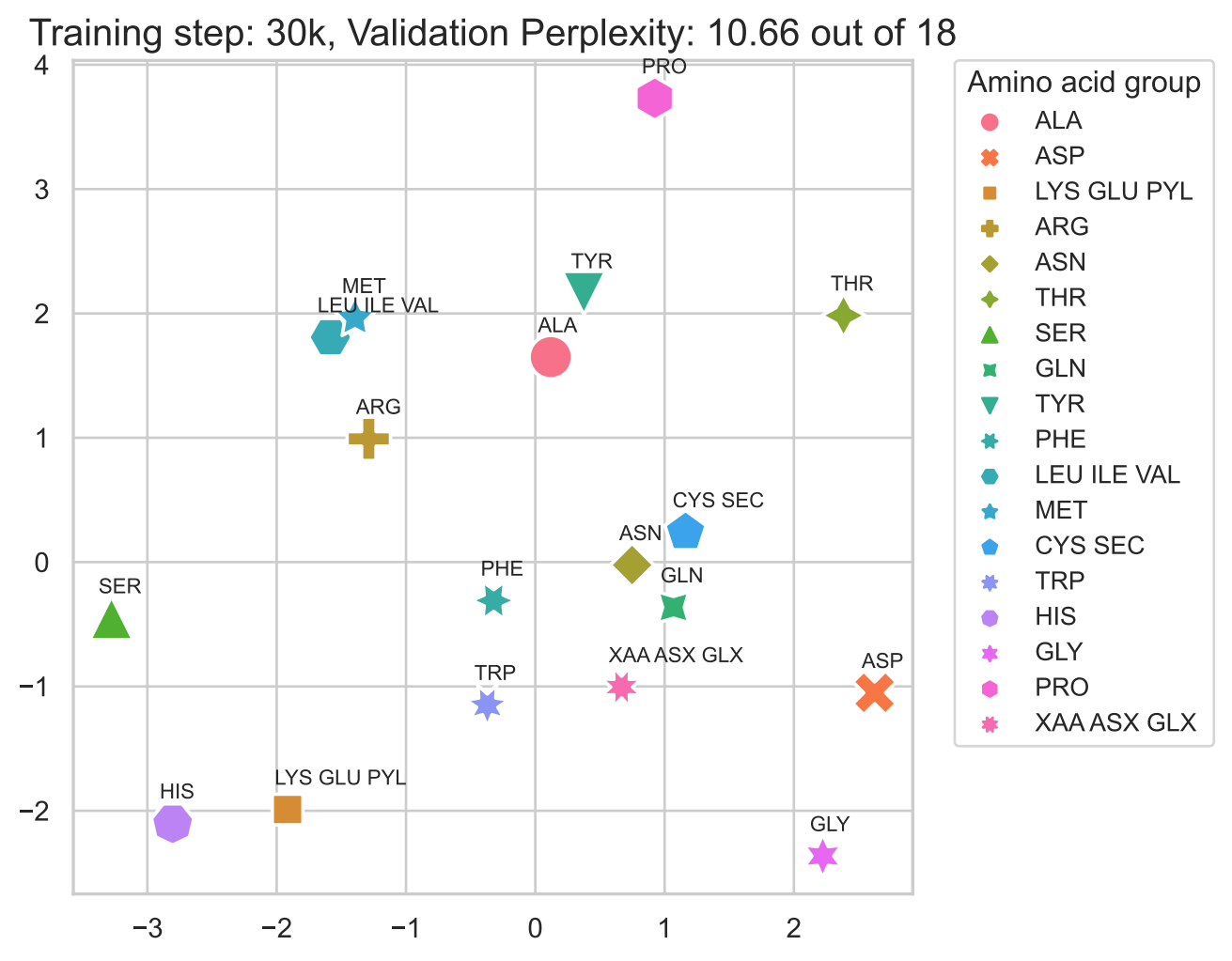
Training step: 30k, Validation Perplexity: 10.66 out of 18
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LEU ILE VAL
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CYS SEC
ASN
PHE
GLN
SER
XAA ASX GLX
ASP
TRP
LYS GLU PYL
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GLY
Amino acid group
ALA
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LYS GLU PYL
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LEU ILE VAL
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CYS SEC
TRP
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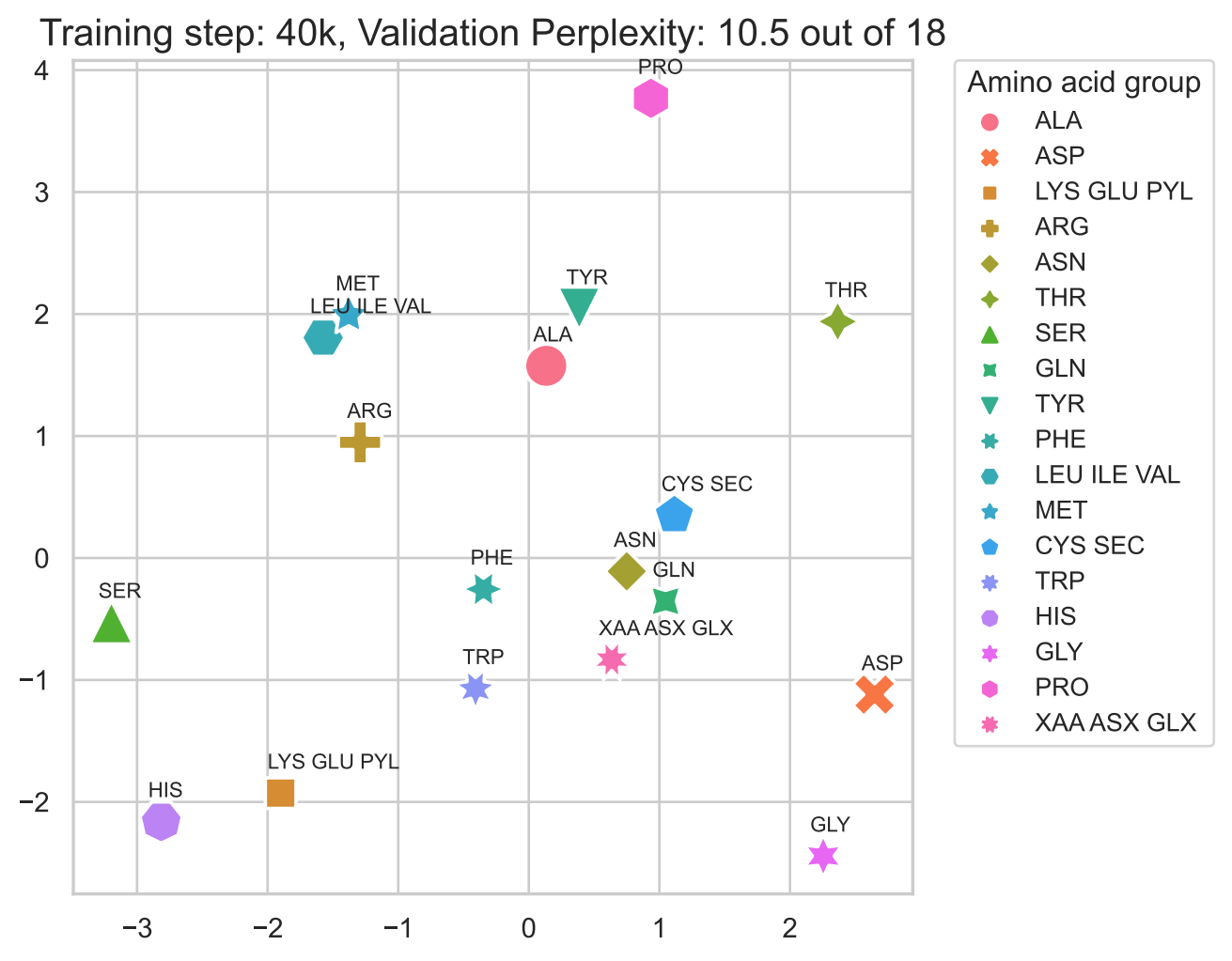
Training step: 40k, Validation Perplexity: 10.5 out of 18
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LEU ILE VAL
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Amino acid group
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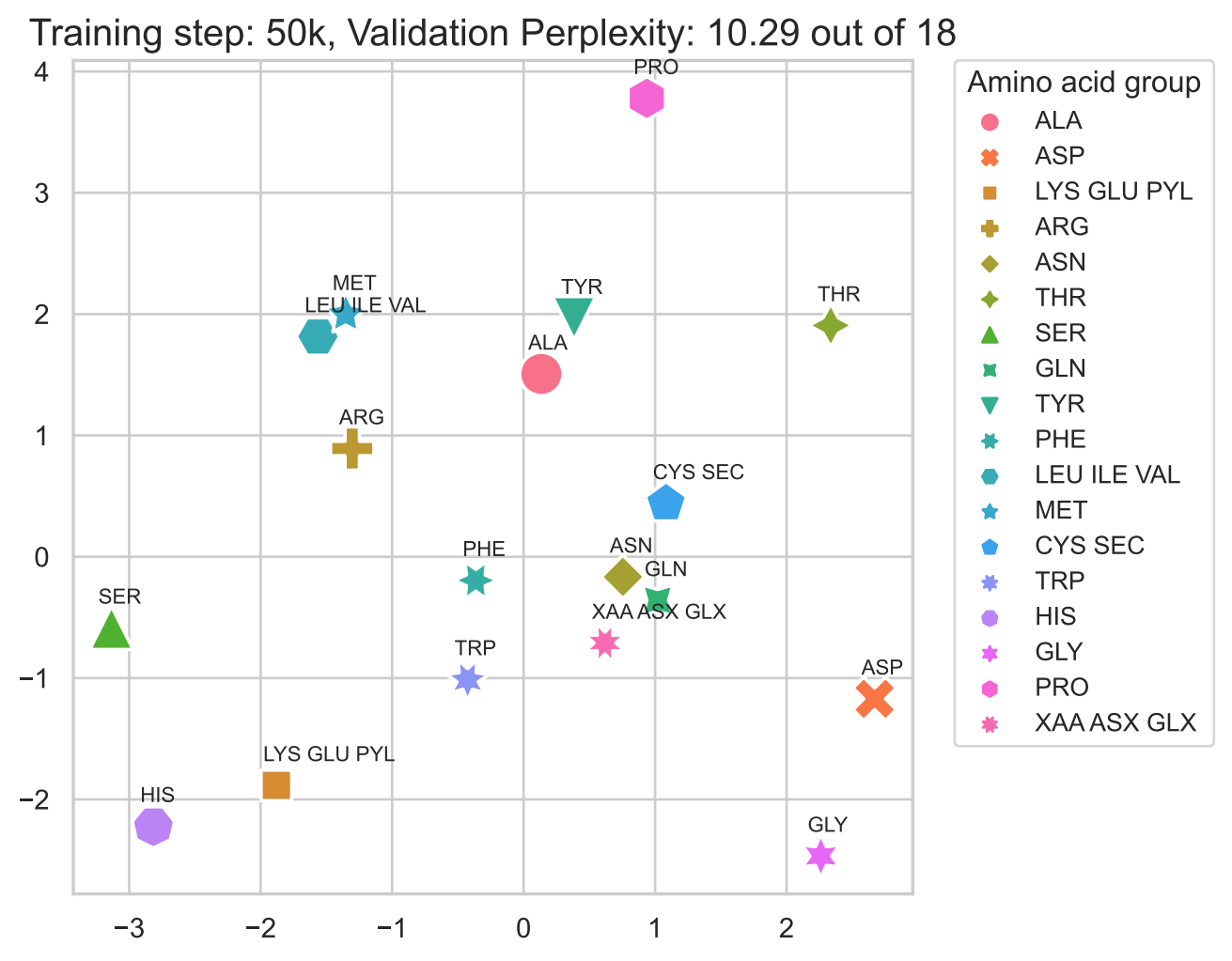
Training step: 50k, Validation Perplexity: 10.29 out of 18
PRO
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LEU ILE VAL
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GLY
Amino acid group
ALA
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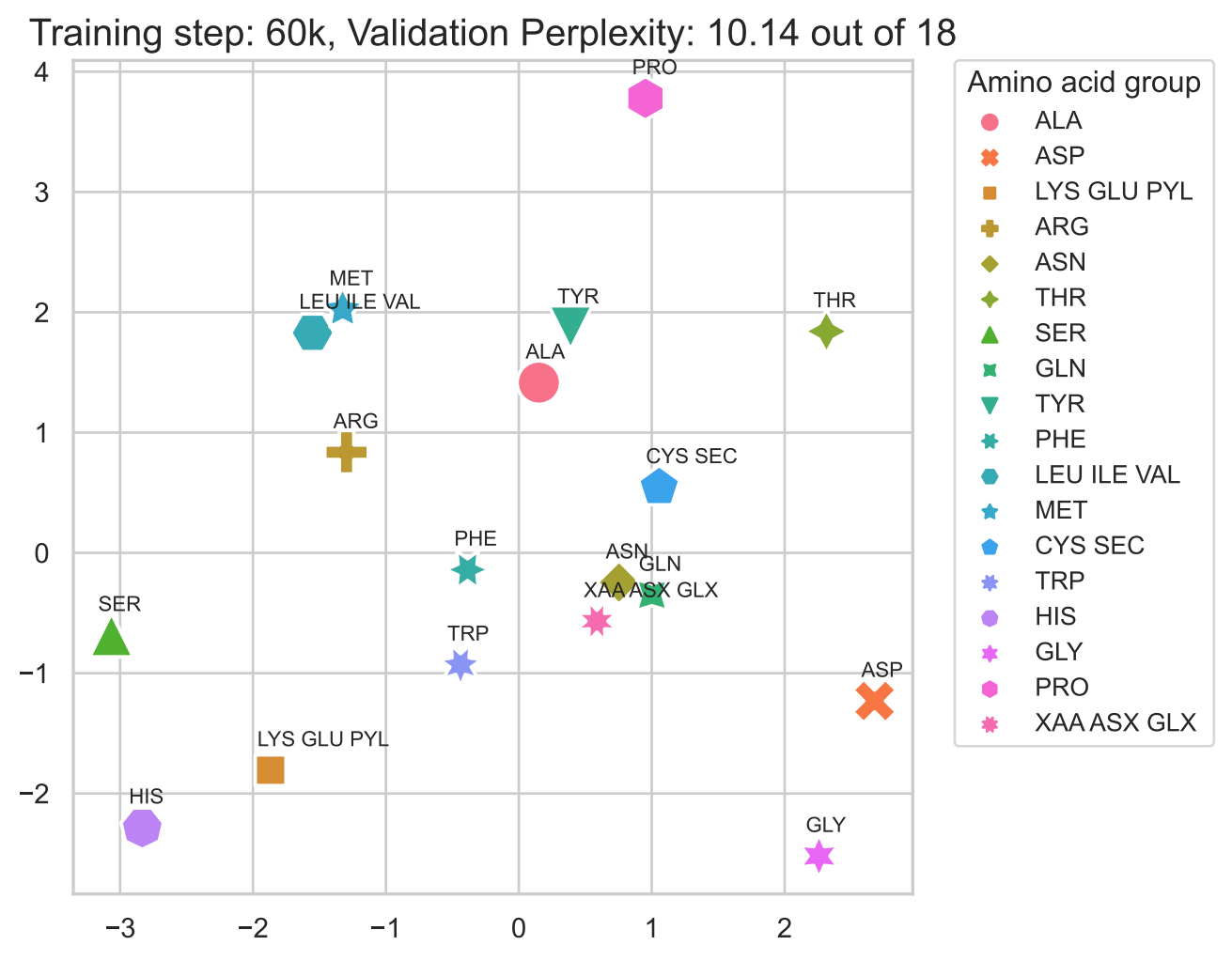
Training step: 60k, Validation Perplexity: 10.14 out of 18
PRO
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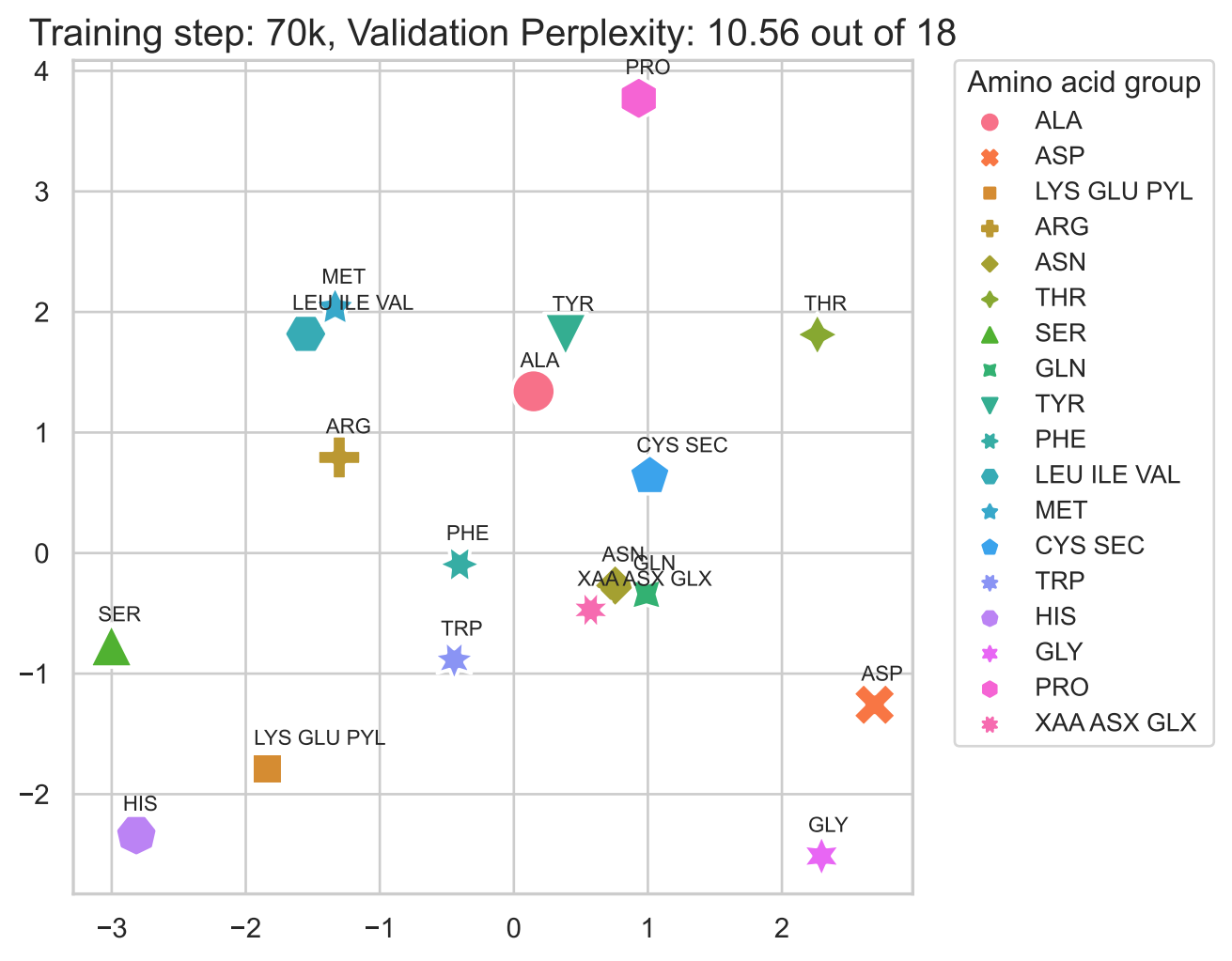
Training step: 70k, Validation Perplexity: 10.56 out of 18
PRO
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LEU ILE VAL
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Amino acid group
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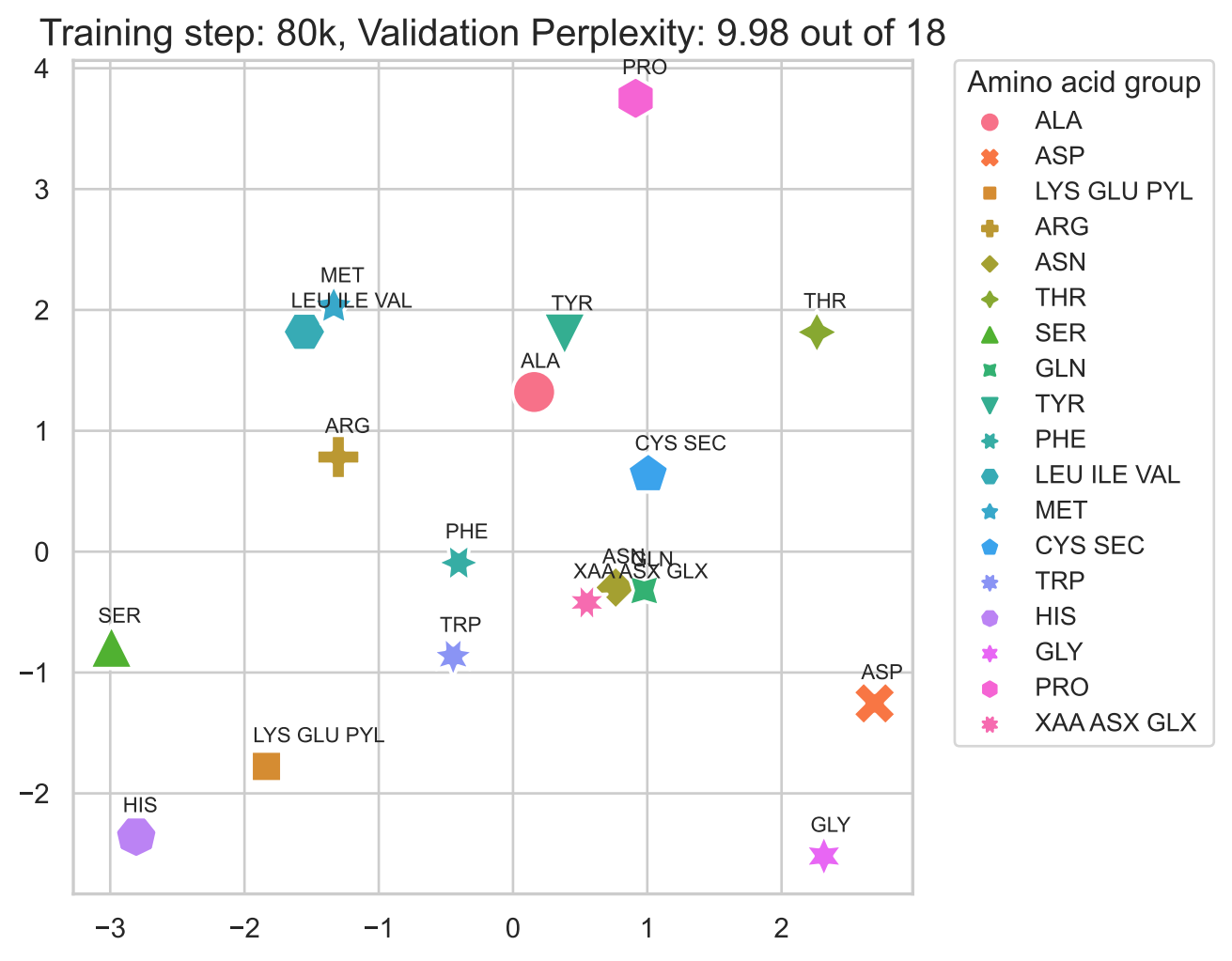
Training step: 80k, Validation Perplexity: 9.98 out of 18
PRO
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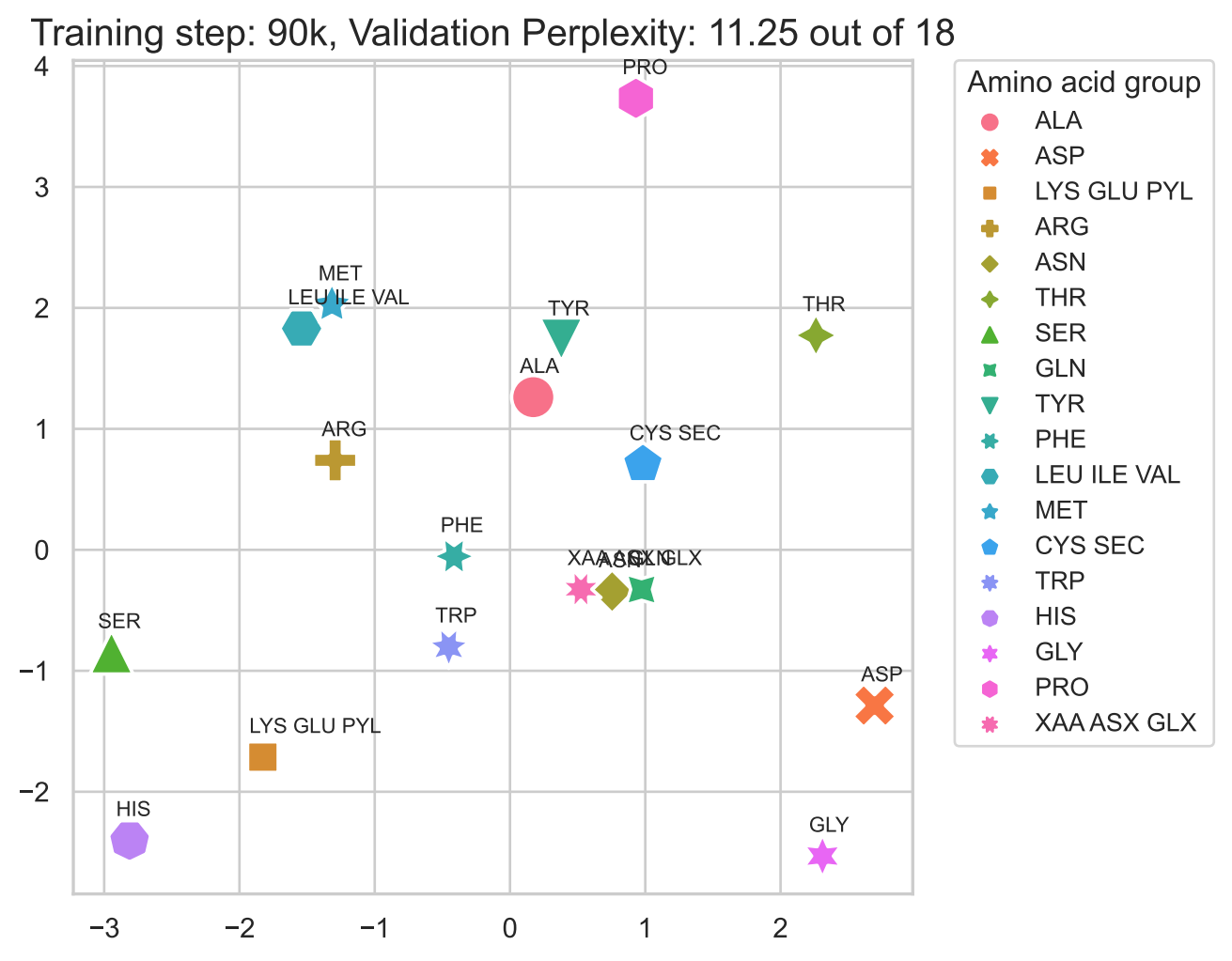
Training step: 90k, Validation Perplexity: 11.25 out of 18
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LEU ILE VAL
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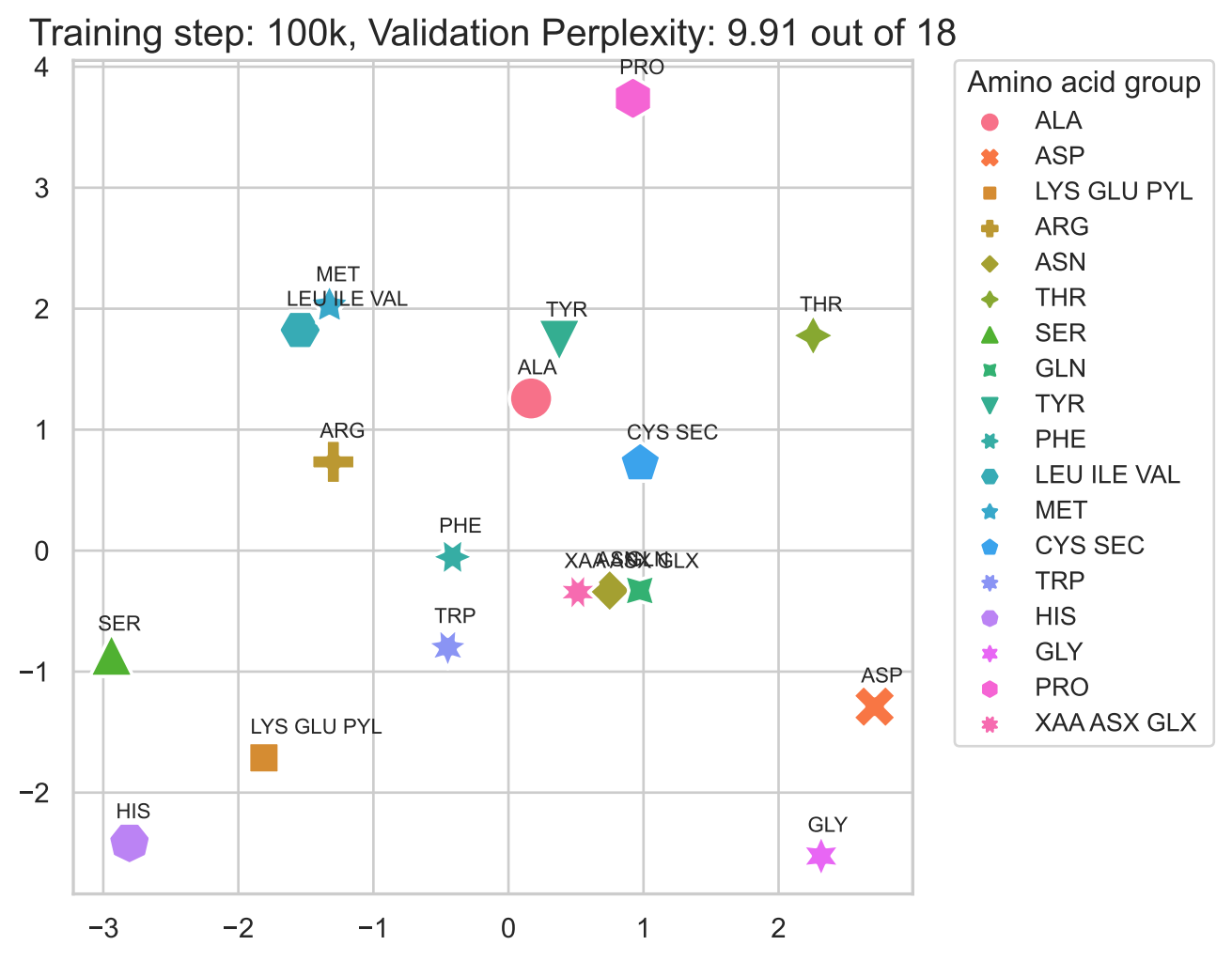
Training step: 100k, Validation Perplexity: 9.91 out of 18
PRO
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Amino acid group
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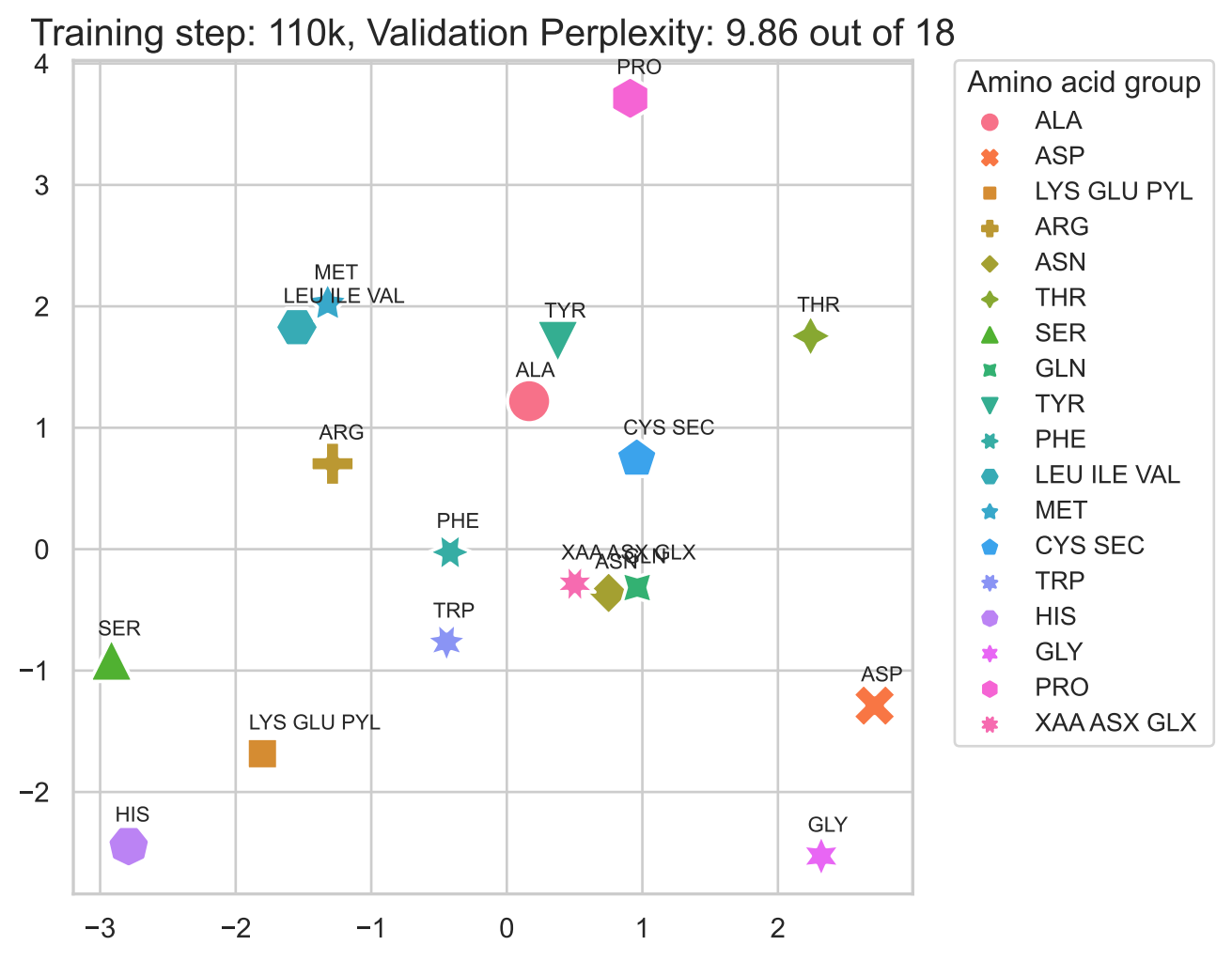
Training step: 110k, Validation Perplexity: 9.86 out of 18
PRO
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Amino acid group
ALA
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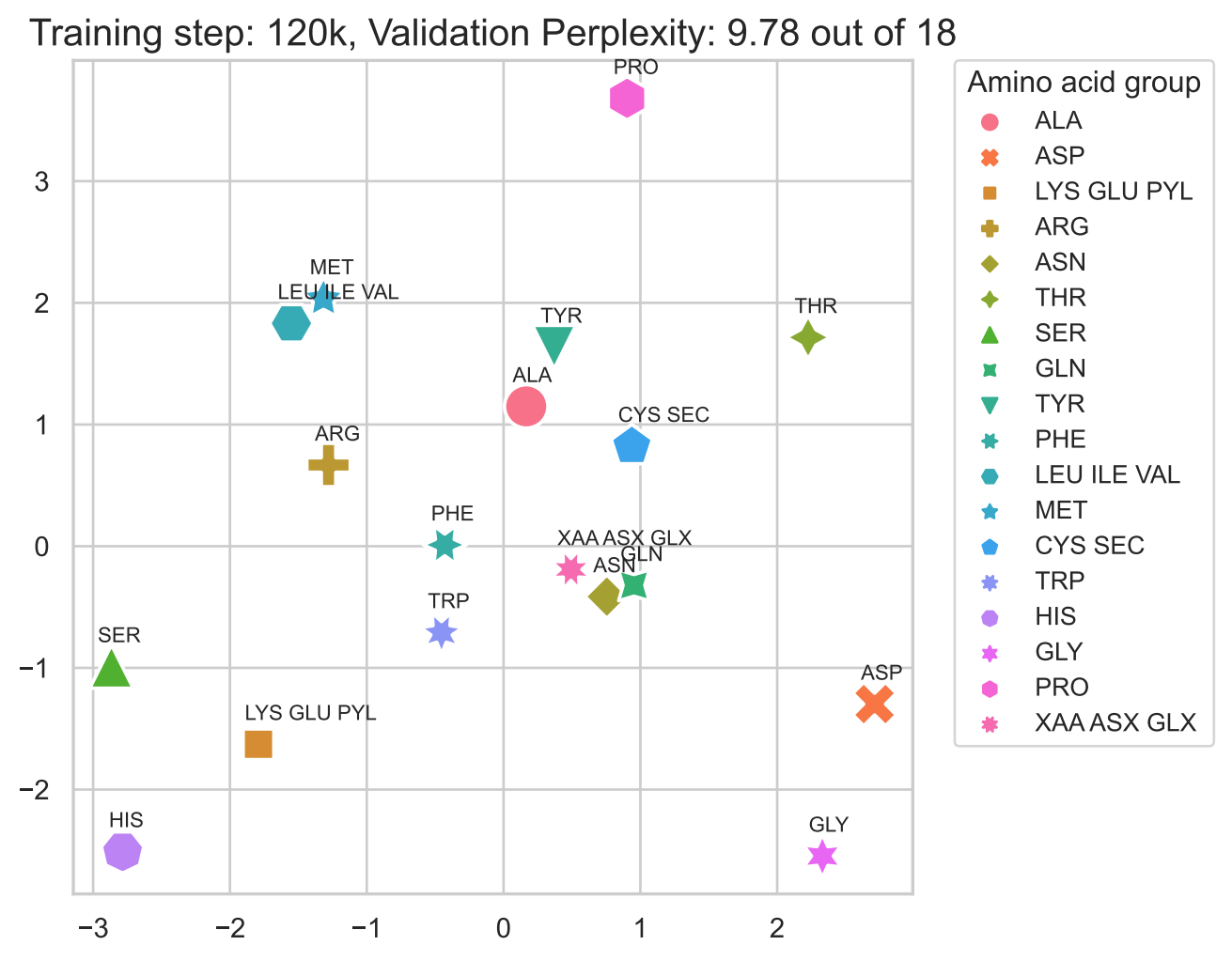
Training step: 120k, Validation Perplexity: 9.78 out of 18
PRO
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LEU ILE VAL
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Amino acid group
ALA
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CYS SEC
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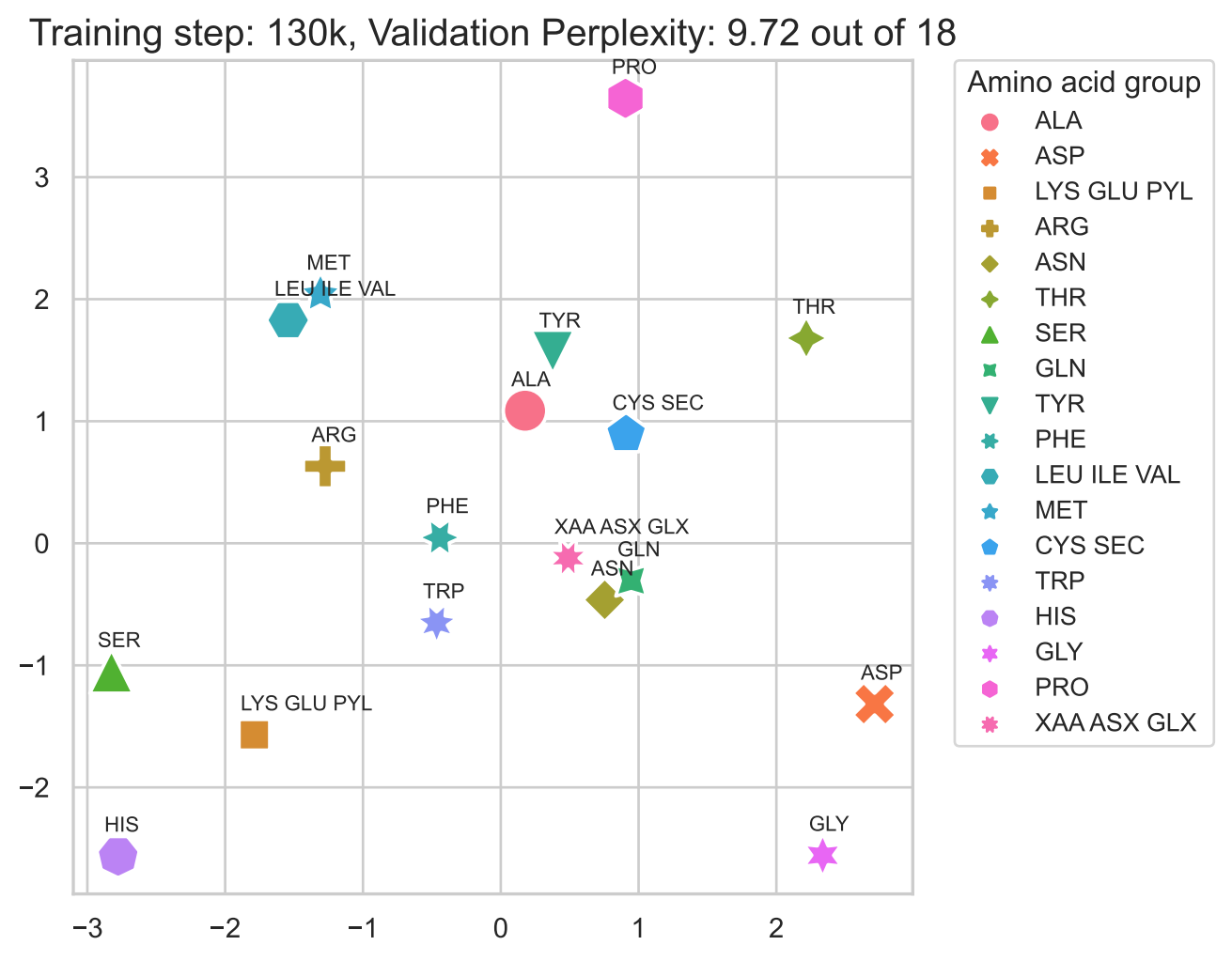
Training step: 130k, Validation Perplexity: 9.72 out of 18
PRO
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LEU ILE VAL
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CYS SEC
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XAA ASX GLX
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Amino acid group
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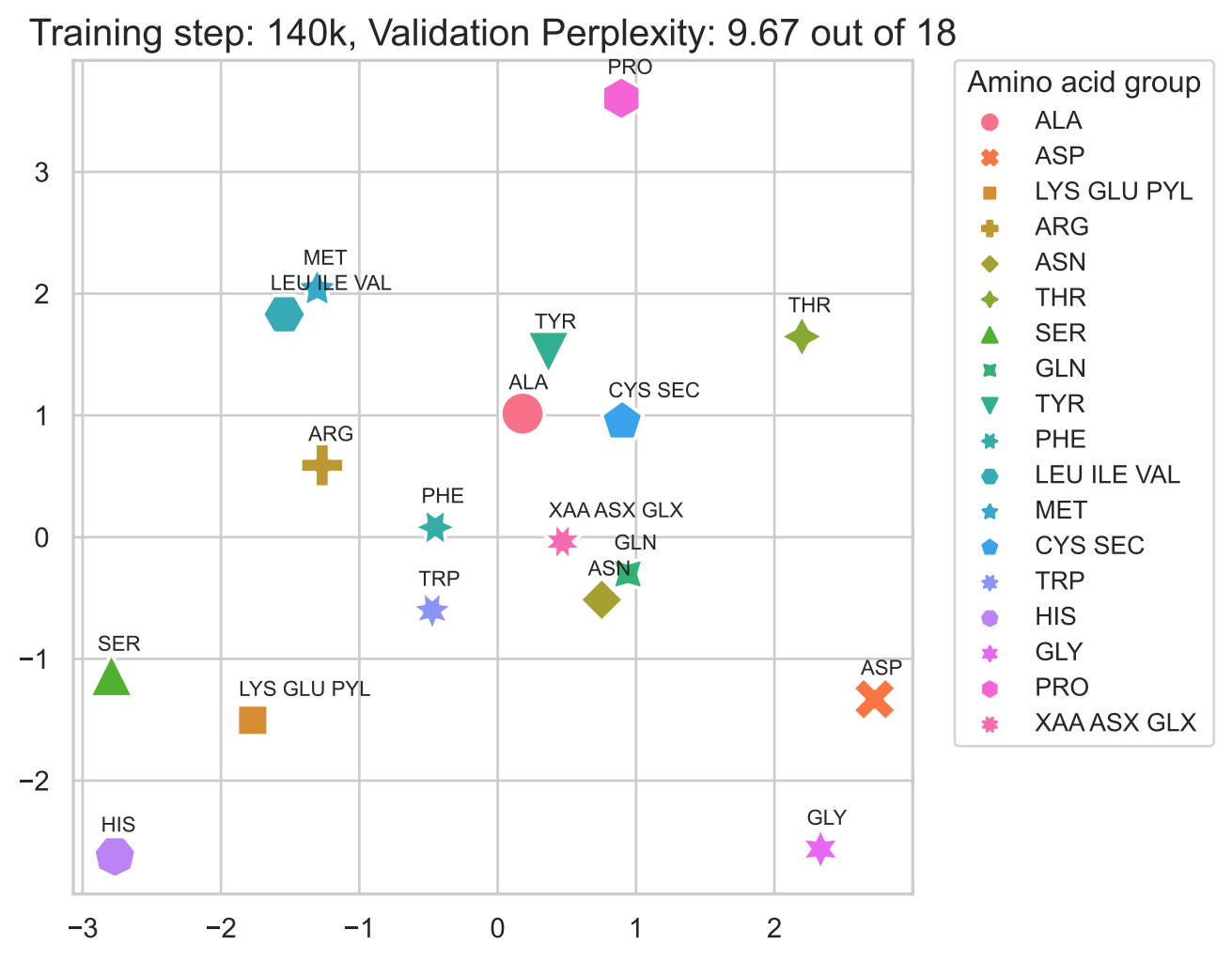
Training step: 140k, Validation Perplexity: 9.67 out of 18
PRO
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CYS SEC
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Amino acid group
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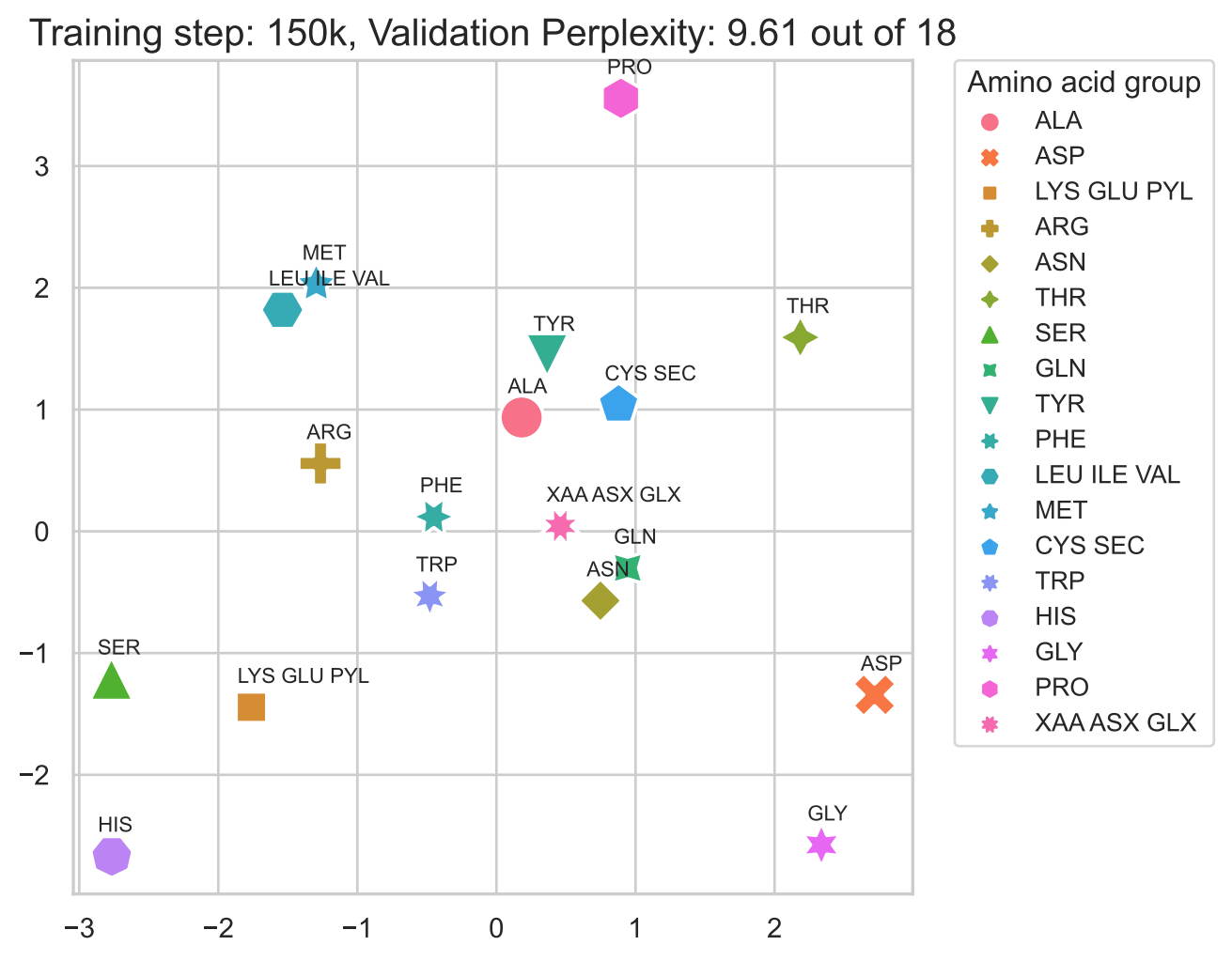
Training step: 150k, Validation Perplexity: 9.61 out of 18
PRO
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CYS SEC
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Amino acid group
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ARG
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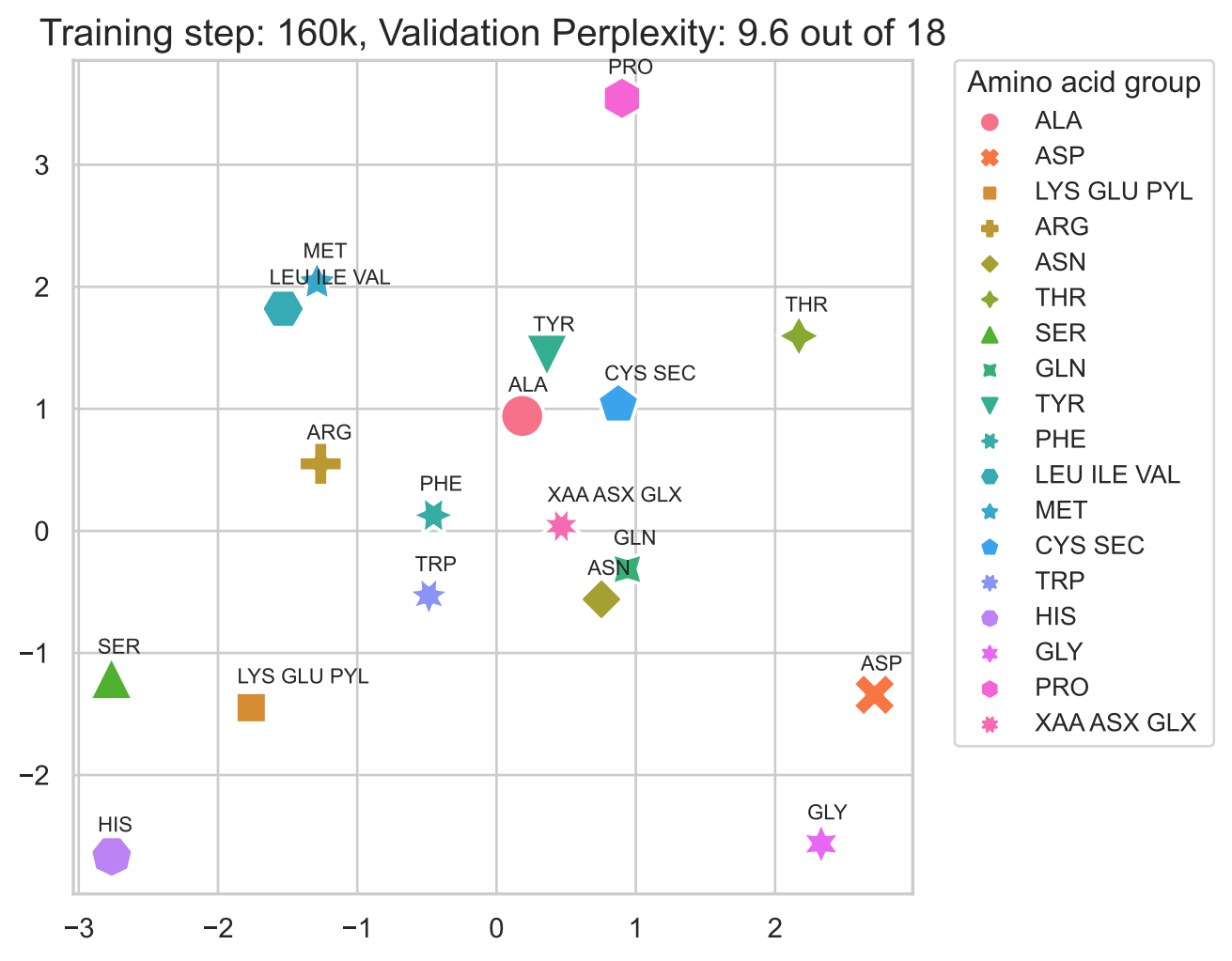
Training step: 160k, Validation Perplexity: 9.6 out of 18
PRO
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TRP
SER
LYS GLU PYL
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GLY
Amino acid group
ALA
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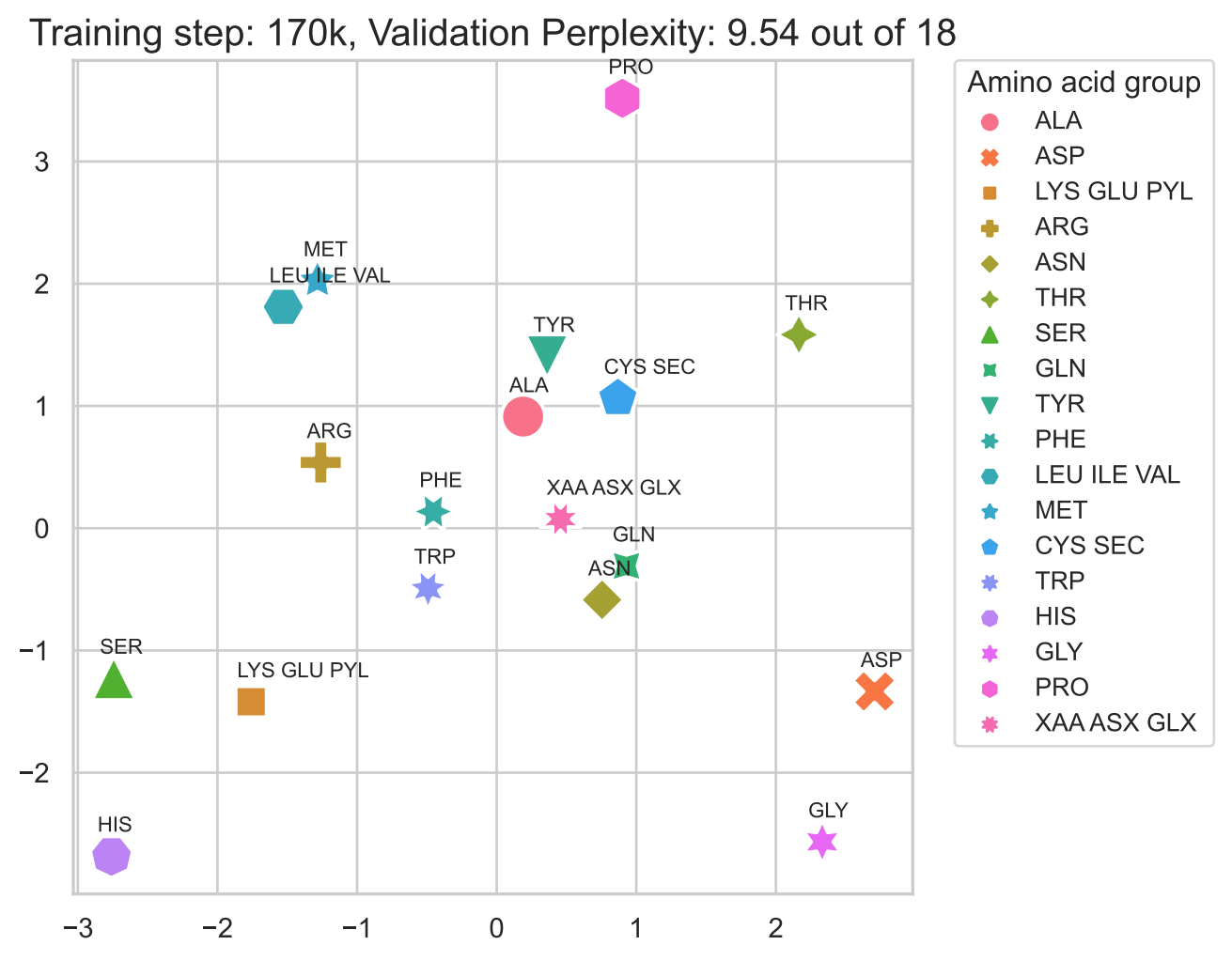
Training step: 170k, Validation Perplexity: 9.54 out of 18
PRO
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LEU ILE VAL
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Amino acid group
ALA
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PRO
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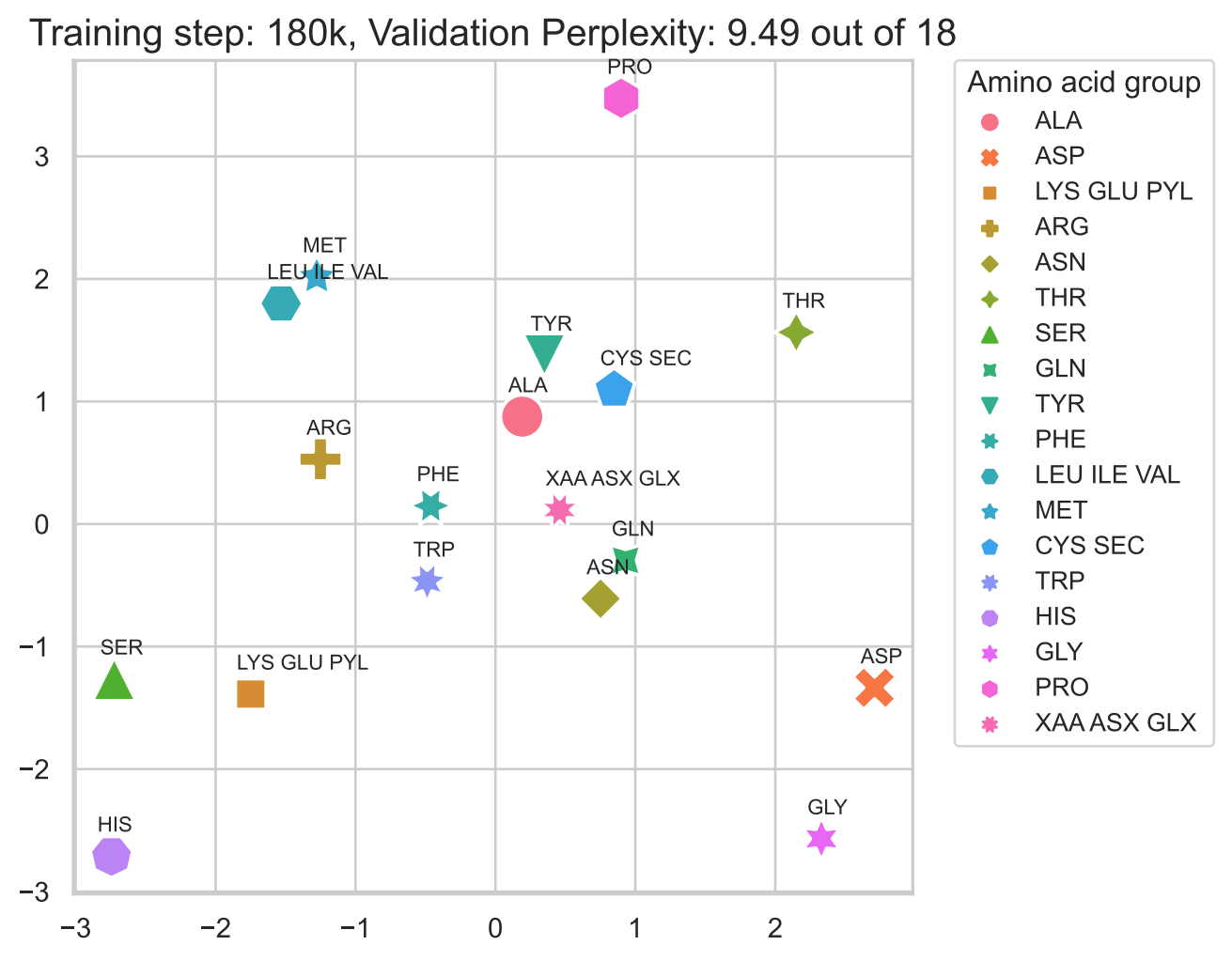
Training step: 180k, Validation Perplexity: 9.49 out of 18
PRO
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Amino acid group
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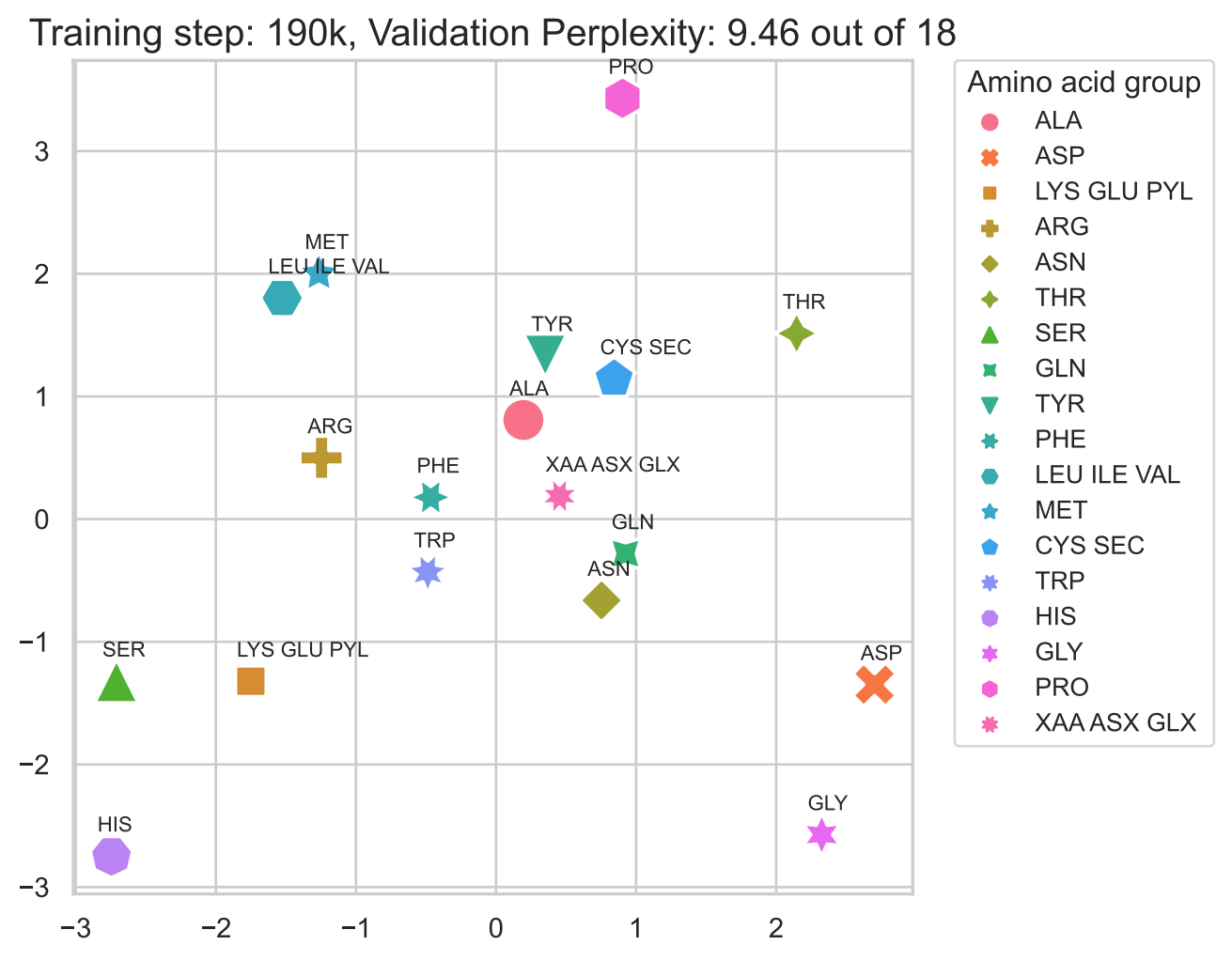
Training step: 190k, Validation Perplexity: 9.46 out of 18
PRO
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LEU ILE VAL
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CYS SEC
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GLN
TRP
ASN
SER
LYS GLU PYL
ASP
GLY
HIS
Amino acid group
ALA
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LYS GLU PYL
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LEU ILE VAL
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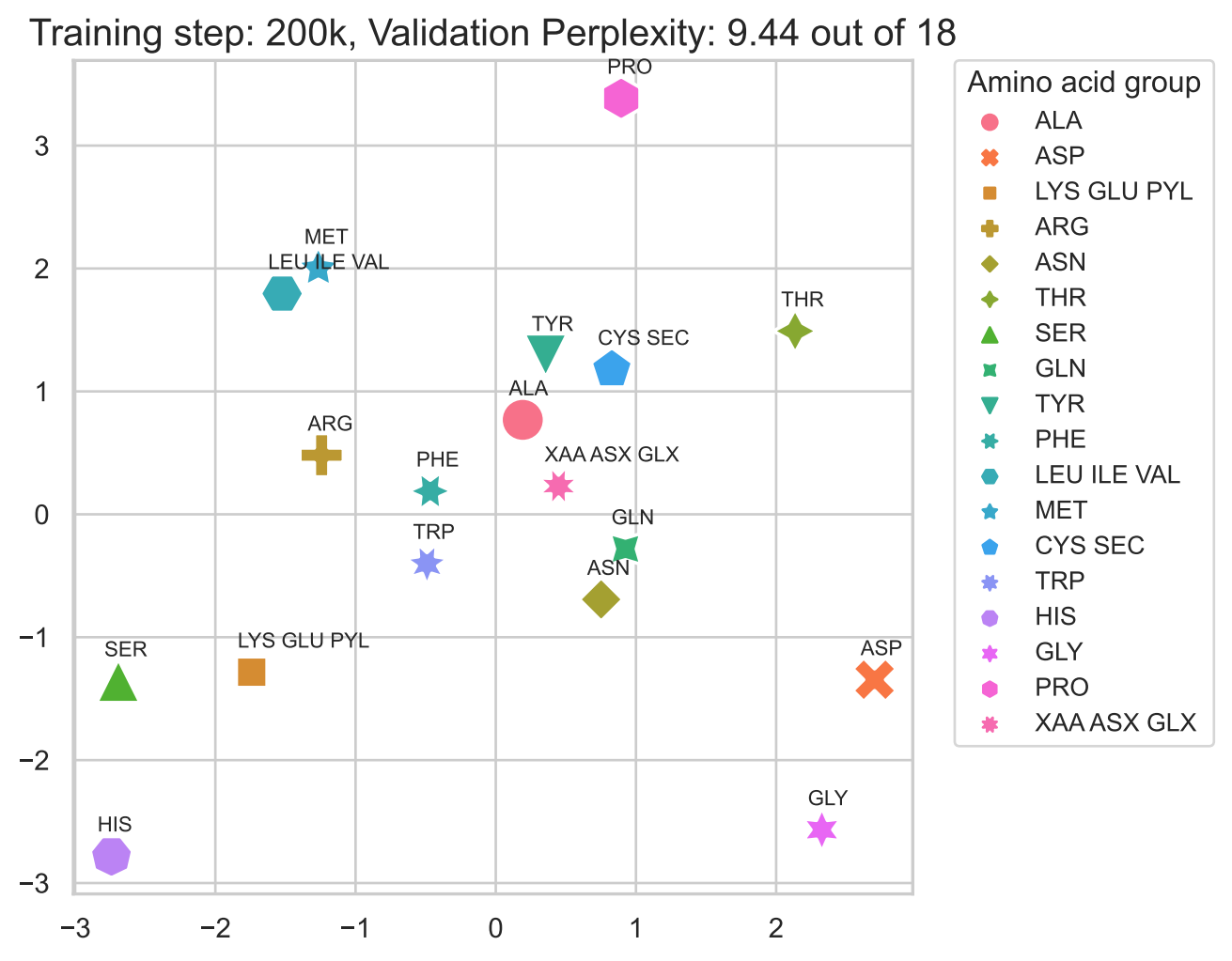
Training step: 200k, Validation Perplexity: 9.44 out of 18
PRO
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HIS
Amino acid group
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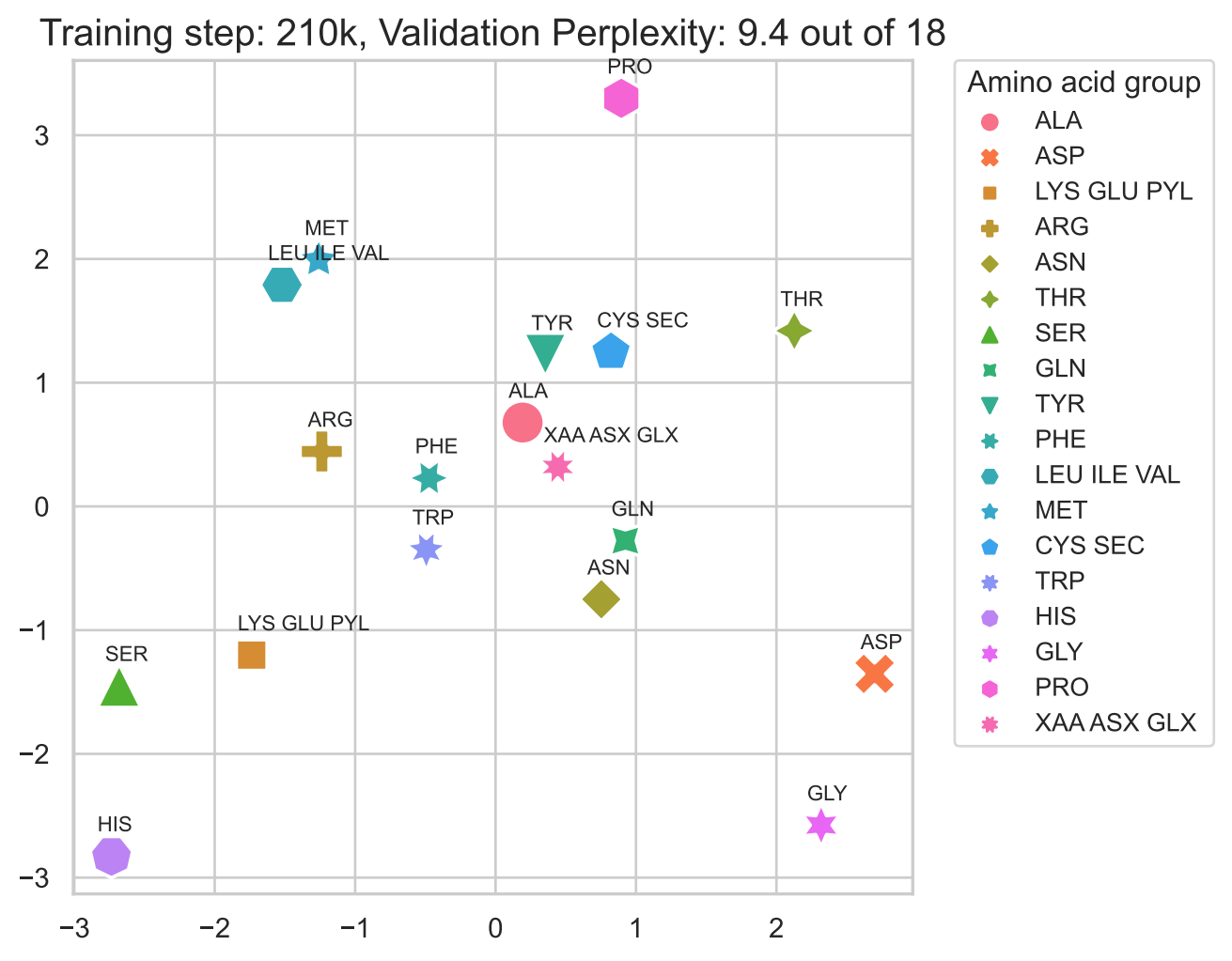
Training step: 210k, Validation Perplexity: 9.4 out of 18
PRO
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Amino acid group
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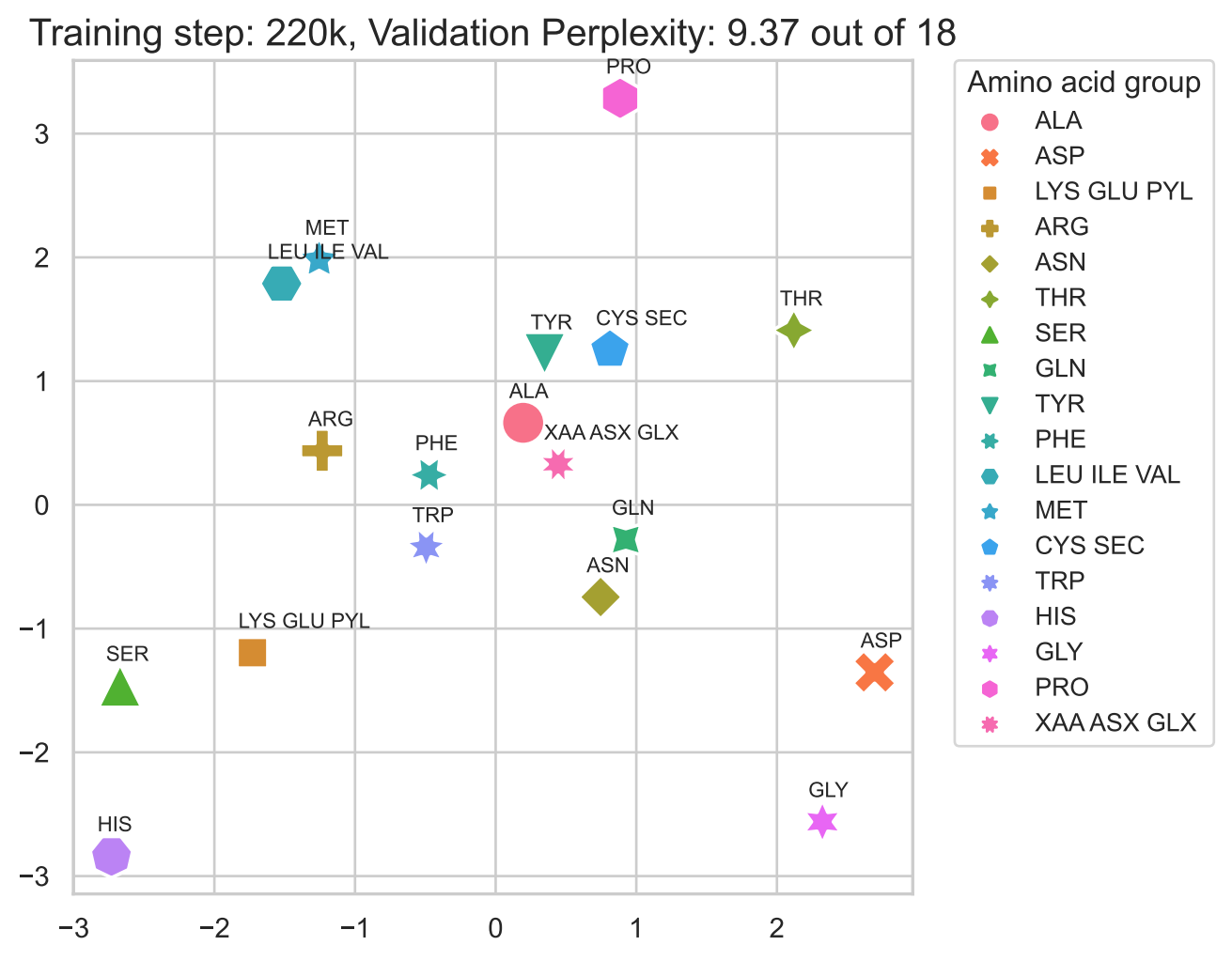
Training step: 220k, Validation Perplexity: 9.37 out of 18
PRO
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LEU ILE VAL
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CYS SEC
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Amino acid group
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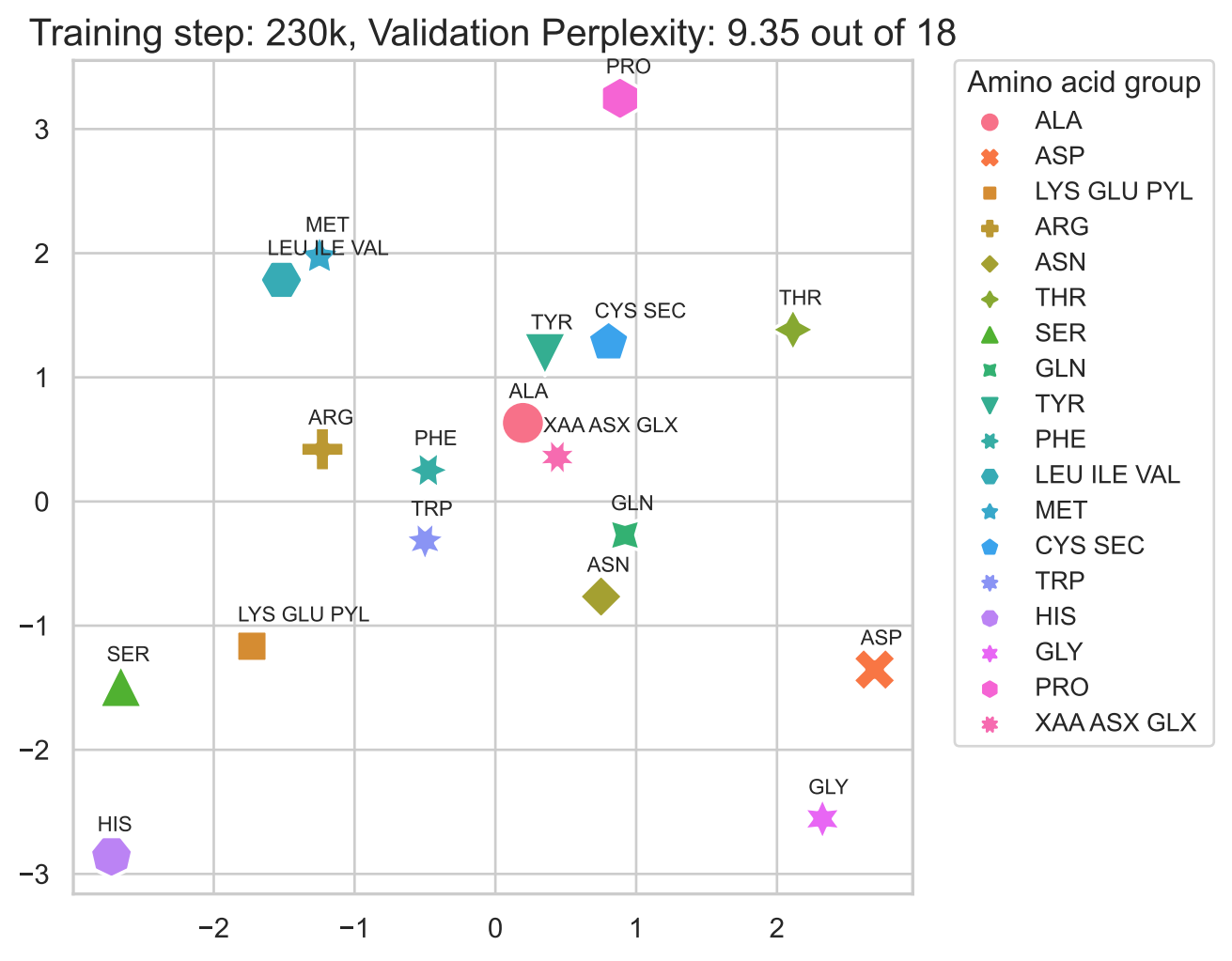
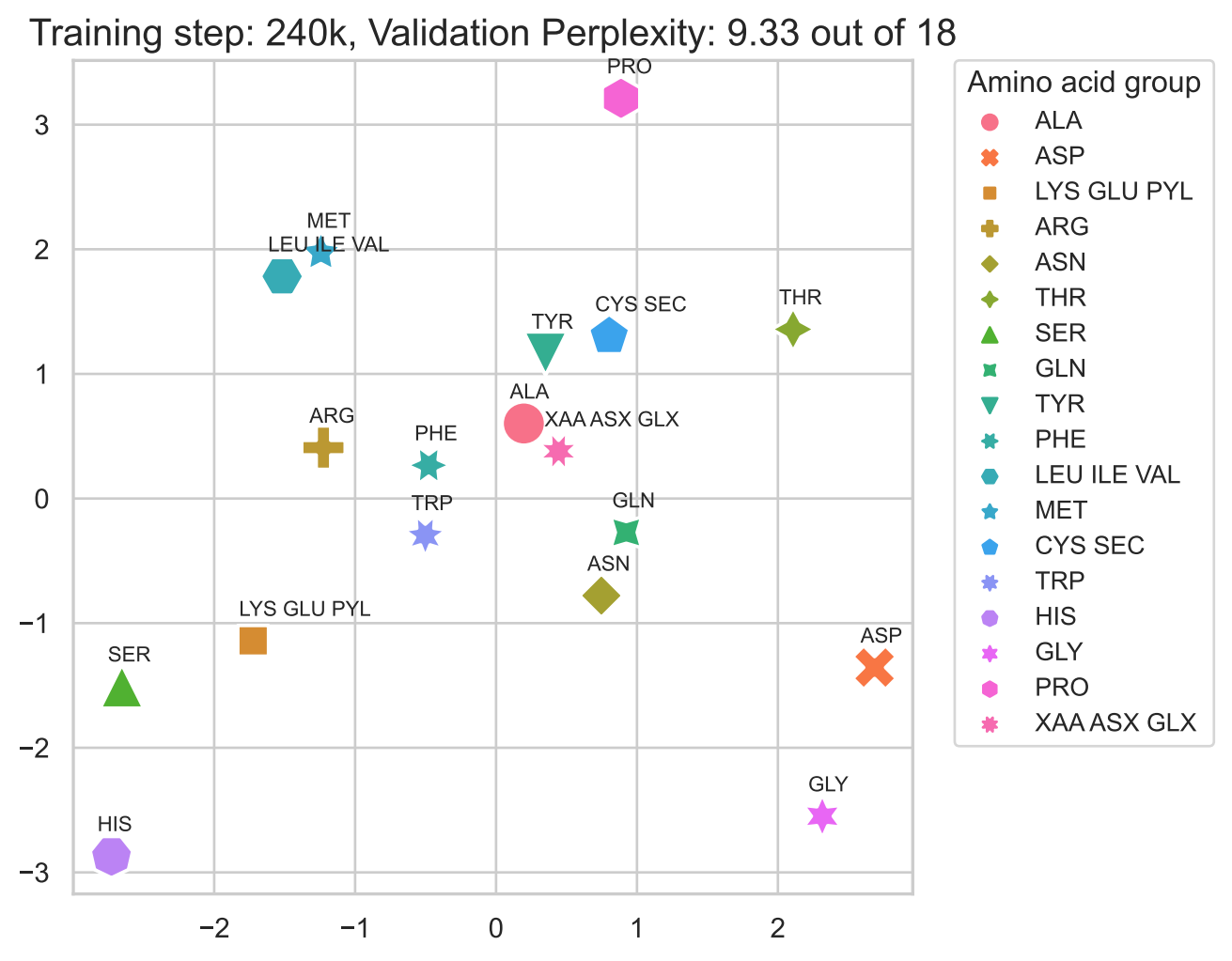
2


Training step: 230k, Validation Perplexity: 9.35 out of 18
PRO
MET
LEU ILE VAL
TYR
CYS SEC
THR
ALA
XAA ASX GLX
ARG
PHE
TRP
GLN
ASN
LYS GLU PYL
ASP
SER
GLY
HIS
Amino acid group
ALA
ASP
LYS GLU PYL
ARG
ASN
THR
SER
GLN
TYR
PHE
LEU ILE VAL
MET
CYS SEC
TRP
HIS
GLY
PRO
XAA ASX GLX
3
2
1
0
−1
−2
−3
−2
−1
0
1
2


Training step: 240k, Validation Perplexity: 9.33 out of 18
PRO
MET
LEU ILE VAL
CYS SEC
THR
TYR
ALA
XAA ASX GLX
ARG
PHE
TRP
GLN
ASN
LYS GLU PYL
ASP
SER
GLY
HIS
Amino acid group
ALA
ASP
LYS GLU PYL
ARG
ASN
THR
SER
GLN
TYR
PHE
LEU ILE VAL
MET
CYS SEC
TRP
HIS
GLY
PRO
XAA ASX GLX