```
Instrument specific search parameters (ABSciex Triple-TOF 5600)

      MS tolerance = 0.05 Da
      MSMS tolerance = 0.1 Da
      MS Std Dev=0.0011 Da
      MSMS Std Dev=0.01 Da
      Default charge states= 2-4

Fixed identification sets and probabilities

      Terminal Amidated>
                  term_spec   PepCTerm    prob  0.001

      Amino>
            Tyrosine    prob  0.0005

      Ammonia-loss>
            Asparagine  prob  0.001

      Arg-loss>
            Arginine    term_spec   PepCTerm    prob  0.001

      Arg-add>
                  term_spec   PepNTerm    prob  0.001

      Arg->Orn>
            Arginine    prob  0.0004

      Dethiomethyl>
            Methionine  prob  0.01

      Arg->GluSA>
            Arginine    prob  0.0007

      Carbamyl>
            Lysine            prob  0.0015
            Arginine    prob  0.001
            Cysteine    prob  0.00001
            Methionine  prob  0.00001

      Terminal Carbamyl>
                  term_spec   PepNTerm    prob  0.006

      Cation:Na>
            Aspartic Acid     prob  0.0001
            Glutamic Acid     prob  0.0015

      Terminal Cation:Na>
                  term_spec   PepCTerm    prob  0.00001

      Cation:K>
            Aspartic Acid     prob  0.0016
            Glutamic Acid     prob  0.0022

      Terminal Cation:K>
                  term_spec   PepCTerm    prob  0.00001

      Cation:Cu[I]>
            Aspartic Acid     prob  0.00001
            Glutamic Acid     prob  0.00001

      Terminal Cation:Cu[I]>
```

```
           term_spec   PepCTerm    prob  0.00001

Cys->Dha>
      Cysteine    prob  0.001

Deamidated>
      Asparagine  prob  0.16
      Glutamine   prob  0.11
      Asn Or Asp  prob  0.16
      Gln Or Glu  prob  0.11

Dehydrated>
      Aspartic Acid     prob  0.0023
      Glutamic Acid     prob  0.002
      Serine            prob  0.0026
      Threonine   prob  0.003

Dehydro>
      Cysteine    prob  0.01

Didehydro>
      Threonine   prob  0.0001

Terminal Didehydro>
      Lysine      term_spec   PepCTerm    prob  0.0001

Delta:H(2)C(2)>
      Lysine            prob  0.004
      Histidine   prob  0.012

Terminal Delta:H(2)C(2)>
           term_spec   PepNTerm    prob  0.001

Delta:H(4)C(2)>
      Lysine      prob  0.001
      Histidine   prob  0.001

Terminal Delta:H(4)C(2)>
           term_spec   PepNTerm    prob  0.001

Formyl>
      Lysine            prob  0.002

Terminal Formyl>
           term_spec   PepNTerm    prob  0.002

Gln->pyro-Glu>
      Glutamine   term_spec   PepNTerm    prob  0.27

Glu->pyro-Glu>
      Glutamic Acid     term_spec   PepNTerm    prob  0.11

Lys-loss>
      Lysine      term_spec   PepCTerm    prob  0.001

Lys-add>
           term_spec   PepNTerm    prob  0.001

Met->Hse>
      Methionine  prob  0.00001

Met->Hsl>
```

```
      Methionine  prob  0.00001

   Oxidation>
      Methionine  prob  0.15
      Cysteine    prob  0.00001
      Histidine   prob  0.005
      Tryptophan  prob  0.013
      Proline           prob  0.01

   Dioxidation>
      Methionine  prob  0.01
      Cysteine    prob  0.005
      Tryptophan  prob  0.013
      Phenylalanine     prob  0.00001

   Trioxidation>
      Cysteine    prob  0.0001
      Tryptophan  prob  0.0005

   Pro->pyro-Glu>
      Proline           prob  0.0006

   Pro->Pyrrolidinone>
      Proline     term_spec   PepCTerm    prob  0.0001

   Trp->Hydroxykynurenin>
      Tryptophan  prob  0.002

   Trp->Kynurenin>
      Tryptophan  prob  0.02


Biological identification sets and probabilities
   Acetyl>
      Lysine            prob  0.00003
      Serine            prob  0.00015
      Threonine   prob  0.00015
      Cysteine    prob  0.001

   Terminal Acetyl>
            term_spec   PepNTerm    prob  0.004

   Protein Terminal Acetyl>
            term_spec   ProtNTerm   prob  0.1

   Protein Terminal Amidated>
            term_spec   ProtCTerm   prob  0.0001

   Amidino>
      Cysteine    prob  0.0001

   Protein Terminal Ammonia-loss>
      Serine      term_spec   ProtNTerm   prob  0.001
      Threonine   term_spec   ProtNTerm   prob  0.001

   Archaeol>
      Cysteine    prob  0.0001

   Biotin>
      Lysine            prob  0.00004

   Protein Terminal Biotin>
```

```
            term_spec   ProtNTerm   prob  0.00001

Bromo>
      Tryptophan  prob  0.0005
      Phenylalanine     prob  0.00001
      Histidine   prob  0.00003
      Tyrosine    prob  0.00001

Dibromo>
      Tyrosine    prob  0.00005

Butyryl>
      Lysine            prob  0.00001

Carboxy>
      Aspartic Acid     prob  0.00015
      Glutamic Acid     prob  0.0003
      Methionine prob  0.0001
      Lysine            prob  0.0001

Carboxy->Thiocarboxy>
      Glycine     term_spec   ProtCTerm   prob  0.0001

Carboxyethyl>
      Lysine            prob  0.0001

CHDH>
      Aspartic Acid     prob  0.0001

Chloro>
      Tyrosine    prob  0.00008

Dichloro>
      Tyrosine    prob  0.0001

Cholesterol>
            term_spec   ProtCTerm   prob  0.0001

CuSMo>
      Cysteine    prob  0.0001

Cyano>
      Cysteine    prob  0.0001

Cysteinyl>
      Cysteine    prob  0.00001

Cys->Hcy>
      Cysteine    prob  0.0001

Cys->Oxoalanine>
      Cysteine    prob  0.00001

Cys->PyruvicAcid>
      Cysteine    term_spec   ProtNTerm   prob  0.0001

Deamidated>
      Arginine    prob  0.007

Protein Terminal Deamidated>
      Phenylalanine     term_spec   ProtNTerm   prob  0.0001
```

```
Decanoyl>
      Serine            prob  0.0001
      Threonine   prob  0.0001

Dehydrated>
      Tyrosine    prob  0.001

Protein Terminal Dehydrated>
      Asparagine  prob  0.001 term_spec   ProtCTerm
      Glutamine   prob  0.001 term_spec   ProtCTerm

Delta:S(-1)Se(1)>
      Cysteine    prob  0.0001
      Methionine  prob  0.0001

Delta:Se(1)>
      Cysteine    prob  0.0001

Deoxy>
      Aspartic Acid     prob  0.0001

Diacylglycerol>
      Cysteine    prob  0.0001

Didehydro>
      Serine            prob  0.0001
      Tyrosine    prob  0.0001

Didehydroretinylidene>
      Lysine            prob  0.0001

Diironsubcluster>
      Cysteine    prob  0.0001

Diphthamide>
      Histidine   prob  0.00016

Dipyrrolylmethanemethyl>
      Cysteine    prob  0.0001

FAD>
      Cysteine    prob  0.00001
      Histidine   prob  0.00001
      Tyrosine    prob  0.00001

FMN>
      Serine            prob  0.0001
      Threonine   prob  0.0001

FMNC>
      Cysteine    prob  0.00001

FMNH>
      Cysteine    prob  0.0001
      Histidine   prob  0.0001

Farnesyl>
      Cysteine    prob  0.0004

Hydroxyfarnesyl>
      Cysteine    prob  0.00001
```

```
FormaldehydeAdduct>
      Tryptophan  prob  0.003

Protein Terminal Formyl>
           term_spec   ProtNTerm   prob  0.00001

FormylMet>
           term_spec   ProtNTerm   prob  0.00001

Geranylgeranyl>
      Cysteine    prob  0.00001


Protein Terminal Hex>
           term_spec   ProtNTerm   prob  0.00001

dHex>
      Serine      prob  0.00004
      Threonine   prob  0.00001
      Asparagine  prob  0.00007

HexNAc>
      Serine      prob  0.0008
      Threonine   prob  0.0003
      Asparagine  prob  0.0007

Hex(1)HexNAc(1)>
      Serine      prob  0.00001
      Threonine   prob  0.00001
      Asparagine  prob  0.00001

Hex(1)HexNAc(1)NeuAc(1)>
      Serine            prob  0.00001
      Threonine   prob  0.00005
      Asparagine  prob  0.00003

Hex(1)HexNAc(1)NeuAc(2)>
      Serine            prob  0.00001
      Threonine   prob  0.00003
      Asparagine  prob  0.00002

Hydroxycinnamyl>
      Cysteine    prob  0.0001

Hydroxyheme>
      Glutamic Acid     prob  0.0001

Hydroxymethyl>
      Asparagine  prob  0.0001

Hydroxytrimethyl>
      Lysine            prob  0.0001

Hypusine>
      Lysine            prob  0.0001

Iodo>
      Tyrosine    prob  0.0007
      Histidine   prob  0.0001

Diiodo>
      Tyrosine    prob  0.00002
```

```
      Histidine   prob  0.00001

Lipoyl>
      Lysine            prob  0.00001

Lys->Allysine>
      Lysine            prob  0.0003

Lys->Hydroxyallysine>
      Lysine            prob  0.00013

Lys->AminoadipicAcid>
      Lysine            prob  0.0001

Protein Terminal Lys-loss>
      Lysine      term_spec   ProtCTerm   prob  0.001

Met->Hcy>
      Methionine  prob  0.001

Methyl>
      Arginine    prob  0.0003
      Histidine   prob  0.002
      Lysine            prob  0.0004
      Asparagine  prob  0.0005
      Glutamine   prob  0.0005
      Cysteine    prob  0.001
      Isoleucine  prob  0.0002
      Leucine           prob  0.0002
      Serine            prob  0.0002
      Threonine   prob  0.0004
      Aspartic Acid     prob  0.001
      Glutamic Acid     prob  0.001

Protein N-Terminal Methyl>
            term_spec   ProtNTerm   prob  0.0001

Protein C-Terminal Methyl>
            term_spec   ProtCTerm   prob  0.0001

Dimethyl>
      Arginine    prob  0.0009
      Lysine            prob  0.0006
      Asparagine  prob  0.0001

Protein Terminal Dimethyl>
      Proline     term_spec   ProtNTerm   prob  0.0001

Trimethyl>
      Arginine    prob  0.00005
      Lysine            prob  0.0006
      Alanine           prob  0.00001

Methyl+Deamidated>
      Glutamine   prob  0.0001

Methylpyrroline>
      Lysine            prob  0.0001

Methylthio>
      Asparagine  prob  0.00001
      Aspartic Acid     prob  0.00002
```

```
Microcin>
           term_spec   ProtCTerm   prob  0.0001

MicrocinC7>
           term_spec   ProtCTerm   prob  0.0001

Molybdopterin>
      Cysteine    prob  0.0001

MolybdopterinGD>
      Cysteine    prob  0.0001
      Aspartic Acid     prob  0.00002

MolybdopterinGD+Delta:S(-1)Se(1)>
      Cysteine    prob  0.0001

Myristoyl>
      Lysine            prob  0.0001
      Cysteine    prob  0.0001

Protein Terminal Myristoyl>
      Glycine     term_spec   ProtNTerm   prob  0.0001

NeuAc>
      Serine            prob  0.00001
      Threonine   prob  0.00001
      Asparagine  prob  0.00001

NeuGc>
      Serine            prob  0.00001
      Threonine   prob  0.00001
      Asparagine  prob  0.00002

Nicotinyl>
      Lysine            prob  0.00007

Nitro>
      Tyrosine    prob  0.0001
      Tryptophan  prob  0.0003

Octanoyl>
      Serine            prob  0.0001
      Threonine   prob  0.0001

Oxidation>
      Aspartic Acid     prob  0.0009
      Asparagine  prob  0.0012
      Cysteine    prob  0.001
      Phenylalanine     prob  0.001
      Tyrosine    prob  0.0013
      Lysine            prob  0.00005
      Arginine    prob  0.0014
      Proline     prob  0.01

Terminal Oxidation>
      Glycine     term_spec   PepCTerm    prob  0.0001

Dioxidation>
      Proline           prob  0.0002
      Arginine    prob  0.0002
      Lysine            prob  0.00002
```

```
      Tyrosine    prob  0.0002

Trioxidation>
      Tyrosine    prob  0.0002

Palmitoleyl>
      Cysteine    prob  0.00001

Palmitoyl>
      Cysteine    prob  0.00001
      Lysine            prob  0.00001
      Serine            prob  0.00001
      Threonine   prob  0.00001

Tripalmitate>
      Cysteine    term_spec   ProtNTerm   prob  0.00001

Phosphopantetheine>
      Serine            prob  0.00002

Phosphoadenosine>
      Lysine            prob  0.0001
      Tyrosine    prob  0.0001
      Threonine   prob  0.0001
      Histidine   prob  0.0001

Phosphoguanosine>
      Lysine            prob  0.0001
      Histidine   prob  0.0001

PhosphoribosyldephosphoCoA>
      Serine            prob  0.0001

PhosphoUridine>
      Tyrosine    prob  0.0001
      Histidine   prob  0.0001

Phospho(Ser,Thr)>
      Serine            prob  0.002
      Threonine   prob  0.0007

Phospho>
      Tyrosine    prob  0.00001
      Lysine            prob  0.0001
      Histidine   prob  0.0001
      Aspartic Acid     prob  0.0001
      Arginine    prob  0.0001
      Cysteine    prob  0.00001

Propionyl>
      Lysine            prob  0.00001

Phycocyanobilin>
      Cysteine    prob  0.0001

Phycoerythrobilin>
      Cysteine    prob  0.0001

Phytochromobilin>
      Cysteine    prob  0.0001

PyridoxalPhosphate>
```

```
      Lysine      prob  0.0001

PyruvicAcidIminyl>
      Lysine      prob  0.0001

Protein Terminal PyruvicAcidIminyl>
      Valine      term_spec   ProtNTerm   prob  0.0001
      Cysteine    term_spec   ProtNTerm   prob  0.0001

Quinone>
      Tryptophan  prob  0.0001
      Tyrosine    prob  0.0001

Retinylidene>
      Lysine      prob  0.0001

Ser->LacticAcid>
      Serine      prob  0.0001

Ser->Oxoalanine>
      Serine      prob  0.0003

Succinyl>
            term_spec   ProtNTerm   prob  0.00008

Sulfide>
      Cysteine    prob  0.00002

Sulfo>
      Serine      prob  0.00002
      Threonine   prob  0.00001
      Tyrosine    prob  0.0006
      Cysteine    prob  0.0001

Thyroxine>
      Tyrosine    prob  0.0001

Triiodothyronine>
      Tyrosine    prob  0.0001

Tyr->Dha>
      Tyrosine    prob  0.0001

Ubiquitination LRGG>
      Lysine      prob  0.00001


Alkylation identification probabilities for Iodoethanol
Ethanolyl>
      Cysteine    prob  0.95
      Lysine           prob  0.01
      Selenocysteine   prob  0.005

Terminal Ethanolyl>
            term_spec   PepNTerm    prob

Iodo>
      Tyrosine    prob  0.05
      Histidine   prob  0.01

Alkylation identification probabilities for Iodoacetamide
      Cysteine    prob  0.994
```

```
        Lysine              prob     0.006
        Aspartic Acid    prob  0.0016
        Glutamic Acid    prob  0.0018
        Histidine  prob  0.001
        Selenocysteine   prob  0.005
        Serine           prob  0.001
        Threonine  prob  0.001
        Tyrosine   prob  0.001

    Terminal Carbamidomethyl>
              term_spec   PepNTerm

    Dicarbamidomethyl>
        Aspartic Acid    prob  0.001

    Carbamyl>
        Methionine prob  0.001

    Iodo>
        Tyrosine   prob  0.0012
        Histidine  prob  0.00019

Amino acid substitution probabilities
      residue="A"    sub="R"    probability="0.0015"
      residue="R"    sub="A"    probability="0.0015"
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      residue="N"    sub="A"    probability="0.001"
      residue="A"    sub="D"    probability="0.001"
      residue="D"    sub="A"    probability="0.001"
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residue="E"    sub="C"    probability="0.0008"
residue="C"    sub="G"    probability="0.0008"
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residue="C"    sub="L"    probability="0.0015"
residue="L"    sub="C"    probability="0.0015"
residue="C"    sub="K"    probability="0.0008"
residue="K"    sub="C"    probability="0.0008"
residue="C"    sub="M"    probability="0.0015"
residue="M"    sub="C"    probability="0.0015"
residue="C"    sub="F"    probability="0.001"
residue="F"    sub="C"    probability="0.001"
residue="C"    sub="P"    probability="0.0008"
residue="P"    sub="C"    probability="0.0008"
residue="C"    sub="S"    probability="0.0015"
residue="S"    sub="C"    probability="0.0015"
residue="C"    sub="T"    probability="0.0015"
residue="T"    sub="C"    probability="0.0015"
residue="C"    sub="W"    probability="0.001"
residue="W"    sub="C"    probability="0.001"
residue="C"    sub="Y"    probability="0.001"
residue="Y"    sub="C"    probability="0.001"
residue="C"    sub="V"    probability="0.0015"
```

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residue="V"    sub="C"    probability="0.0015"
residue="E"    sub="Q"    probability="0.005"
residue="Q"    sub="G"    probability="0.001"
residue="G"    sub="Q"    probability="0.001"
residue="Q"    sub="H"    probability="0.003"
residue="H"    sub="Q"    probability="0.003"
residue="I"    sub="Q"    probability="0.0008"
residue="Q"    sub="L"    probability="0.001"
residue="L"    sub="Q"    probability="0.001"
residue="Q"    sub="K"    probability="0.004"
residue="K"    sub="Q"    probability="0.004"
residue="Q"    sub="M"    probability="0.003"
residue="M"    sub="Q"    probability="0.003"
residue="Q"    sub="F"    probability="0.0008"
residue="F"    sub="Q"    probability="0.0008"
residue="Q"    sub="P"    probability="0.0015"
residue="P"    sub="Q"    probability="0.0015"
residue="Q"    sub="S"    probability="0.003"
residue="S"    sub="Q"    probability="0.003"
residue="Q"    sub="T"    probability="0.0015"
residue="T"    sub="Q"    probability="0.0015"
residue="Q"    sub="W"    probability="0.001"
residue="W"    sub="Q"    probability="0.001"
residue="Q"    sub="Y"    probability="0.0015"
residue="Y"    sub="Q"    probability="0.0015"
residue="Q"    sub="V"    probability="0.001"
residue="V"    sub="Q"    probability="0.001"
residue="E"    sub="G"    probability="0.001"
residue="G"    sub="E"    probability="0.001"
residue="E"    sub="H"    probability="0.003"
residue="H"    sub="E"    probability="0.003"
residue="I"    sub="E"    probability="0.0008"
residue="E"    sub="L"    probability="0.0008"
residue="L"    sub="E"    probability="0.0008"
residue="E"    sub="K"    probability="0.004"
residue="K"    sub="E"    probability="0.004"
residue="E"    sub="M"    probability="0.001"
residue="M"    sub="E"    probability="0.001"
residue="E"    sub="F"    probability="0.0008"
residue="F"    sub="E"    probability="0.0008"
residue="E"    sub="P"    probability="0.0015"
residue="P"    sub="E"    probability="0.0015"
residue="E"    sub="S"    probability="0.003"
residue="S"    sub="E"    probability="0.003"
residue="E"    sub="T"    probability="0.0015"
residue="T"    sub="E"    probability="0.0015"
residue="E"    sub="W"    probability="0.0008"
residue="W"    sub="E"    probability="0.0008"
residue="E"    sub="Y"    probability="0.001"
residue="Y"    sub="E"    probability="0.001"
residue="E"    sub="V"    probability="0.001"
residue="V"    sub="E"    probability="0.001"
residue="G"    sub="H"    probability="0.001"
residue="H"    sub="G"    probability="0.001"
residue="I"    sub="G"    probability="0.0008"
residue="G"    sub="L"    probability="0.0008"
residue="L"    sub="G"    probability="0.0008"
residue="G"    sub="K"    probability="0.001"
residue="K"    sub="G"    probability="0.001"
residue="G"    sub="M"    probability="0.0008"
residue="M"    sub="G"    probability="0.0008"
residue="G"    sub="F"    probability="0.0008"
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residue="F"    sub="G"    probability="0.0008"
residue="G"    sub="P"    probability="0.001"
residue="P"    sub="G"    probability="0.001"
residue="G"    sub="S"    probability="0.003"
residue="S"    sub="G"    probability="0.003"
residue="G"    sub="T"    probability="0.001"
residue="T"    sub="G"    probability="0.001"
residue="G"    sub="W"    probability="0.001"
residue="W"    sub="G"    probability="0.001"
residue="G"    sub="Y"    probability="0.0008"
residue="Y"    sub="G"    probability="0.0008"
residue="G"    sub="V"    probability="0.0008"
residue="V"    sub="G"    probability="0.0008"
residue="I"    sub="H"    probability="0.0008"
residue="H"    sub="L"    probability="0.0008"
residue="L"    sub="H"    probability="0.0008"
residue="H"    sub="K"    probability="0.0015"
residue="K"    sub="H"    probability="0.0015"
residue="H"    sub="M"    probability="0.001"
residue="M"    sub="H"    probability="0.001"
residue="H"    sub="F"    probability="0.0015"
residue="F"    sub="H"    probability="0.0015"
residue="H"    sub="P"    probability="0.001"
residue="P"    sub="H"    probability="0.001"
residue="H"    sub="S"    probability="0.0015"
residue="S"    sub="H"    probability="0.0015"
residue="H"    sub="T"    probability="0.001"
residue="T"    sub="H"    probability="0.001"
residue="H"    sub="W"    probability="0.001"
residue="W"    sub="H"    probability="0.001"
residue="H"    sub="Y"    probability="0.005"
residue="Y"    sub="H"    probability="0.005"
residue="H"    sub="V"    probability="0.0008"
residue="V"    sub="H"    probability="0.0008"
residue="I"    sub="K"    probability="0.0008"
residue="I"    sub="M"    probability="0.004"
residue="I"    sub="F"    probability="0.003"
residue="I"    sub="P"    probability="0.0008"
residue="I"    sub="S"    probability="0.001"
residue="I"    sub="T"    probability="0.0015"
residue="I"    sub="W"    probability="0.0008"
residue="I"    sub="Y"    probability="0.0015"
residue="I"    sub="V"    probability="0.008"
residue="L"    sub="K"    probability="0.001"
residue="K"    sub="L"    probability="0.001"
residue="L"    sub="M"    probability="0.005"
residue="M"    sub="L"    probability="0.005"
residue="L"    sub="F"    probability="0.003"
residue="F"    sub="L"    probability="0.003"
residue="L"    sub="P"    probability="0.0008"
residue="P"    sub="L"    probability="0.0008"
residue="L"    sub="S"    probability="0.001"
residue="S"    sub="L"    probability="0.001"
residue="L"    sub="T"    probability="0.0015"
residue="T"    sub="L"    probability="0.0015"
residue="L"    sub="W"    probability="0.001"
residue="W"    sub="L"    probability="0.001"
residue="L"    sub="Y"    probability="0.0015"
residue="Y"    sub="L"    probability="0.0015"
residue="L"    sub="V"    probability="0.004"
residue="V"    sub="L"    probability="0.004"
residue="K"    sub="M"    probability="0.0015"
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residue="M"    sub="K"    probability="0.0015"
residue="K"    sub="F"    probability="0.0008"
residue="F"    sub="K"    probability="0.0008"
residue="K"    sub="P"    probability="0.0015"
residue="P"    sub="K"    probability="0.0015"
residue="K"    sub="S"    probability="0.003"
residue="S"    sub="K"    probability="0.003"
residue="K"    sub="T"    probability="0.0015"
residue="T"    sub="K"    probability="0.0015"
residue="K"    sub="W"    probability="0.0008"
residue="W"    sub="K"    probability="0.0008"
residue="K"    sub="Y"    probability="0.001"
residue="Y"    sub="K"    probability="0.001"
residue="K"    sub="V"    probability="0.001"
residue="V"    sub="K"    probability="0.001"
residue="M"    sub="F"    probability="0.003"
residue="F"    sub="M"    probability="0.003"
residue="M"    sub="P"    probability="0.001"
residue="P"    sub="M"    probability="0.001"
residue="M"    sub="S"    probability="0.0015"
residue="S"    sub="M"    probability="0.0015"
residue="M"    sub="T"    probability="0.0015"
residue="T"    sub="M"    probability="0.0015"
residue="M"    sub="W"    probability="0.0015"
residue="W"    sub="M"    probability="0.0015"
residue="M"    sub="Y"    probability="0.0015"
residue="Y"    sub="M"    probability="0.0015"
residue="M"    sub="V"    probability="0.004"
residue="V"    sub="M"    probability="0.004"
residue="F"    sub="P"    probability="0.0008"
residue="P"    sub="F"    probability="0.0008"
residue="F"    sub="S"    probability="0.001"
residue="S"    sub="F"    probability="0.001"
residue="F"    sub="T"    probability="0.001"
residue="T"    sub="F"    probability="0.001"
residue="F"    sub="W"    probability="0.004"
residue="W"    sub="F"    probability="0.004"
residue="F"    sub="Y"    probability="0.008"
residue="Y"    sub="F"    probability="0.008"
residue="F"    sub="V"    probability="0.0015"
residue="V"    sub="F"    probability="0.0015"
residue="P"    sub="S"    probability="0.0015"
residue="S"    sub="P"    probability="0.0015"
residue="P"    sub="T"    probability="0.0015"
residue="T"    sub="P"    probability="0.0015"
residue="P"    sub="W"    probability="0.0008"
residue="W"    sub="P"    probability="0.0008"
residue="P"    sub="Y"    probability="0.0008"
residue="Y"    sub="P"    probability="0.0008"
residue="P"    sub="V"    probability="0.001"
residue="V"    sub="P"    probability="0.001"
residue="S"    sub="T"    probability="0.004"
residue="T"    sub="S"    probability="0.004"
residue="S"    sub="W"    probability="0.0008"
residue="W"    sub="S"    probability="0.0008"
residue="S"    sub="Y"    probability="0.001"
residue="Y"    sub="S"    probability="0.001"
residue="S"    sub="V"    probability="0.001"
residue="V"    sub="S"    probability="0.001"
residue="T"    sub="W"    probability="0.001"
residue="W"    sub="T"    probability="0.001"
residue="T"    sub="Y"    probability="0.001"
```

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        residue="Y"    sub="T"    probability="0.001"
        residue="T"    sub="V"    probability="0.003"
        residue="V"    sub="T"    probability="0.003"
        residue="W"    sub="Y"    probability="0.005"
        residue="Y"    sub="W"    probability="0.005"
        residue="W"    sub="V"    probability="0.0008"
        residue="V"    sub="W"    probability="0.0008"
        residue="Y"    sub="V"    probability="0.0015"
        residue="V"    sub="Y"    probability="0.0015"


Cleavage probabilities for Trypsin (miscleavage factor 0.75)

- CLEAVAGE_RULE after="Arginine" prob="0.90">
        exception before="Proline" prob="0.15"
        exception before="Aspartic Acid" prob="0.70"
        exception before="Glutamic Acid" prob="0.85"

- CLEAVAGE_RULE after="Lysine" prob="0.80">
        exception before="Proline" prob="0.034"
        exception before="Lysine" prob="0.70"
        exception before="Aspartic Acid" prob="0.50"
        exception before="Glutamic Acid" prob="0.60"

- CLEAVAGE_RULE after="Tyrosine" prob="0.00001">
        exception before="Alanine" prob="0.033"
        exception before="Cysteine" prob="0.00003"
        exception before="Aspartic Acid" prob="0.001"
        exception before="Glutamic Acid" prob="0.001"
        exception before="Phenylalanine" prob="0.018"
        exception before="Glycine" prob="0.008"
        exception before="Histidine" prob="0.018"
        exception before="Isoleucine" prob="0.018"
        exception before="Lysine" prob="0.0008"
        exception before="Leucine" prob="0.008"
        exception before="Methionine" prob="0.019"
        exception before="Asparagine" prob="0.0004"
        exception before="Proline" prob="0.005"
        exception before="Glutamine" prob="0.0004"
        exception before="Arginine" prob="0.0006"
        exception before="Serine" prob="0.002"
        exception before="Threonine" prob="0.002"
        exception before="Valine" prob="0.001"
        exception before="Tryptophan" prob="0.00008"
        exception before="Tyrosine" prob="0.0003"

- CLEAVAGE_RULE after="Phenylalanine" prob="0.00001">
        exception before="Alanine" prob="0.014"
        exception before="Cysteine" prob="0.025"
        exception before="Aspartic Acid" prob="0.002"
        exception before="Glutamic Acid" prob="0.002"
        exception before="Phenylalanine" prob="0.004"
        exception before="Glycine" prob="0.004"
        exception before="Histidine" prob="0.003"
        exception before="Isoleucine" prob="0.006"
        exception before="Lysine" prob="0.002"
        exception before="Leucine" prob="0.01"
        exception before="Methionine" prob="0.02"
        exception before="Asparagine" prob="0.002"
        exception before="Proline" prob="0.003"
        exception before="Glutamine" prob="0.006"
        exception before="Arginine" prob="0.001"
```

```
        exception before="Serine" prob="0.028"
        exception before="Threonine" prob="0.012"
        exception before="Valine" prob="0.012"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.003"

- CLEAVAGE_RULE after="Leucine" prob="0.00001">
        exception before="Alanine" prob="0.006"
        exception before="Cysteine" prob="0.002"
        exception before="Aspartic Acid" prob="0.002"
        exception before="Glutamic Acid" prob="0.0004"
        exception before="Phenylalanine" prob="0.008"
        exception before="Glycine" prob="0.004"
        exception before="Histidine" prob="0.007"
        exception before="Isoleucine" prob="0.004"
        exception before="Lysine" prob="0.0008"
        exception before="Leucine" prob="0.002"
        exception before="Methionine" prob="0.007"
        exception before="Asparagine" prob="0.004"
        exception before="Proline" prob="0.011"
        exception before="Glutamine" prob="0.002"
        exception before="Arginine" prob="0.003"
        exception before="Serine" prob="0.01"
        exception before="Threonine" prob="0.006"
        exception before="Valine" prob="0.004"
        exception before="Tryptophan" prob="0.0009"
        exception before="Tyrosine" prob="0.002"

- CLEAVAGE_RULE after="Methionine" prob="0.00001">
        exception before="Alanine" prob="0.041"
        exception before="Cysteine" prob="0.018"
        exception before="Aspartic Acid" prob="0.001"
        exception before="Glutamic Acid" prob="0.002"
        exception before="Phenylalanine" prob="0.007"
        exception before="Glycine" prob="0.004"
        exception before="Histidine" prob="0.002"
        exception before="Isoleucine" prob="0.012"
        exception before="Lysine" prob="0.001"
        exception before="Leucine" prob="0.0006"
        exception before="Methionine" prob="0.015"
        exception before="Asparagine" prob="0.003"
        exception before="Proline" prob="0.03"
        exception before="Glutamine" prob="0.0009"
        exception before="Arginine" prob="0.001"
        exception before="Serine" prob="0.122"
        exception before="Threonine" prob="0.034"
        exception before="Valine" prob="0.01"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.00002"

- CLEAVAGE_RULE after="Histidine" prob="0.00001">
        exception before="Alanine" prob="0.034"
        exception before="Cysteine" prob="0.028"
        exception before="Aspartic Acid" prob="0.00002"
        exception before="Glutamic Acid" prob="0.0004"
        exception before="Phenylalanine" prob="0.001"
        exception before="Glycine" prob="0.002"
        exception before="Histidine" prob="0.004"
        exception before="Isoleucine" prob="0.013"
        exception before="Lysine" prob="0.005"
        exception before="Leucine" prob="0.009"
        exception before="Methionine" prob="0.006"
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```
        exception before="Asparagine" prob="0.00005"
        exception before="Proline" prob="0.002"
        exception before="Glutamine" prob="0.001"
        exception before="Arginine" prob="0.0007"
        exception before="Serine" prob="0.011"
        exception before="Threonine" prob="0.011"
        exception before="Valine" prob="0.003"
        exception before="Tryptophan" prob="0.004"
        exception before="Tyrosine" prob="0.021"

- CLEAVAGE_RULE after="Asparagine" prob="0.00001">
        exception before="Alanine" prob="0.004"
        exception before="Cysteine" prob="0.02"
        exception before="Aspartic Acid" prob="0.00007"
        exception before="Glutamic Acid" prob="0.0003"
        exception before="Phenylalanine" prob="0.002"
        exception before="Glycine" prob="0.004"
        exception before="Histidine" prob="0.002"
        exception before="Isoleucine" prob="0.003"
        exception before="Lysine" prob="0.00003"
        exception before="Leucine" prob="0.002"
        exception before="Methionine" prob="0.014"
        exception before="Asparagine" prob="0.002"
        exception before="Proline" prob="0.002"
        exception before="Glutamine" prob="0.0004"
        exception before="Arginine" prob="0.00002"
        exception before="Serine" prob="0.016"
        exception before="Threonine" prob="0.011"
        exception before="Valine" prob="0.003"
        exception before="Tryptophan" prob="0.001"
        exception before="Tyrosine" prob="0.002"

- CLEAVAGE_RULE after="Proline" prob="0.00001">
        exception before="Alanine" prob="0.002"
        exception before="Cysteine" prob="0.003"
        exception before="Aspartic Acid" prob="0.004"
        exception before="Glutamic Acid" prob="0.001"
        exception before="Phenylalanine" prob="0.004"
        exception before="Glycine" prob="0.002"
        exception before="Histidine" prob="0.0004"
        exception before="Isoleucine" prob="0.00009"
        exception before="Lysine" prob="0.0008"
        exception before="Leucine" prob="0.0009"
        exception before="Methionine" prob="0.002"
        exception before="Asparagine" prob="0.0009"
        exception before="Proline" prob="0.001"
        exception before="Glutamine" prob="0.002"
        exception before="Arginine" prob="0.001"
        exception before="Serine" prob="0.002"
        exception before="Threonine" prob="0.002"
        exception before="Valine" prob="0.0007"
        exception before="Tryptophan" prob="0.0004"
        exception before="Tyrosine" prob="0.0003"

- CLEAVAGE_RULE after="Isoleucine" prob="0.00001">
        exception before="Alanine" prob="0.0007"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0002"
        exception before="Glutamic Acid" prob="0.0009"
        exception before="Phenylalanine" prob="0.001"
        exception before="Glycine" prob="0.002"
        exception before="Histidine" prob="0.00009"
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        exception before="Isoleucine" prob="0.003"
        exception before="Lysine" prob="0.001"
        exception before="Leucine" prob="0.001"
        exception before="Methionine" prob="0.0005"
        exception before="Asparagine" prob="0.0009"
        exception before="Proline" prob="0.009"
        exception before="Glutamine" prob="0.002"
        exception before="Arginine" prob="0.004"
        exception before="Serine" prob="0.0009"
        exception before="Threonine" prob="0.003"
        exception before="Valine" prob="0.002"
        exception before="Tryptophan" prob="0.013"
        exception before="Tyrosine" prob="0.0002"

- CLEAVAGE_RULE after="Alanine" prob="0.00001">
        exception before="Alanine" prob="0.004"
        exception before="Cysteine" prob="0.003"
        exception before="Aspartic Acid" prob="0.005"
        exception before="Glutamic Acid" prob="0.003"
        exception before="Phenylalanine" prob="0.001"
        exception before="Glycine" prob="0.002"
        exception before="Histidine" prob="0.0005"
        exception before="Isoleucine" prob="0.0008"
        exception before="Lysine" prob="0.001"
        exception before="Leucine" prob="0.001"
        exception before="Methionine" prob="0.002"
        exception before="Asparagine" prob="0.0003"
        exception before="Proline" prob="0.002"
        exception before="Glutamine" prob="0.0007"
        exception before="Arginine" prob="0.00006"
        exception before="Serine" prob="0.003"
        exception before="Threonine" prob="0.0007"
        exception before="Valine" prob="0.002"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.00002"

- CLEAVAGE_RULE after="Valine" prob="0.00001">
        exception before="Alanine" prob="0.0004"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0004"
        exception before="Glutamic Acid" prob="0.0001"
        exception before="Phenylalanine" prob="0.002"
        exception before="Glycine" prob="0.001"
        exception before="Histidine" prob="0.0001"
        exception before="Isoleucine" prob="0.0009"
        exception before="Lysine" prob="0.0002"
        exception before="Leucine" prob="0.0003"
        exception before="Methionine" prob="0.0005"
        exception before="Asparagine" prob="0.0004"
        exception before="Proline" prob="0.01"
        exception before="Glutamine" prob="0.00002"
        exception before="Arginine" prob="0.002"
        exception before="Serine" prob="0.0009"
        exception before="Threonine" prob="0.0003"
        exception before="Valine" prob="0.0004"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0002"

- CLEAVAGE_RULE after="Glutamine" prob="0.00001">
        exception before="Alanine" prob="0.003"
        exception before="Cysteine" prob="0.00003"
        exception before="Aspartic Acid" prob="0.002"
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```
        exception before="Glutamic Acid" prob="0.0002"
        exception before="Phenylalanine" prob="0.0006"
        exception before="Glycine" prob="0.002"
        exception before="Histidine" prob="0.001"
        exception before="Isoleucine" prob="0.00002"
        exception before="Lysine" prob="0.0007"
        exception before="Leucine" prob="0.0009"
        exception before="Methionine" prob="0.00002"
        exception before="Asparagine" prob="0.0004"
        exception before="Proline" prob="0.0003"
        exception before="Glutamine" prob="0.0004"
        exception before="Arginine" prob="0.0002"
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        exception before="Threonine" prob="0.0003"
        exception before="Valine" prob="0.0003"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0007"

- CLEAVAGE_RULE after="Glycine" prob="0.00001">
        exception before="Alanine" prob="0.0005"
        exception before="Cysteine" prob="0.0006"
        exception before="Aspartic Acid" prob="0.0002"
        exception before="Glutamic Acid" prob="0.0006"
        exception before="Phenylalanine" prob="0.00006"
        exception before="Glycine" prob="0.0007"
        exception before="Histidine" prob="0.0002"
        exception before="Isoleucine" prob="0.0007"
        exception before="Lysine" prob="0.0002"
        exception before="Leucine" prob="0.0007"
        exception before="Methionine" prob="0.0006"
        exception before="Asparagine" prob="0.0005"
        exception before="Proline" prob="0.0001"
        exception before="Glutamine" prob="0.00002"
        exception before="Arginine" prob="0.0004"
        exception before="Serine" prob="0.0007"
        exception before="Threonine" prob="0.003"
        exception before="Valine" prob="0.0007"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0005"

- CLEAVAGE_RULE after="Threonine" prob="0.00001">
        exception before="Alanine" prob="0.0003"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0002"
        exception before="Glutamic Acid" prob="0.002"
        exception before="Phenylalanine" prob="0.0002"
        exception before="Glycine" prob="0.001"
        exception before="Histidine" prob="0.00005"
        exception before="Isoleucine" prob="0.0004"
        exception before="Lysine" prob="0.0002"
        exception before="Leucine" prob="0.0007"
        exception before="Methionine" prob="0.0004"
        exception before="Asparagine" prob="0.00004"
        exception before="Proline" prob="0.001"
        exception before="Glutamine" prob="0.001"
        exception before="Arginine" prob="0.0007"
        exception before="Serine" prob="0.001"
        exception before="Threonine" prob="0.0007"
        exception before="Valine" prob="0.0006"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0004"
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- CLEAVAGE_RULE after="Cysteine" prob="0.00001">
        exception before="Alanine" prob="0.0003"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0008"
        exception before="Glutamic Acid" prob="0.00002"
        exception before="Phenylalanine" prob="0.002"
        exception before="Glycine" prob="0.00002"
        exception before="Histidine" prob="0.008"
        exception before="Isoleucine" prob="0.005"
        exception before="Lysine" prob="0.001"
        exception before="Leucine" prob="0.00002"
        exception before="Methionine" prob="0.00002"
        exception before="Asparagine" prob="0.002"
        exception before="Proline" prob="0.005"
        exception before="Glutamine" prob="0.00002"
        exception before="Arginine" prob="0.002"
        exception before="Serine" prob="0.0007"
        exception before="Threonine" prob="0.006"
        exception before="Valine" prob="0.0003"
        exception before="Tryptophan" prob="0.00005"
        exception before="Tyrosine" prob="0.00002"

- CLEAVAGE_RULE after="Glutamic Acid" prob="0.00001">
        exception before="Alanine" prob="0.0001"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0004"
        exception before="Glutamic Acid" prob="0.0009"
        exception before="Phenylalanine" prob="0.0005"
        exception before="Glycine" prob="0.0003"
        exception before="Histidine" prob="0.00002"
        exception before="Isoleucine" prob="0.0002"
        exception before="Lysine" prob="0.0001"
        exception before="Leucine" prob="0.0005"
        exception before="Methionine" prob="0.00009"
        exception before="Asparagine" prob="0.00002"
        exception before="Proline" prob="0.002"
        exception before="Glutamine" prob="0.00002"
        exception before="Arginine" prob="0.0005"
        exception before="Serine" prob="0.001"
        exception before="Threonine" prob="0.0008"
        exception before="Valine" prob="0.0008"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0004"

- CLEAVAGE_RULE after="Tryptophan" prob="0.00001">
        exception before="Alanine" prob="0.015"
        exception before="Cysteine" prob="0.001"
        exception before="Aspartic Acid" prob="0.003"
        exception before="Glutamic Acid" prob="0.0009"
        exception before="Phenylalanine" prob="0.00002"
        exception before="Glycine" prob="0.004"
        exception before="Histidine" prob="0.00002"
        exception before="Isoleucine" prob="0.00002"
        exception before="Lysine" prob="0.00002"
        exception before="Leucine" prob="0.004"
        exception before="Methionine" prob="0.00003"
        exception before="Asparagine" prob="0.00002"
        exception before="Proline" prob="0.00002"
        exception before="Glutamine" prob="0.001"
        exception before="Arginine" prob="0.002"
        exception before="Serine" prob="0.003"
        exception before="Threonine" prob="0.00002"
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```
        exception before="Valine" prob="0.00002"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.00002"

- CLEAVAGE_RULE after="Serine" prob="0.00001">
        exception before="Alanine" prob="0.001"
        exception before="Cysteine" prob="0.0003"
        exception before="Aspartic Acid" prob="0.00002"
        exception before="Glutamic Acid" prob="0.0001"
        exception before="Phenylalanine" prob="0.0006"
        exception before="Glycine" prob="0.0004"
        exception before="Histidine" prob="0.00002"
        exception before="Isoleucine" prob="0.001"
        exception before="Lysine" prob="0.0001"
        exception before="Leucine" prob="0.0001"
        exception before="Methionine" prob="0.0003"
        exception before="Asparagine" prob="0.00002"
        exception before="Proline" prob="0.001"
        exception before="Glutamine" prob="0.0001"
        exception before="Arginine" prob="0.00002"
        exception before="Serine" prob="0.0003"
        exception before="Threonine" prob="0.00002"
        exception before="Valine" prob="0.0003"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0008"

- CLEAVAGE_RULE after="Aspartic Acid" prob="0.00001">
        exception before="Alanine" prob="0.0006"
        exception before="Cysteine" prob="0.00002"
        exception before="Aspartic Acid" prob="0.0003"
        exception before="Glutamic Acid" prob="0.0001"
        exception before="Phenylalanine" prob="0.0003"
        exception before="Glycine" prob="0.00006"
        exception before="Histidine" prob="0.00002"
        exception before="Isoleucine" prob="0.0008"
        exception before="Lysine" prob="0.00002"
        exception before="Leucine" prob="0.0002"
        exception before="Methionine" prob="0.00002"
        exception before="Asparagine" prob="0.00002"
        exception before="Proline" prob="0.008"
        exception before="Glutamine" prob="0.00002"
        exception before="Arginine" prob="0.001"
        exception before="Serine" prob="0.00002"
        exception before="Threonine" prob="0.0003"
        exception before="Valine" prob="0.0004"
        exception before="Tryptophan" prob="0.00002"
        exception before="Tyrosine" prob="0.0001"
```