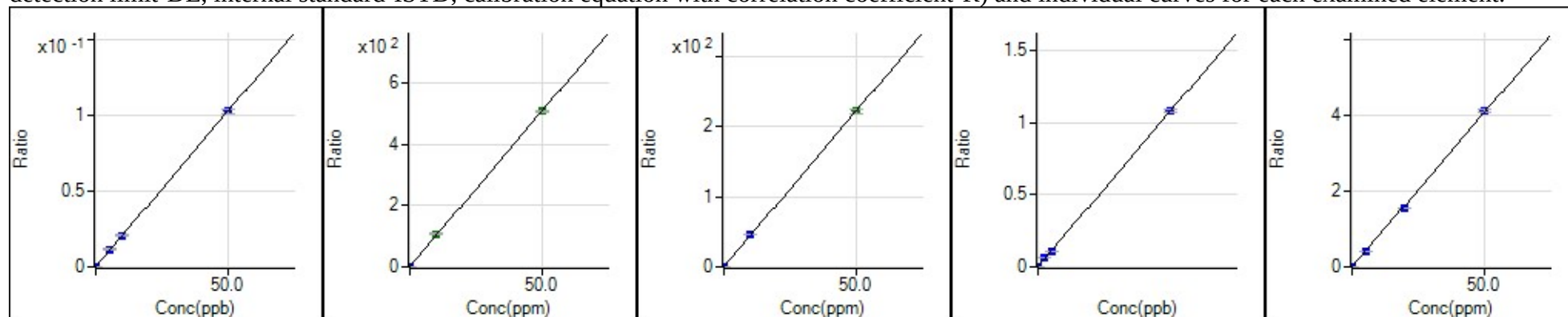


Figure S1. The validation protocol of ICP-MS measurements. The report includes validation parameters (background equivalent concentration-BEC, detection limit-DL, internal standard-ISTD, calibration equation with correlation coefficient-R) and individual curves for each examined element.



9 Be [No Gas]

ISTD: 45 Sc

$$y = 2.057E-3 x + 6.955E-6$$

R 0.9999

DL 0.002158

BEC 0.003382

23 Na [He]

ISTD: 45 Sc

$$y = 1.019E1 x + 6.326E-1$$

R 0.9999

DL 0.005241

BEC 0.0621

24 Mg [He]

ISTD: 45 Sc

$$y = 4.444E0 x + 5.516E-3$$

R 0.9999

DL 0.0004749

BEC 0.001241

27 Al [He]

ISTD: 45 Sc

$$y = 1.077E-3 x + 2.405E-3$$

R 1.0000

DL 0.2184

BEC 2.233

31 P [He]

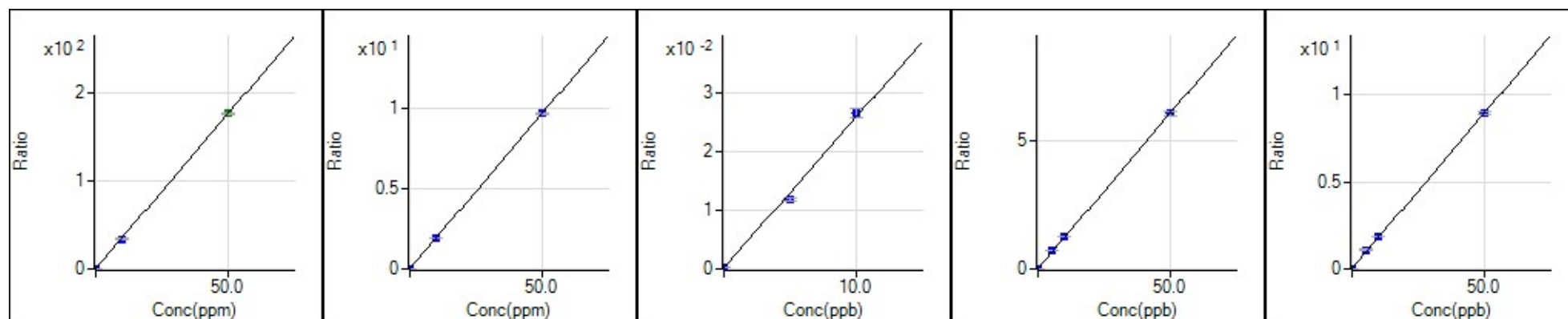
ISTD: 45 Sc

$$y = 8.154E-2 x + 5.948E-4$$

R 0.9997

DL 0.007287

BEC 0.007294



39 K [He]

ISTD: 45 Sc

$$y = 3.532E0 x + 3.421E-1$$

R 1.0000

DL 0.003932

BEC 0.09686

44 Ca [He]

ISTD: 45 Sc

$$y = 1.930E-1 x + 5.666E-3$$

R 1.0000

DL 0.003975

BEC 0.02936

47 Ti [He]

ISTD: 45 Sc

$$y = 2.572E-3 x + 1.748E-4$$

R 0.9979

DL 0.07481

BEC 0.06799

51 V [He]

ISTD: 45 Sc

$$y = 1.209E-1 x + 2.800E-4$$

R 0.9999

DL 0.004829

BEC 0.002317

52 Cr [He]

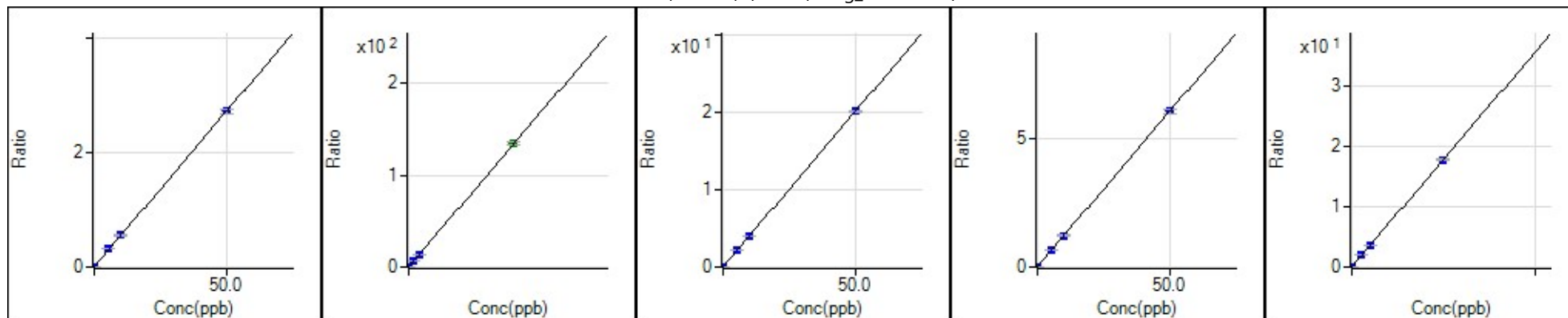
ISTD: 45 Sc

$$y = 1.785E-1 x + 1.599E-2$$

R 0.9998

DL 0.032

BEC 0.08958



55 Mn [He]

ISTD: 45 Sc

$$y = 5.459E-2 x + 2.652E-3$$

R 0.9998

DL 0.007521

BEC 0.04857

56 Fe [He]

ISTD: 45 Sc

$$y = 1.345E-1 x + 1.234E-1$$

R 1.0000

DL 0.05304

BEC 0.9174

59 Co [He]

ISTD: 45 Sc

$$y = 4.025E-1 x + 1.069E-3$$

R 0.9999

DL 0.001483

BEC 0.002655

60 Ni [He]

ISTD: 45 Sc

$$y = 1.207E-1 x + 1.303E-2$$

R 0.9999

DL 0.02193

BEC 0.108

63 Cu [He]

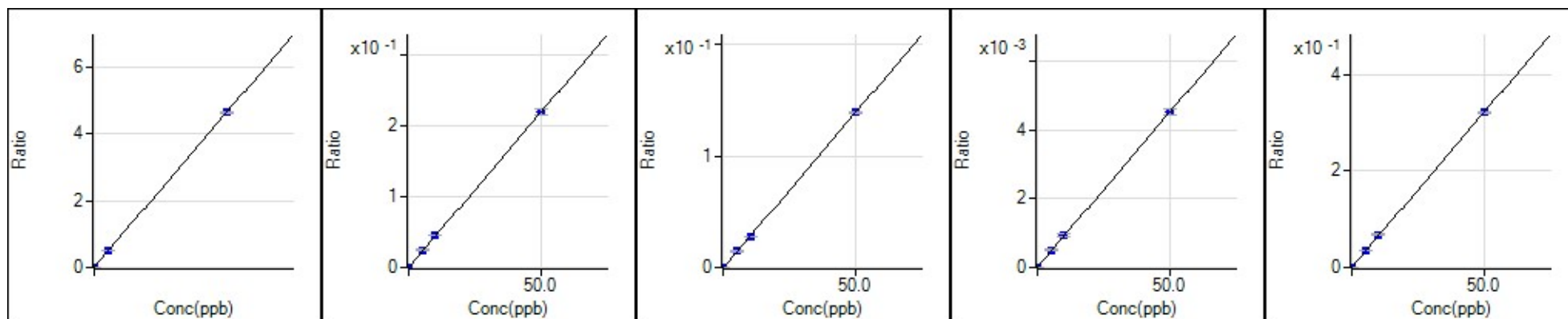
ISTD: 45 Sc

$$y = 3.559E-1 x + 3.283E-2$$

R 0.9999

DL 0.02035

BEC 0.09225



66 Zn [He]

ISTD: 89 Y

$$y = 4.645E-3 x + 1.122E-2$$

R 1.0000

DL 0.2187

BEC 2.417

71 Ga [He]

ISTD: 89 Y

$$y = 4.394E-3 x$$

R 0.9999

DL 0

BEC 0

75 As [He]

ISTD: 89 Y

$$y = 2.785E-3 x + 3.768E-5$$

R 1.0000

DL 0.02058

BEC 0.01353

78 Se [He]

ISTD: 89 Y

$$y = 9.022E-5 x + 7.234E-6$$

R 0.9999

DL 0.1176

BEC 0.08019

85 Rb [He]

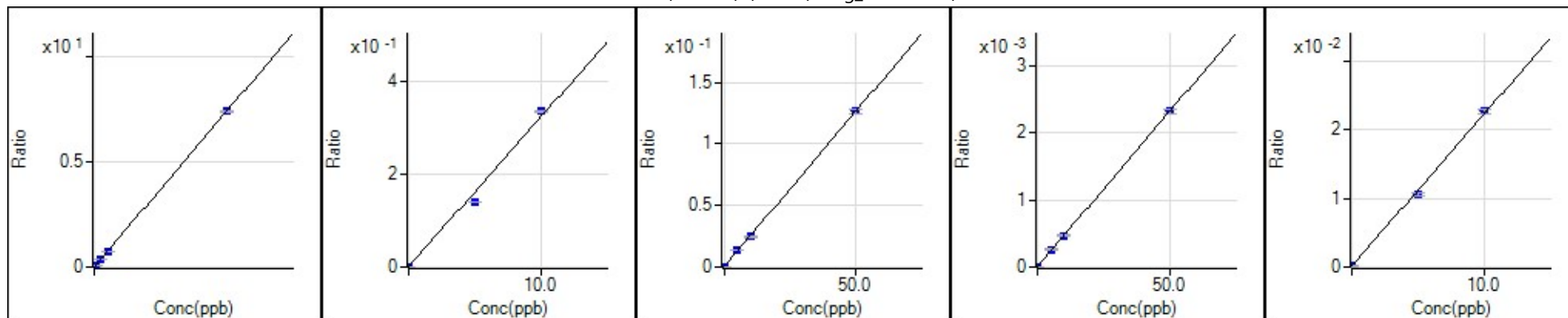
ISTD: 89 Y

$$y = 6.442E-3 x + 2.060E-4$$

R 0.9999

DL 0.01087

BEC 0.03198



88 Sr [He]

ISTD: 89 Y

$$y = 7.402E-3 x + 1.694E-3$$

R 1.0000

DL 0.09661

BEC 0.2288

90 Zr [He]

ISTD: 89 Y

$$y = 3.222E-2 x + 9.700E-4$$

R 0.9950

DL 0.03327

BEC 0.0301

75 -> 91 As [O2]

ISTD: 89 -> 105 Y

$$y = 2.526E-3 x + 4.927E-5$$

R 0.9999

DL 0.005205

BEC 0.01951

78 -> 94 Se [O2]

ISTD: 89 -> 105 Y

$$y = 4.629E-5 x + 5.542E-6$$

R 0.9999

DL 0.02681

BEC 0.1197

95 Mo [He]

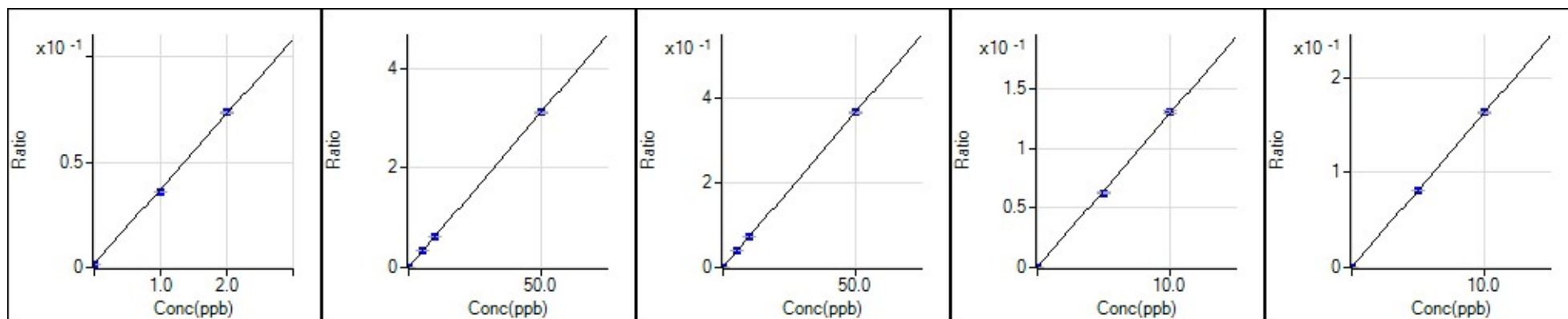
ISTD: 89 Y

$$y = 2.220E-3 x + 1.251E-4$$

R 0.9990

DL 0.06203

BEC 0.05633



105 Pd [He]

ISTD: 89 Y

$$y = 3.556E-2 x + 1.702E-3$$

R 0.9995

DL 0.01726

BEC 0.04786

107 Ag [He]

ISTD: 89 Y

$$y = 6.242E-2 x + 6.733E-4$$

R 0.9999

DL 0.003667

BEC 0.01079

111 Cd [He]

ISTD: 89 Y

$$y = 7.294E-3 x + 2.418E-5$$

R 1.0000

DL 0.003736

BEC 0.003315

118 Sn [He]

ISTD: 89 Y

$$y = 1.292E-2 x + 1.653E-4$$

R 0.9997

DL 0.006777

BEC 0.0128

121 Sb [He]

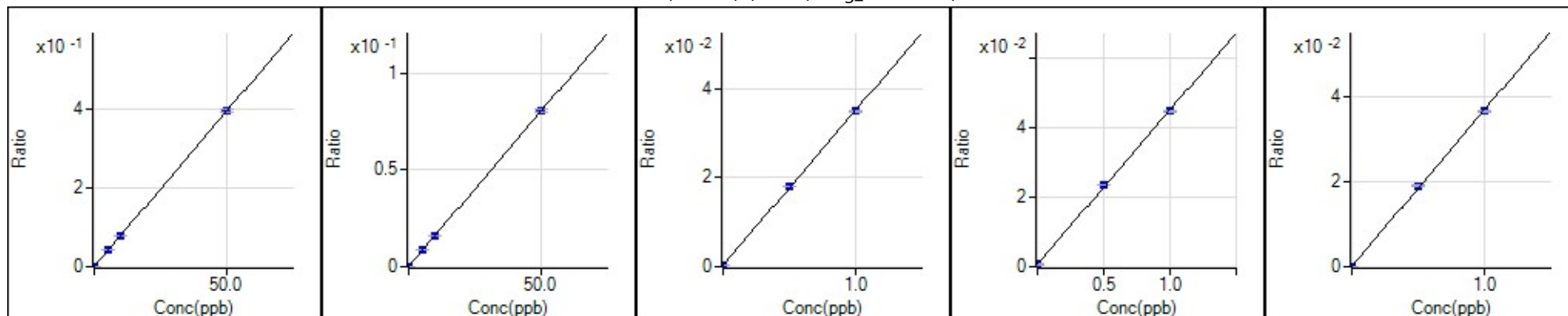
ISTD: 89 Y

$$y = 1.627E-2 x + 3.873E-4$$

R 1.0000

DL 0.01147

BEC 0.0238



133 Cs [He]

ISTD: 175 Lu

$$y = 7.923\text{E-}3 x + 3.765\text{E-}5$$

R 1.0000

DL 0.007771

BEC 0.004753

137 Ba [He]

ISTD: 175 Lu

$$y = 1.605\text{E-}3 x + 4.705\text{E-}5$$

R 0.9999

DL 0.02638

BEC 0.02931

139 La [He]

ISTD: 175 Lu

$$y = 3.482\text{E-}2 x + 2.903\text{E-}4$$

R 0.9999

DL 0.00423

BEC 0.008338

140 Ce [He]

ISTD: 175 Lu

$$y = 4.456\text{E-}2 x + 6.728\text{E-}4$$

R 0.9998

DL 0.002787

BEC 0.0151

141 Pr [He]

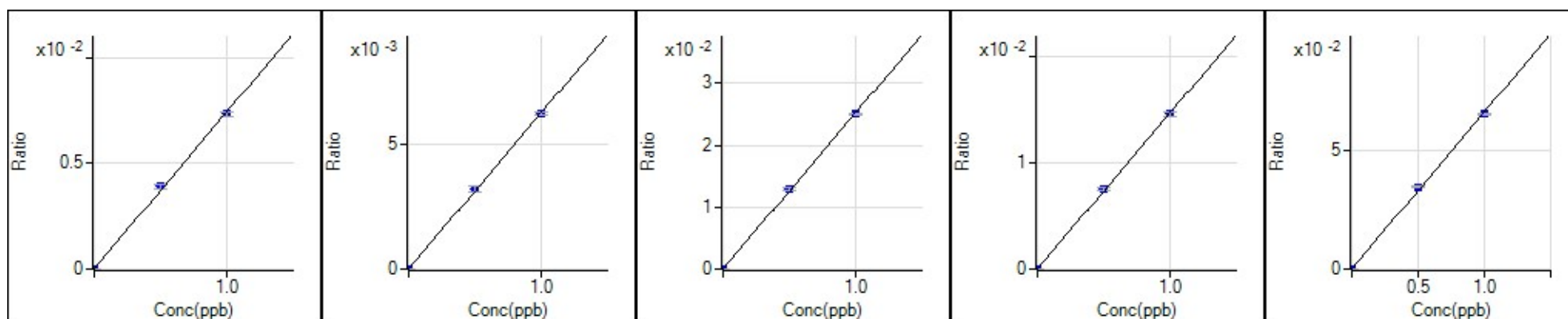
ISTD: 175 Lu

$$y = 3.700\text{E-}2 x + 3.914\text{E-}5$$

R 0.9998

DL 0.001947

BEC 0.001058



146 Nd [He]

ISTD: 175 Lu

$$y = 7.404\text{E-}3 x + 1.098\text{E-}5$$

R 0.9993

DL 0.001089

BEC 0.001482

147 Sm [He]

ISTD: 175 Lu

$$y = 6.241\text{E-}3 x + 1.563\text{E-}6$$

R 0.9998

DL 0.001301

BEC 0.0002504

153 Eu [He]

ISTD: 175 Lu

$$y = 2.519\text{E-}2 x + 6.252\text{E-}6$$

R 0.9998

DL 0.0008539

BEC 0.0002482

157 Gd [He]

ISTD: 175 Lu

$$y = 1.466\text{E-}2 x + 1.416\text{E-}5$$

R 0.9999

DL 0.002574

BEC 0.0009665

159 Tb [He]

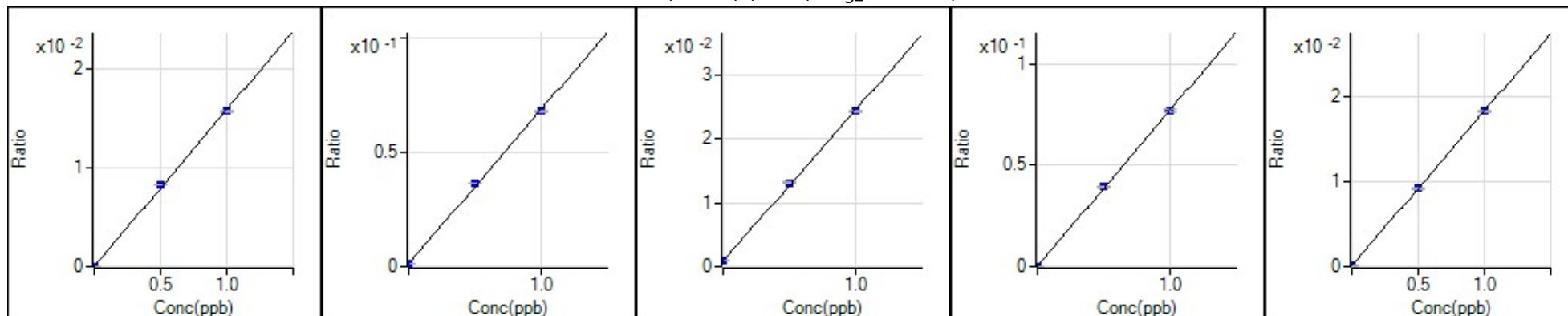
ISTD: 175 Lu

$$y = 6.621\text{E-}2 x + 3.442\text{E-}5$$

R 0.9994

DL 0.0007997

BEC 0.0005199



163 Dy [He]

ISTD: 175 Lu

$$y = 1.592\text{E-}2 x + 1.255\text{E-}5$$

R 0.9996

DL 0.0005199

BEC 0.0007887

165 Ho [He]

ISTD: 175 Lu

$$y = 6.731\text{E-}2 x + 1.240\text{E-}3$$

R 0.9995

DL 0.001658

BEC 0.01843

166 Er [He]

ISTD: 175 Lu

$$y = 2.359\text{E-}2 x + 9.359\text{E-}4$$

R 0.9997

DL 0.008019

BEC 0.03968

169 Tm [He]

ISTD: 175 Lu

$$y = 7.710\text{E-}2 x + 1.427\text{E-}4$$

R 0.9999

DL 8.716E-05

BEC 0.001851

172 Yb [He]

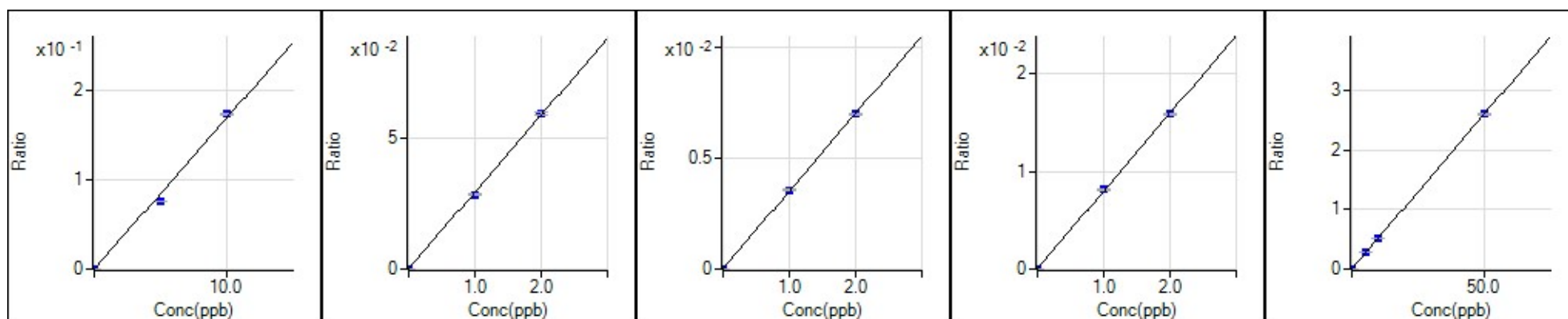
ISTD: 175 Lu

$$y = 1.816\text{E-}2 x + 9.248\text{E-}5$$

R 1.0000

DL 0.002897

BEC 0.005093



178 Hf [He]

ISTD: 175 Lu

$$y = 1.687\text{E-}2 x + 2.666\text{E-}5$$

R 0.9972

DL 0.001275

BEC 0.00158

195 Pt [He]

ISTD: 175 Lu

$$y = 2.918\text{E-}2 x + 1.026\text{E-}4$$

R 0.9997

DL 0.0006133

BEC 0.003514

201 Hg [He]

ISTD: 175 Lu

$$y = 3.505\text{E-}3 x + 1.294\text{E-}5$$

R 0.9999

DL 0.001767

BEC 0.003691

202 Hg [He]

ISTD: 175 Lu

$$y = 7.970\text{E-}3 x + 3.126\text{E-}5$$

R 0.9999

DL 0.002258

BEC 0.003923

205 Tl [He]

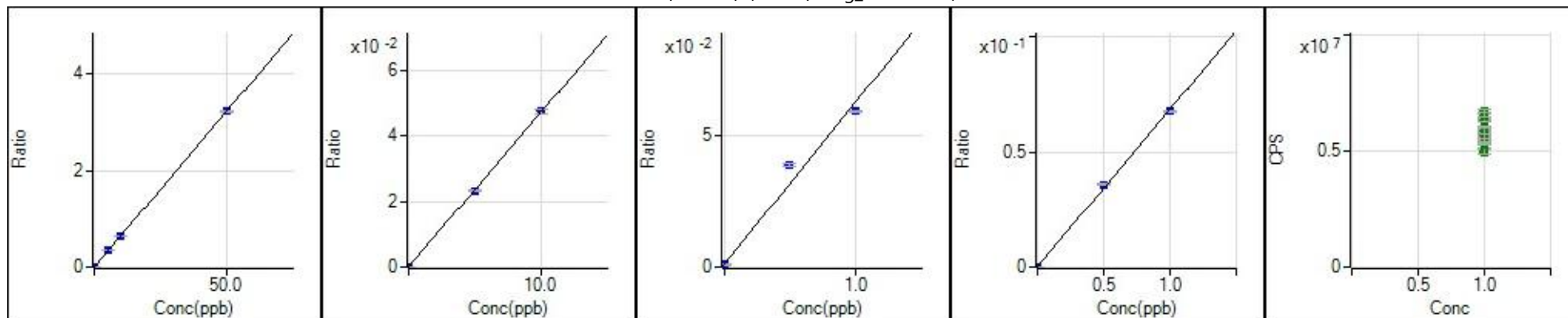
ISTD: 175 Lu

$$y = 5.213\text{E-}2 x + 2.401\text{E-}4$$

R 1.0000

DL 0.003745

BEC 0.004606



208 Pb [He]

ISTD: 175 Lu

 $y = 6.466E-2 x + 1.854E-3$

R 1.0000

DL 0.009429

BEC 0.02868

209 Bi [He]

ISTD: 175 Lu

 $y = 4.706E-3 x + 8.943E-5$

R 0.9999

DL 0.008295

BEC 0.019

232 Th [He]

ISTD: 175 Lu

 $y = 6.202E-2 x + 9.470E-4$

R 0.9849

DL 0.006537

BEC 0.01527

238 U [He]

ISTD: 175 Lu

 $y = 6.851E-2 x + 9.416E-5$

R 0.9994

DL 0.001166

BEC 0.001374

45 Sc [No Gas]

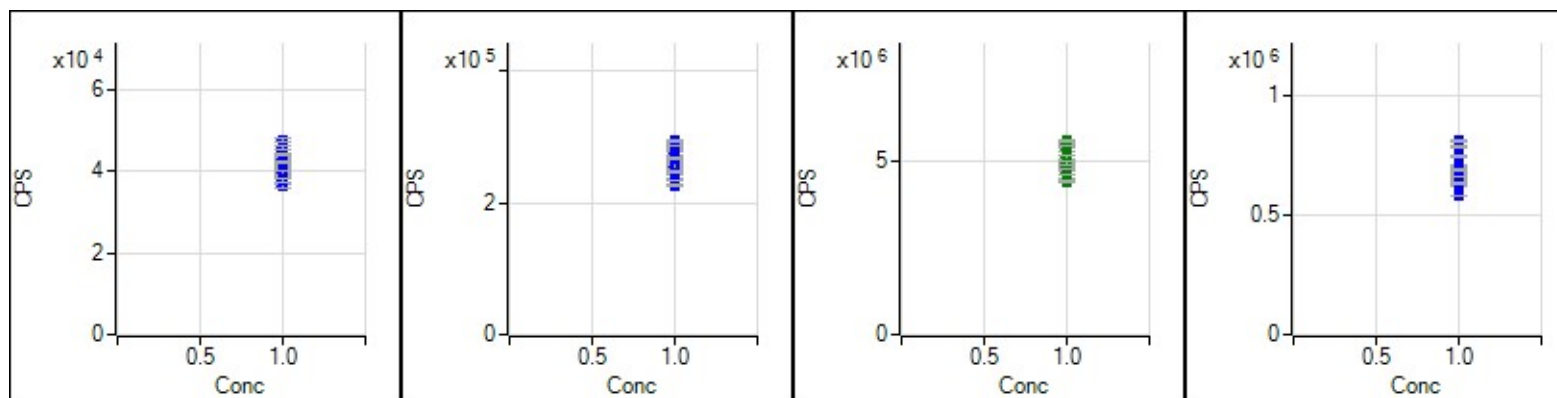
ISTD: ---

Excluded

R

DL

BEC



45 Sc [He]

ISTD: ---

Excluded

R

DL

BEC

89 Y [He]

ISTD: ---

Excluded

R

DL

BEC

89 -> 105 Y [O2]

ISTD: ---

Excluded

R

DL

BEC

175 Lu [He]

ISTD: ---

Excluded

R

DL

BEC