

## Supporting Information

# Accurate Determination of Selenium in the Serum by Inductively Coupled Plasma Tandem-Mass Spectrometry

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**Table S1.** Potential spectral interferences on the Se isotopes

Isotope	Abundance (%)	Potential spectral interferences	MS/MS mode
<sup>74</sup> Se	0.89	<sup>37</sup> Cl <sub>2</sub> <sup>+</sup> , <sup>36</sup> Ar <sup>38</sup> Ar <sup>+</sup> , <sup>38</sup> Ar <sup>36</sup> S <sup>+</sup> , <sup>40</sup> Ar <sup>34</sup> S <sup>+</sup>	N-atom transfer
<sup>76</sup> Se	9.37	<sup>40</sup> Ar <sup>36</sup> Ar <sup>+</sup> , <sup>38</sup> Ar <sub>2</sub> <sup>+</sup> , <sup>152</sup> Gd <sup>++</sup>	N-atom transfer
<sup>77</sup> Se	7.63	<sup>39</sup> K <sup>38</sup> Ar <sup>+</sup> , <sup>61</sup> Ni <sup>16</sup> O <sup>+</sup> , <sup>76</sup> GeH <sup>+</sup> , <sup>76</sup> SeH <sup>+</sup> , <sup>40</sup> Ar <sup>37</sup> Cl <sup>+</sup> , <sup>40</sup> Ca <sup>37</sup> Cl <sup>+</sup> , <sup>38</sup> Ar <sub>2</sub> H <sup>+</sup> , <sup>154</sup> Gd <sup>++</sup>	N-atom transfer
<sup>78</sup> Se	23.8	<sup>40</sup> Ca <sup>38</sup> Ar <sup>+</sup> , <sup>62</sup> Ni <sup>16</sup> O <sup>+</sup> , <sup>77</sup> SeH <sup>+</sup> , <sup>41</sup> K <sup>37</sup> Cl <sup>+</sup> , <sup>156</sup> Gd <sup>++</sup> , <sup>38</sup> Ar <sup>40</sup> Ar <sup>+</sup> , <sup>39</sup> K <sup>39</sup> K <sup>+</sup> , <sup>78</sup> Kr <sup>+</sup>	N-atom transfer
<sup>80</sup> Se	49.6	<sup>40</sup> Ca <sup>40</sup> Ar <sup>+</sup> , <sup>64</sup> Ni <sup>16</sup> O <sup>+</sup> , <sup>64</sup> Zn <sup>16</sup> O <sup>+</sup> , <sup>32</sup> S <sub>2</sub> <sup>16</sup> O <sup>+</sup> , <sup>32</sup> S <sup>16</sup> O <sub>3</sub> <sup>+</sup> , <sup>79</sup> BrH <sup>+</sup> , <sup>45</sup> Sc <sup>35</sup> Cl <sup>+</sup> , <sup>160</sup> Gd <sup>++</sup> , <sup>40</sup> Ar <sup>40</sup> Ar <sup>+</sup> , <sup>40</sup> Ca <sup>40</sup> Ca <sup>+</sup> , <sup>80</sup> Kr <sup>+</sup>	N-atom transfer
<sup>82</sup> Se	8.73	<sup>42</sup> Ca <sup>40</sup> Ar <sup>+</sup> , <sup>66</sup> Zn <sup>16</sup> O <sup>+</sup> , <sup>81</sup> BrH <sup>+</sup> , <sup>45</sup> Sc <sup>37</sup> Cl <sup>+</sup> , <sup>82</sup> Kr <sup>+</sup>	N-atom transfer

**Table S2.** Comparison of the proposed method using previously reported methods for the analysis of Se level

Analytical method	Sample	LOD (μg L <sup>-1</sup> )	Reference
ESI-ICP-MS	Human plasma	8-52	22
ICP-MS/MS	Serum	0.04	23
ICP-MS/MS	Serum	0.71-0.79	27
ICP-MS	Serum, whole blood, erythrocytes	1.58	44
ICP-MS	Whole Blood	0.32	45
SF-ICP-MS	Human follicular fluid	3	46
ICP-MS/MS	Serum	0.002-0.003	This work

**Table S3.** Standard reference material data and recovery for Se with variable Gd concentration (mean ± standard deviation, n = 6)

Sample	Isotope	Certified (μg L <sup>-1</sup> )	Added 250 μg L <sup>-1</sup> Gd		Added 500 μg L <sup>-1</sup> Gd		Added 1000 μg L <sup>-1</sup> Gd	
			Found (μg L <sup>-1</sup> )	Recovery (%)	Found (μg L <sup>-1</sup> )	Recovery (%)	Found (μg L <sup>-1</sup> )	Recovery (%)
SRM 1598a (Bovine serum)	<sup>78</sup> Se	134.4 ± 5.8	132.6 ± 3.1	98.7	134.9 ± 4.3	100.3	132.0 ± 5.1	98.2
	<sup>80</sup> Se		135.2 ± 4.0	100.6	133.8 ± 3.6	99.6	131.1 ± 4.6	97.5
GBW09131 (Bovine serum)	<sup>78</sup> Se	38.9 ± 2.3	39.5 ± 2.0	101.3	39.1 ± 1.5	100.5	40.8 ± 1.8	104.9
	<sup>80</sup> Se		38.7 ± 1.8	99.5	40.2 ± 1.6	103.3	40.3 ± 2.1	103.6
GBW09141 (Bovine blood)	<sup>78</sup> Se	99.0 ± 6.9	101.5 ± 2.8	102.5	98.1 ± 3.7	99.1	102.2 ± 4.4	103.2
	<sup>80</sup> Se		100.4 ± 3.4	101.4	97.8 ± 3.3	98.8	100.5 ± 2.9	101.5