



**SUPPL FIGURE 1.** Lin's concordance correlation plots of the blood (A, B) and whole-body residence times (C, D) of the patient group after radioiodine treatment. The reference residence times were derived from the reference protocol using the complete WB and BS data. In the top panels (A, B), estimates of the blood residence times were obtained with protocols  $W(24,96)$  and  $W(48,96)$  assuming a fixed scaling factor (of 0.13) for all of the patients. In the bottom panels (C, D), estimates of the whole-body residence times were derived from protocols  $B(24,96)$  and  $B(48,96)$ , which use patient-specific scaling factors. The lines of identity (45 degree line) and reduced major axis regression lines are shown by solid and dashed lines, respectively. Lin's concordance correlation coefficients ( $\rho_c$ ) and their confidence intervals (within parentheses) as well as Pearson correlation coefficients ( $r$ ) and their significance levels are also given. In comparison to protocols of type  $W$ , higher similarities ( $\rho_c$ ) and less scatter were observed for protocols  $B(24,96)$  and  $B(48,96)$ , indicating that they provide a better prediction of the residence times of the respective non-measured compartment, that is, the whole-body compartment.

**SUPPL TABLE 1**

Assessment of the 12 Simplified Protocols and the SOP Protocol in the Patient Group Before Treatment

Protocols	Correlation*		Percentage of patients <sup>†</sup>			Statistics of the MTA deviation (%) <sup>‡</sup>					
	$\rho_c$	95% CI	$\pm 20\%$	$< -20\%$	$> +20\%$	Mean	Mean	Median	$\pm SD$	Min.	Max.
C(24)	0.71	0.63–0.78	72	1	27	24	27	8	46	–41	239
C(48)	0.94	0.92–0.96	88	1	11	8	11	4	18	–23	102
C(24,96)	0.95	0.92–0.96	95	4	1	–7	9	–9	8	–29	27
C(48,96)	0.98	0.97–0.98	98	2	0	–5	6	–5	5	–26	12
W(24)	0.74	0.66–0.80	49	1	50	27	30	20	29	–45	135
W(48)	0.89	0.85–0.92	79	0	21	11	14	6	18	–16	86
W(24,96)	0.89	0.85–0.92	75	21	4	–6	14	–7	17	–46	86
W(48,96)	0.87	0.82–0.91	78	17	5	–4	14	–2	19	–53	62
B(24)	0.45	0.32–0.56	62	2	36	40	42	14	75	–37	465
B(48)	0.73	0.64–0.80	69	0	31	23	25	10	39	–18	183
B(24,96)	0.90	0.85–0.93	86	0	14	4	12	–2	22	–17	99
B(48,96)	0.94	0.91–0.96	88	1	11	5	9	1	15	–20	90
SOP	0.98	0.97–0.98	96	1	3	0	5	0	8	–24	27

\*Lin's concordance correlation coefficient ( $\rho_c$ ) and its 95% confidence interval (CI). <sup>†</sup>Percentage of patients with MTA deviations within  $\pm 20\%$ , below  $-20\%$ , and above  $+20\%$ . <sup>‡</sup>Mean, mean absolute percentage deviation, median percentage deviation, SD, minimum and maximum deviations.

**SUPL TABLE 2**

Assessment of the 12 Simplified Protocols and the SOP Protocol in the Patient Group After Treatment

Protocols	Correlation*		Percentage of patients <sup>†</sup>			Statistics of the MTA deviation (%) <sup>‡</sup>					
	$\rho_c$	95% CI	$\pm 20\%$	$< -20\%$	$> +20\%$	Mean	Mean	Median	$\pm SD$	Min.	Max.
C(24)	0.95	0.93–0.97	92	3	5	4	10	0	26	–49	217
C(48)	0.98	0.97–0.99	98	0	2	1	6	0	10	–11	79
C(24,96)	0.97	0.96–0.98	100	0	0	–6	7	–6	4	–16	8
C(48,96)	0.98	0.97–0.99	100	0	0	–3	5	–3	5	–13	11
W(24)	0.90	0.84–0.93	80	4	16	6	14	6	20	–49	118
W(48)	0.89	0.85–0.93	82	6	12	3	12	3	15	–39	39
W(24,96)	0.89	0.84–0.92	83	13	4	–4	12	–4	15	–45	35
W(48,96)	0.88	0.83–0.92	85	11	4	–1	12	0	15	–49	32
B(24)	0.89	0.84–0.92	89	2	9	10	15	2	47	–31	417
B(48)	0.97	0.96–0.98	95	0	5	3	7	1	14	–15	93
B(24,96)	0.98	0.97–0.98	98	1	1	–4	6	–5	6	–24	28
B(48,96)	0.98	0.98–0.99	100	0	0	–2	4	–2	5	–18	11
SOP	0.98	0.98–0.99	99	1	0	–3	5	–3	5	–23	10

\*Lin's concordance correlation coefficient ( $\rho_c$ ) and its 95% confidence interval (CI). <sup>†</sup>Percentage of patients with MTA deviations within  $\pm 20\%$ , below  $-20\%$ , and above  $+20\%$ . <sup>‡</sup>Mean, mean absolute percentage deviation, median percentage deviation, SD, minimum and maximum deviations.