

## ONLINE APPENDIX

Table A1. *Participating countries and used enzyme immunoassays indicating antibodies against measles, mumps, rubella with the concerning detection range*

Country	Measles			Mumps			Rubella		
	Kit producer	Units	Test limits‡	Kit producer	Units	Test limits‡	Kit producer	Units	Test limits‡
Germany (RL)	DB	IU	> 0.01	DB	titre	> 10	DB	IU	> 1
Australia*	DB	IU	> 0.01	DB*	titre	> 10	DB*	IU	> 1
Belgium	HC	AU	> 0.03	HC	titre	> 0.5	DO	IU	> 1
Bulgaria	HC	AU	> 0.03	HC	titre	> 0.03	PL	IU	10 -500
Cyprus	ER	IU	0.05-5	ER	AU	2 - 200	Radim	IU	1-200
Czech Republic	SK	AU	20-3200	SK	AU	> 20	DO	IU	> 1
Eire	Biotech	ISR	> 0.1	Captia	ISR	> 0.1	Biokit	IU	> 5
England & Wales	DB	IU	> 0.01	DB	titre	> 10	Microgen	IU	1-80
Finland*	DB*	IU	> 0.006	DB	titre	> 20	DB*	IU	> 1
Greece*	DB	IU	> 0.01	DB	titre	10 - 8000	DB	IU	> 1
Hungary	VR	IU	0.05-5	VR	AU	3 - 2000	DO	IU	1-200
Israel†	DB	IU	> 0.017	DB	titre	> 22	DB	IU	> 2
Latvia	HU	IU	0.05–5.5	HU	AU	2 - 230	PL	IU	10-500
Lithuania	DB	IU	> 0.006	DB	titre	> 10	DB	IU	> 1
Luxembourg	DB	IU	> 0.01	DB	titre	> 10	DB	IU	> 1
Malta	VR	IU	0.05-5	VR	AU	150	Abbott	IU	1-500
The Netherlands*	In-house	IU	> 0.02	In-house	AU	> 4	In-house	IU	> 3
Romania	DB	IU	> 0.01	DB	titre	> 10	DB	IU	> 1
Slovakia	VT	AU	> 9	VT	AU	> 9	DO	IU	> 10
Slovenia	DB	IU	> 0.01	DB	titre	> 7	DB	IU	> 1
Spain†	DB	IU	> 0.01	DB	titre	> 10	DB*	IU	> 1
Sweden†	In-house	IU	> 0.12	DB	titre	> 10	In-house	IU	> 10

DB, Dade Behring; ER, Euroimmun; HC, Hycor; HU, Human; SK, Seiken; VR, VirionSerion; VT, Virotech; DO, Dia-Sorin; PL, Platelia; AU, arbitrary units; IU, international units; ISR, index; RL, reference laboratory.

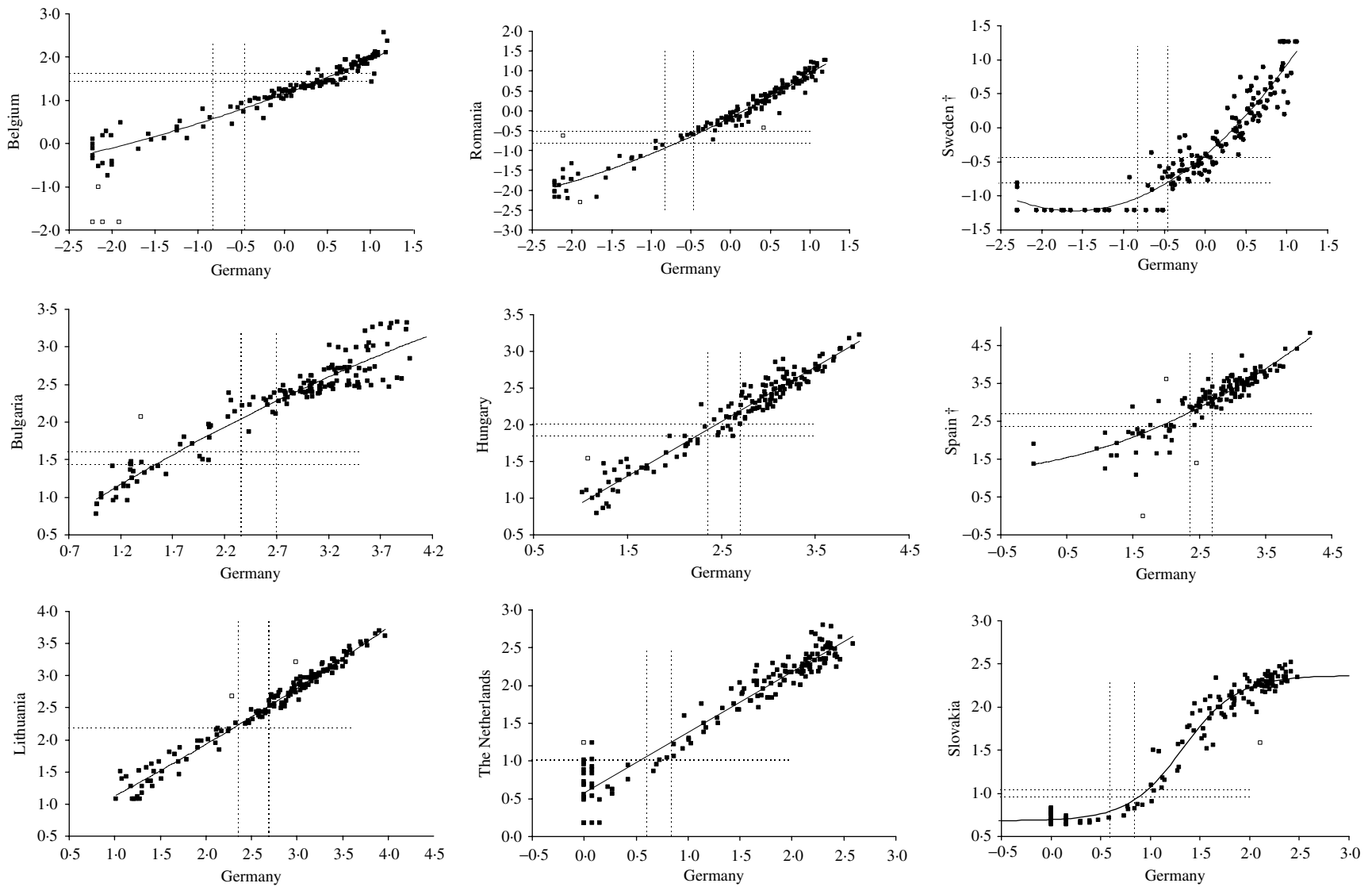
\* Countries took part for quality assurance only.

† Countries performed back-standardization.

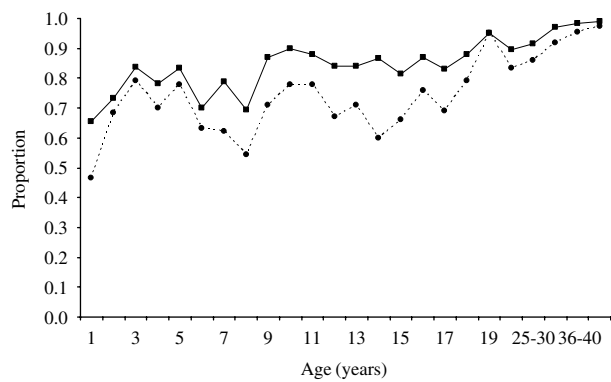
‡ Test limits of some participants indicate values below the cut-off values provided by the kit producer.

Table A2. *Distribution of antibody values against measles, mumps and rubella virus in the 151 sera of the reference panel, detected by EIA (Dade Behring); mean values of four tests in the reference laboratory*

	Measles antibodies (IU/ml)		Mumps antibodies (titres)		Rubella antibodies (IU/ml)	
	Cut-offs	<i>n</i>	Cut-offs	<i>n</i>	Cut-offs	<i>n</i>
Negative	< 0.15	28	< 1:230	40	< 4	35
Equivocal	0.15–0.35	4	1:230–1:500	11	4–7	4
Positive						
Low	0.351–0.99	22	1:501–1:1200	33	7.1–35	22
Medium	1.0–3.0	40	1:1201–1:4000	50	35.1–100	31
High	> 3.0	57	> 1:4000	17	> 100	59



**Fig. A1.** Comparison of antibody values of the MMR reference panel measured by EIA in the respective country (y axis) plotted against the EIA results of the reference laboratory (Germany, x axis) on the log<sub>10</sub> scale. Open squares denote outliers, dotted lines denote the equivocal ranges, solid lines are the regression models. Measles antibodies (*top row*), mumps antibodies (*middle row*), rubella antibodies (*bottom row*). † Participants performed back-standardization.



**Fig. A2.** Percentage of sera with positive (including equivocal) measles antibody values before (- -●- -) and after (—■—) the standardization procedure for seroprevalence data of Cyprus; sera collected in 2003.