

Global Antigen Frequencies

ABO



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
A	ABO1	43% ¹	27% ¹	27% ¹¹	21% ³	28% ⁴	39% ⁵	34% ^{7,8}
B	ABO2	9% ¹	20% ¹	16% ¹¹	40% ³	29% ⁴	22% ⁵	14% ^{7,8}
AB	ABO3	4% ¹	4% ¹	4% ¹¹	9% ³	9% ⁴	10% ⁵	3% ^{7,8}
O*		44% ¹	49% ¹	54% ¹¹	29% ³	34% ⁴	29% ⁵	49% ^{7,8}
O _h **		1/million ¹			1/10,000 ¹		1/150,000 ¹	

Rh



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
D	RH1	85% ¹	92% ¹	89% ¹¹	96% ³	>99% ²	>99% ²	92% ^{7,8}
C	RH2	68% ¹	27% ¹	64% ¹¹	87% ⁹	92% ²	88% ²	55% ^{7,8}
C ^W	RH8	2% ¹	1% ¹			0% ²	0% ²	1% ^{7,8}
E	RH3	29% ¹	22% ¹	30% ¹¹	20% ⁹	40% ²	51% ²	29% ^{7,8}
c	RH4	80% ¹	96% ¹	79% ¹¹	58% ⁹	48% ²	57% ²	83% ^{7,8}
e	RH5	98% ¹	98% ¹	95% ¹¹	98% ⁹	94% ²	91% ²	92% ^{7,8}

Kell



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
K	KEL1	9% ¹	2% ¹	20% ¹¹	4% ⁹	<0.01%	<0.01%	5% ^{7,8}
k	KEL2	>99% ¹	>99% ¹	99% ¹¹	>99.9% ⁹	>99% ²	>99% ²	95% ^{7,8}
Kp ^a	KEL3	2% ¹	<0.01% ¹		1% ⁶	<0.01%	<0.01%	1% ^{7,8}
Kp ^b	KEL4	>99% ¹	>99% ¹		>99% ⁶	>99% ²	>99% ²	>99% ^{7,8}
Js ^a	KEL6	0.01% ¹	20% ¹					4% ^{7,8}
Js ^b	KEL7	>99% ¹	99% ¹			>99% ²	>99% ²	>99% ^{7,8}

Duffy



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
Fy ^a	FY1	66% ¹	10% ¹	36% ¹¹	87% ⁹	>99% ²	99% ²	39% ^{7,8}
Fy ^b	FY2	83% ¹	23% ¹	40% ¹¹	58% ⁹	9% ²	18% ²	50% ^{7,8}
Fy3	FY3	>99% ¹	32% ¹	65% ¹¹	>99% ⁹	>99% ¹		70% ^{7,8}

Kidd



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
Jk ^a	JK1	77% ¹	92% ¹	58% ¹¹	81% ⁹	69% ²	67% ²	93% ^{7,8}
Jk ^b	JK2	74% ¹	49% ¹	50% ¹¹	68% ⁹	74% ²	82% ²	54% ^{7,8}
Jk3	JK3	>99% ¹	>99% ¹		>99% ⁹			>99% ^{7,8}

Diego



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
Di ^a	DI1	0.01% ¹				4% ²	9% ²	3% ^{7,8}
Di ^b	DI2	>99% ¹	>99% ¹					>99% ^{7,8}
Wr ^a	DI3	<0.01% ¹	0% ¹⁰					<0.01% ^{7,8}
Wr ^b	DI4	>99% ¹						>99% ^{7,8}

Lewis



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
Le ^a	LE1	22% ¹	23% ¹	19% ¹¹	21% ⁶	24% ²	19% ²	19% ^{7,8}
Le ^b	LE2	72% ¹	55% ¹	72% ¹¹	61% ⁶	77% ²	72% ²	65% ^{7,8}

MNS



Antigen	ISBT	Caucasian	Black	Arabic	Indian	Chinese	Japanese	Brazilian
M	MNS1	78% ¹	74% ¹	96% ¹¹	89% ⁹	81% ²	79% ²	83% ^{7,8}
N	MNS2	72% ¹	75% ¹	45% ¹¹	65% ⁹	67% ²	67% ²	71% ^{7,8}
S	MNS3	55% ¹	31% ¹	65% ¹¹	55% ⁹	7% ²	10% ²	45% ^{7,8}
s	MNS4	89% ¹	93% ¹	78% ¹¹	89% ⁹	>99% ²	>99% ²	93% ^{7,8}
U	MNS5	>99% ¹	99% ¹		>99.9% ⁹	>99% ²	>99% ²	>99% ^{7,8}
Mi ^a ***	MNS7	<0.01% ¹²	<0.01% ¹²			6% ¹²	<0.01% ¹²	

Mia



*This data refers to group O

**This data refers to Bombay which is the absence of the H antigen

*** The term 'Miltenerger' is often used to describe a complex family of hybrid glycoprotein phenotypes including GPMur, GPHut, GPHil, GPHop, etc. For more information, please refer to reference #12



werfen