

**Department of Agriculture,
Food and the Marine
An Roinn Talmhaíochta,
Bia agus Mara
EMAIL VERSION**

Cork Regional Veterinary Laboratory
Model Farm Road
Cork

Phone: 021-4819970
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Collins John
Mallow Vets
5 Carmichael Lane
Mallow
Co. Cork

Our Reference	Cork/15/01904
Senders Reference	
Report Date	19-Mar-2015
No. Animals / Samples	21
Species	Bovine
Herd / Flock ID	
Date Received	18-Mar-2015
Originating County	Cork

Lab Code	Type	Animal ID	Sample ID	Component	Result	Units	Normal Range	Conclusion
C15-005431	Blood	6 Calf Born Dead	6	βHB	0.65	mmol/l	0-0.9	
C15-005431	Blood	6 Calf Born Dead	6	Calcium	2.60	mmol/l	2.1-3.1	
C15-005431	Blood	6 Calf Born Dead	6	Inorganic Phosphorus	1.73	mmol/l	1.4-2.5	
C15-005431	Blood	6 Calf Born Dead	6	Copper (Serum)	9.66	μmol/l	9.4-24	
C15-005431	Blood	6 Calf Born Dead	6	GSH-PX Bovine (Units/ml PCV)	105	Units/ml	18.46-500	
C15-005431	Blood	6 Calf Born Dead	6	GLDH	12	iu/l	0-25	
C15-005431	Blood	6 Calf Born Dead	6	GGT	4	iu/l	18-55	Lo
C15-005431	Blood	6 Calf Born Dead	6	AST	118	iu/l	38-120	
C15-005431	Blood	6 Calf Born Dead	6	Total Protein	67.3	g/l	57-83	
C15-005431	Blood	6 Calf Born Dead	6	Albumin	36.4	g/l	23-37	
C15-005431	Blood	6 Calf Born Dead	6	Globulin	30.9	g/l	31-51	Lo
C15-005431	Blood	6 Calf Born Dead	6	A/G Ratio	1.18		0.5-1.5	
C15-005431	Blood	6 Calf Born Dead	6	Urea	3.35	mmol/l	2.65-6.89	
C15-005431	Blood	6 Calf Born Dead	6	Fibrinogen	4	g/l	3-7	
C15-005432	Blood	7 Calf Born Dead	7	βHB	0.56	mmol/l	0-0.9	
C15-005432	Blood	7 Calf Born Dead	7	Calcium	2.52	mmol/l	2.1-3.1	
C15-005432	Blood	7 Calf Born Dead	7	Inorganic Phosphorus	1.79	mmol/l	1.4-2.5	
C15-005432	Blood	7 Calf Born Dead	7	Copper (Serum)	8.71	μmol/l	9.4-24	Lo
C15-005432	Blood	7 Calf Born Dead	7	GSH-PX Bovine (Units/ml PCV)	156	Units/ml	18.46-500	
C15-005432	Blood	7 Calf Born Dead	7	GLDH	9	iu/l	0-25	
C15-005432	Blood	7 Calf Born Dead	7	GGT	16	iu/l	18-55	Lo
C15-005432	Blood	7 Calf Born Dead	7	AST	95	iu/l	38-120	
C15-005432	Blood	7 Calf Born Dead	7	Total Protein	70.2	g/l	57-83	
C15-005432	Blood	7 Calf Born Dead	7	Albumin	35.7	g/l	23-37	
C15-005432	Blood	7 Calf Born Dead	7	Globulin	34.6	g/l	31-51	
C15-005432	Blood	7 Calf Born Dead	7	A/G Ratio	1.03		0.5-1.5	
C15-005432	Blood	7 Calf Born Dead	7	Urea	3.45	mmol/l	2.65-6.89	
C15-005432	Blood	7 Calf Born Dead	7	Fibrinogen	7	g/l	3-7	
C15-005433	Blood	8 Calf Born Dead	8	βHB	0.49	mmol/l	0-0.9	
C15-005433	Blood	8 Calf Born Dead	8	Calcium	2.59	mmol/l	2.1-3.1	
C15-005433	Blood	8 Calf Born Dead	8	Inorganic Phosphorus	1.49	mmol/l	1.4-2.5	

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

Signed: Cosme Sánchez-Miguel

Submission Assigned To: Cosme Sánchez-Miguel
Research Officer

C15-005433	Blood	8 Calf Born Dead	8	Copper (Serum)	11.10	μmol/l	9.4-24	
C15-005433	Blood	8 Calf Born Dead	8	GSH-PX Bovine (Units/ml PCV)	117	Units/ml	18.46-500	
C15-005433	Blood	8 Calf Born Dead	8	GLDH	23	iu/l	0-25	
C15-005433	Blood	8 Calf Born Dead	8	GGT	30	iu/l	18-55	
C15-005433	Blood	8 Calf Born Dead	8	AST	109	iu/l	38-120	
C15-005433	Blood	8 Calf Born Dead	8	Total Protein	68.2	g/l	57-83	
C15-005433	Blood	8 Calf Born Dead	8	Albumin	36.0	g/l	23-37	
C15-005433	Blood	8 Calf Born Dead	8	Globulin	32.2	g/l	31-51	
C15-005433	Blood	8 Calf Born Dead	8	A/G Ratio	1.12		0.5-1.5	
C15-005433	Blood	8 Calf Born Dead	8	Urea	3.26	mmol/l	2.65-6.89	
C15-005433	Blood	8 Calf Born Dead	8	Fibrinogen	6	g/l	3-7	
C15-005434	Blood	9 Calf Born Dead	9	βHB	0.86	mmol/l	0-0.9	
C15-005434	Blood	9 Calf Born Dead	9	Calcium	2.55	mmol/l	2.1-3.1	
C15-005434	Blood	9 Calf Born Dead	9	Inorganic Phosphorus	1.47	mmol/l	1.4-2.5	
C15-005434	Blood	9 Calf Born Dead	9	Copper (Serum)	9.99	μmol/l	9.4-24	
C15-005434	Blood	9 Calf Born Dead	9	GSH-PX Bovine (Units/ml PCV)	87	Units/ml	18.46-500	
C15-005434	Blood	9 Calf Born Dead	9	GLDH	3	iu/l	0-25	
C15-005434	Blood	9 Calf Born Dead	9	GGT	12	iu/l	18-55	Lo
C15-005434	Blood	9 Calf Born Dead	9	AST	64	iu/l	38-120	
C15-005434	Blood	9 Calf Born Dead	9	Total Protein	72.7	g/l	57-83	
C15-005434	Blood	9 Calf Born Dead	9	Albumin	36.0	g/l	23-37	
C15-005434	Blood	9 Calf Born Dead	9	Globulin	36.7	g/l	31-51	
C15-005434	Blood	9 Calf Born Dead	9	A/G Ratio	0.98		0.5-1.5	
C15-005434	Blood	9 Calf Born Dead	9	Urea	3.69	mmol/l	2.65-6.89	
C15-005434	Blood	9 Calf Born Dead	9	Fibrinogen	4	g/l	3-7	
C15-005435	Blood	12 Calf Born Dead	12	βHB	0.82	mmol/l	0-0.9	
C15-005435	Blood	12 Calf Born Dead	12	Calcium	2.42	mmol/l	2.1-3.1	
C15-005435	Blood	12 Calf Born Dead	12	Inorganic Phosphorus	1.33	mmol/l	1.4-2.5	Lo
C15-005435	Blood	12 Calf Born Dead	12	Copper (Serum)	14.30	μmol/l	9.4-24	
C15-005435	Blood	12 Calf Born Dead	12	GSH-PX Bovine (Units/ml PCV)	97	Units/ml	18.46-500	
C15-005435	Blood	12 Calf Born Dead	12	GLDH	20	iu/l	0-25	
C15-005435	Blood	12 Calf Born Dead	12	GGT	24	iu/l	18-55	
C15-005435	Blood	12 Calf Born Dead	12	AST	191	iu/l	38-120	Hi
C15-005435	Blood	12 Calf Born Dead	12	Total Protein	68.0	g/l	57-83	
C15-005435	Blood	12 Calf Born Dead	12	Albumin	32.9	g/l	23-37	
C15-005435	Blood	12 Calf Born Dead	12	Globulin	35.1	g/l	31-51	
C15-005435	Blood	12 Calf Born Dead	12	A/G Ratio	0.94		0.5-1.5	
C15-005435	Blood	12 Calf Born Dead	12	Urea	3.06	mmol/l	2.65-6.89	
C15-005435	Blood	12 Calf Born Dead	12	Fibrinogen	6	g/l	3-7	
C15-005436	Blood	13 Calf Born Dead	13	βHB	0.56	mmol/l	0-0.9	
C15-005436	Blood	13 Calf Born Dead	13	Calcium	2.59	mmol/l	2.1-3.1	
C15-005436	Blood	13 Calf Born Dead	13	Inorganic Phosphorus	1.99	mmol/l	1.4-2.5	
C15-005436	Blood	13 Calf Born Dead	13	Copper (Serum)	13.30	μmol/l	9.4-24	
C15-005436	Blood	13 Calf Born Dead	13	GSH-PX Bovine (Units/ml PCV)	134	Units/ml	18.46-500	
C15-005436	Blood	13 Calf Born Dead	13	GLDH	33	iu/l	0-25	Hi

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

Signed: Cosme Sánchez-Miguel

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C15-005436	Blood	13 Calf Born Dead 13	GGT	8	iu/l	18-55	Lo
C15-005436	Blood	13 Calf Born Dead 13	AST	97	iu/l	38-120	
C15-005436	Blood	13 Calf Born Dead 13	Total Protein	69.8	g/l	57-83	
C15-005436	Blood	13 Calf Born Dead 13	Albumin	35.6	g/l	23-37	
C15-005436	Blood	13 Calf Born Dead 13	Globulin	34.2	g/l	31-51	
C15-005436	Blood	13 Calf Born Dead 13	A/G Ratio	1.04		0.5-1.5	
C15-005436	Blood	13 Calf Born Dead 13	Urea	2.21	mmol/l	2.65-6.89	Lo
C15-005436	Blood	13 Calf Born Dead 13	Fibrinogen	6	g/l	3-7	
C15-005437	Blood	20 Calf Born Dead 20	βHB	0.65	mmol/l	0-0.9	
C15-005437	Blood	20 Calf Born Dead 20	Calcium	2.35	mmol/l	2.1-3.1	
C15-005437	Blood	20 Calf Born Dead 20	Inorganic Phosphorus	2.31	mmol/l	1.4-2.5	
C15-005437	Blood	20 Calf Born Dead 20	Copper (Serum)	12.20	μmol/l	9.4-24	
C15-005437	Blood	20 Calf Born Dead 20	GSH-PX Bovine (Units/ml PCV)	121	Units/ml	18.46-500	
C15-005437	Blood	20 Calf Born Dead 20	GLDH	12	iu/l	0-25	
C15-005437	Blood	20 Calf Born Dead 20	GGT	4	iu/l	18-55	Lo
C15-005437	Blood	20 Calf Born Dead 20	AST	137	iu/l	38-120	Hi
C15-005437	Blood	20 Calf Born Dead 20	Total Protein	73.1	g/l	57-83	
C15-005437	Blood	20 Calf Born Dead 20	Albumin	38.1	g/l	23-37	Hi
C15-005437	Blood	20 Calf Born Dead 20	Globulin	35.0	g/l	31-51	
C15-005437	Blood	20 Calf Born Dead 20	A/G Ratio	1.09		0.5-1.5	
C15-005437	Blood	20 Calf Born Dead 20	Urea	3.60	mmol/l	2.65-6.89	
C15-005437	Blood	20 Calf Born Dead 20	Fibrinogen	4	g/l	3-7	
C15-005438	Blood	21 Calf Born Dead 21	βHB	0.46	mmol/l	0-0.9	
C15-005438	Blood	21 Calf Born Dead 21	Calcium	2.31	mmol/l	2.1-3.1	
C15-005438	Blood	21 Calf Born Dead 21	Inorganic Phosphorus	1.58	mmol/l	1.4-2.5	
C15-005438	Blood	21 Calf Born Dead 21	Copper (Serum)	12.40	μmol/l	9.4-24	
C15-005438	Blood	21 Calf Born Dead 21	GSH-PX Bovine (Units/ml PCV)	143	Units/ml	18.46-500	
C15-005438	Blood	21 Calf Born Dead 21	GLDH	5	iu/l	0-25	
C15-005438	Blood	21 Calf Born Dead 21	GGT	4	iu/l	18-55	Lo
C15-005438	Blood	21 Calf Born Dead 21	AST	74	iu/l	38-120	
C15-005438	Blood	21 Calf Born Dead 21	Total Protein	59.2	g/l	57-83	
C15-005438	Blood	21 Calf Born Dead 21	Albumin	35.4	g/l	23-37	
C15-005438	Blood	21 Calf Born Dead 21	Globulin	23.8	g/l	31-51	Lo
C15-005438	Blood	21 Calf Born Dead 21	A/G Ratio	1.49		0.5-1.5	
C15-005438	Blood	21 Calf Born Dead 21	Urea	3.91	mmol/l	2.65-6.89	
C15-005438	Blood	21 Calf Born Dead 21	Fibrinogen	4	g/l	3-7	
C15-005439	Blood	1 Calved Normally 1	βHB	0.82	mmol/l	0-0.9	
C15-005439	Blood	1 Calved Normally 1	Calcium	2.26	mmol/l	2.1-3.1	
C15-005439	Blood	1 Calved Normally 1	Inorganic Phosphorus	2.26	mmol/l	1.4-2.5	
C15-005439	Blood	1 Calved Normally 1	Copper (Serum)	14.90	μmol/l	9.4-24	
C15-005439	Blood	1 Calved Normally 1	GSH-PX Bovine (Units/ml PCV)	133	Units/ml	18.46-500	
C15-005439	Blood	1 Calved Normally 1	GLDH	15	iu/l	0-25	
C15-005439	Blood	1 Calved Normally 1	GGT	4	iu/l	18-55	Lo
C15-005439	Blood	1 Calved Normally 1	AST	274	iu/l	38-120	Hi
C15-005439	Blood	1 Calved Normally 1	Total Protein	77.3	g/l	57-83	

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

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C15-005439	Blood	1 Calved Normally	1	Albumin	35.6	g/l	23-37	
C15-005439	Blood	1 Calved Normally	1	Globulin	41.7	g/l	31-51	
C15-005439	Blood	1 Calved Normally	1	A/G Ratio	0.85		0.5-1.5	
C15-005439	Blood	1 Calved Normally	1	Urea	2.56	mmol/l	2.65-6.89	Lo
C15-005440	Blood	2 Calved Normally	2	βHB	0.96	mmol/l	0-0.9	Hi
C15-005440	Blood	2 Calved Normally	2	Calcium	2.40	mmol/l	2.1-3.1	
C15-005440	Blood	2 Calved Normally	2	Inorganic Phosphorus	1.48	mmol/l	1.4-2.5	
C15-005440	Blood	2 Calved Normally	2	Copper (Serum)	13.30	μmol/l	9.4-24	
C15-005440	Blood	2 Calved Normally	2	GSH-PX Bovine (Units/ml PCV)	185	Units/ml	18.46-500	
C15-005440	Blood	2 Calved Normally	2	GLDH	9	iu/l	0-25	
C15-005440	Blood	2 Calved Normally	2	GGT	4	iu/l	18-55	Lo
C15-005440	Blood	2 Calved Normally	2	AST	143	iu/l	38-120	Hi
C15-005440	Blood	2 Calved Normally	2	Total Protein	71.4	g/l	57-83	
C15-005440	Blood	2 Calved Normally	2	Albumin	35.1	g/l	23-37	
C15-005440	Blood	2 Calved Normally	2	Globulin	36.3	g/l	31-51	
C15-005440	Blood	2 Calved Normally	2	A/G Ratio	0.97		0.5-1.5	
C15-005440	Blood	2 Calved Normally	2	Urea	2.82	mmol/l	2.65-6.89	
C15-005440	Blood	2 Calved Normally	2	Fibrinogen	3	g/l	3-7	
C15-005441	Blood	3 Calved Normally	3	βHB	0.77	mmol/l	0-0.9	
C15-005441	Blood	3 Calved Normally	3	Calcium	2.58	mmol/l	2.1-3.1	
C15-005441	Blood	3 Calved Normally	3	Inorganic Phosphorus	1.43	mmol/l	1.4-2.5	
C15-005441	Blood	3 Calved Normally	3	Copper (Serum)	12.30	μmol/l	9.4-24	
C15-005441	Blood	3 Calved Normally	3	GSH-PX Bovine (Units/ml PCV)	76	Units/ml	18.46-500	
C15-005441	Blood	3 Calved Normally	3	GLDH	10	iu/l	0-25	
C15-005441	Blood	3 Calved Normally	3	GGT	20	iu/l	18-55	
C15-005441	Blood	3 Calved Normally	3	AST	91	iu/l	38-120	
C15-005441	Blood	3 Calved Normally	3	Total Protein	70.8	g/l	57-83	
C15-005441	Blood	3 Calved Normally	3	Albumin	33.4	g/l	23-37	
C15-005441	Blood	3 Calved Normally	3	Globulin	37.4	g/l	31-51	
C15-005441	Blood	3 Calved Normally	3	A/G Ratio	0.89		0.5-1.5	
C15-005441	Blood	3 Calved Normally	3	Urea	2.74	mmol/l	2.65-6.89	
C15-005441	Blood	3 Calved Normally	3	Fibrinogen	4	g/l	3-7	
C15-005442	Blood	4 Calved Normally	4	βHB	0.66	mmol/l	0-0.9	
C15-005442	Blood	4 Calved Normally	4	Calcium	2.59	mmol/l	2.1-3.1	
C15-005442	Blood	4 Calved Normally	4	Inorganic Phosphorus	1.91	mmol/l	1.4-2.5	
C15-005442	Blood	4 Calved Normally	4	Copper (Serum)	11.00	μmol/l	9.4-24	
C15-005442	Blood	4 Calved Normally	4	GSH-PX Bovine (Units/ml PCV)	150	Units/ml	18.46-500	
C15-005442	Blood	4 Calved Normally	4	GLDH	12	iu/l	0-25	
C15-005442	Blood	4 Calved Normally	4	GGT	4	iu/l	18-55	Lo
C15-005442	Blood	4 Calved Normally	4	AST	72	iu/l	38-120	
C15-005442	Blood	4 Calved Normally	4	Total Protein	73.5	g/l	57-83	
C15-005442	Blood	4 Calved Normally	4	Albumin	35.5	g/l	23-37	
C15-005442	Blood	4 Calved Normally	4	Globulin	38.0	g/l	31-51	
C15-005442	Blood	4 Calved Normally	4	A/G Ratio	0.94		0.5-1.5	
C15-005442	Blood	4 Calved Normally	4	Urea	3.34	mmol/l	2.65-6.89	

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

Signed: Cosme Sánchez-Miguel

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Research Officer

C15-005442	Blood	4 Calved Normally	4	Fibrinogen	6	g/l	3-7	
C15-005443	Blood	5 Calved Normally	5	βHB	0.76	mmol/l	0-0.9	
C15-005443	Blood	5 Calved Normally	5	Calcium	2.47	mmol/l	2.1-3.1	
C15-005443	Blood	5 Calved Normally	5	Inorganic Phosphorus	1.72	mmol/l	1.4-2.5	
C15-005443	Blood	5 Calved Normally	5	Copper (Serum)	12.00	μmol/l	9.4-24	
C15-005443	Blood	5 Calved Normally	5	GSH-PX Bovine (Units/ml PCV)	112	Units/ml	18.46-500	
C15-005443	Blood	5 Calved Normally	5	GLDH	5	iu/l	0-25	
C15-005443	Blood	5 Calved Normally	5	GGT	18	iu/l	18-55	
C15-005443	Blood	5 Calved Normally	5	AST	86	iu/l	38-120	
C15-005443	Blood	5 Calved Normally	5	Total Protein	77.5	g/l	57-83	
C15-005443	Blood	5 Calved Normally	5	Albumin	32.4	g/l	23-37	
C15-005443	Blood	5 Calved Normally	5	Globulin	45.1	g/l	31-51	
C15-005443	Blood	5 Calved Normally	5	A/G Ratio	0.72		0.5-1.5	
C15-005443	Blood	5 Calved Normally	5	Urea	3.69	mmol/l	2.65-6.89	
C15-005443	Blood	5 Calved Normally	5	Fibrinogen	8	g/l	3-7	Hi
C15-005444	Blood	10 Calved Normally	10	βHB	0.58	mmol/l	0-0.9	
C15-005444	Blood	10 Calved Normally	10	Calcium	2.35	mmol/l	2.1-3.1	
C15-005444	Blood	10 Calved Normally	10	Inorganic Phosphorus	1.55	mmol/l	1.4-2.5	
C15-005444	Blood	10 Calved Normally	10	Copper (Serum)	9.48	μmol/l	9.4-24	
C15-005444	Blood	10 Calved Normally	10	GSH-PX Bovine (Units/ml PCV)	135	Units/ml	18.46-500	
C15-005444	Blood	10 Calved Normally	10	GLDH	4	iu/l	0-25	
C15-005444	Blood	10 Calved Normally	10	GGT	4	iu/l	18-55	Lo
C15-005444	Blood	10 Calved Normally	10	AST	114	iu/l	38-120	
C15-005444	Blood	10 Calved Normally	10	Total Protein	70.5	g/l	57-83	
C15-005444	Blood	10 Calved Normally	10	Albumin	30.8	g/l	23-37	
C15-005444	Blood	10 Calved Normally	10	Globulin	39.7	g/l	31-51	
C15-005444	Blood	10 Calved Normally	10	A/G Ratio	0.78		0.5-1.5	
C15-005444	Blood	10 Calved Normally	10	Urea	2.70	mmol/l	2.65-6.89	
C15-005444	Blood	10 Calved Normally	10	Fibrinogen	8	g/l	3-7	Hi
C15-005445	Blood	11 Calved Normally	11	βHB	0.47	mmol/l	0-0.9	
C15-005445	Blood	11 Calved Normally	11	Calcium	2.63	mmol/l	2.1-3.1	
C15-005445	Blood	11 Calved Normally	11	Inorganic Phosphorus	2.03	mmol/l	1.4-2.5	
C15-005445	Blood	11 Calved Normally	11	Copper (Serum)	21.00	μmol/l	9.4-24	
C15-005445	Blood	11 Calved Normally	11	GSH-PX Bovine (Units/ml PCV)	130	Units/ml	18.46-500	
C15-005445	Blood	11 Calved Normally	11	GLDH	19	iu/l	0-25	
C15-005445	Blood	11 Calved Normally	11	GGT	32	iu/l	18-55	
C15-005445	Blood	11 Calved Normally	11	AST	150	iu/l	38-120	Hi
C15-005445	Blood	11 Calved Normally	11	Total Protein	78.9	g/l	57-83	
C15-005445	Blood	11 Calved Normally	11	Albumin	29.2	g/l	23-37	
C15-005445	Blood	11 Calved Normally	11	Globulin	49.7	g/l	31-51	
C15-005445	Blood	11 Calved Normally	11	A/G Ratio	0.59		0.5-1.5	
C15-005445	Blood	11 Calved Normally	11	Urea	1.28	mmol/l	2.65-6.89	Lo
C15-005445	Blood	11 Calved Normally	11	Fibrinogen	3	g/l	3-7	

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

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Research Officer

C15-005446	Blood	14 to calve in 7 day 14	Magnesium (Colorimetric)	0.96	mmol/l	0.8-1.32
C15-005446	Blood	14 to calve in 7 day 14	Inorganic Phosphorus	1.66	mmol/l	1.4-2.5
C15-005446	Blood	14 to calve in 7 day 14	Copper (Serum)	9.72	μmol/l	9.4-24
C15-005446	Blood	14 to calve in 7 day 14	GSH-PX Bovine (Units/ml PCV)	129	Units/ml	18.46-500
C15-005446	Blood	14 to calve in 7 day 14	GLDH	12	iu/l	0-25
C15-005446	Blood	14 to calve in 7 day 14	GGT	19	iu/l	18-55
C15-005446	Blood	14 to calve in 7 day 14	AST	74	iu/l	38-120
C15-005446	Blood	14 to calve in 7 day 14	Total Protein	74.2	g/l	57-83
C15-005446	Blood	14 to calve in 7 day 14	Albumin	34.9	g/l	23-37
C15-005446	Blood	14 to calve in 7 day 14	Globulin	39.3	g/l	31-51
C15-005446	Blood	14 to calve in 7 day 14	A/G Ratio	0.89		0.5-1.5
C15-005446	Blood	14 to calve in 7 day 14	Urea	3.91	mmol/l	2.65-6.89
C15-005446	Blood	14 to calve in 7 day 14	Fibrinogen	3	g/l	3-7
C15-005447	Blood	15 to calve in 7 day 15	Magnesium (Colorimetric)	0.97	mmol/l	0.8-1.32
C15-005447	Blood	15 to calve in 7 day 15	Inorganic Phosphorus	2.01	mmol/l	1.4-2.5
C15-005447	Blood	15 to calve in 7 day 15	Copper (Serum)	9.88	μmol/l	9.4-24
C15-005447	Blood	15 to calve in 7 day 15	GSH-PX Bovine (Units/ml PCV)	91	Units/ml	18.46-500
C15-005447	Blood	15 to calve in 7 day 15	GLDH	12	iu/l	0-25
C15-005447	Blood	15 to calve in 7 day	GGT	4	iu/l	18-55 Lo
C15-005447	Blood	15 to calve in 7 day 15	AST	97	iu/l	38-120
C15-005447	Blood	15 to calve in 7 day 15	Total Protein	77.4	g/l	57-83
C15-005447	Blood	15 to calve in 7 day	Albumin	39.0	g/l	23-37 Hi
C15-005447	Blood	15 to calve in 7 day 15	Globulin	38.4	g/l	31-51
C15-005447	Blood	15 to calve in 7 day 15	A/G Ratio	1.02		0.5-1.5
C15-005447	Blood	15 to calve in 7 day 15	Urea	3.49	mmol/l	2.65-6.89
C15-005447	Blood	15 to calve in 7 day 15	Fibrinogen	4	g/l	3-7
C15-005448	Blood	16 to calve in 7 day 16	Magnesium (Colorimetric)	0.97	mmol/l	0.8-1.32
C15-005448	Blood	16 to calve in 7 day 16	Inorganic Phosphorus	2.03	mmol/l	1.4-2.5
C15-005448	Blood	16 to calve in 7 day 16	Copper (Serum)	12.20	μmol/l	9.4-24
C15-005448	Blood	16 to calve in 7 day 16	GSH-PX Bovine (Units/ml PCV)	111	Units/ml	18.46-500
C15-005448	Blood	16 to calve in 7 day	GLDH	34	iu/l	0-25 Hi
C15-005448	Blood	16 to calve in 7 day	GGT	4	iu/l	18-55 Lo
C15-005448	Blood	16 to calve in 7 day 16	AST	105	iu/l	38-120
C15-005448	Blood	16 to calve in 7 day 16	Total Protein	67.5	g/l	57-83
C15-005448	Blood	16 to calve in 7 day 16	Albumin	34.6	g/l	23-37
C15-005448	Blood	16 to calve in 7 day 16	Globulin	32.9	g/l	31-51
C15-005448	Blood	16 to calve in 7 day 16	A/G Ratio	1.05		0.5-1.5
C15-005448	Blood	16 to calve in 7 day 16	Urea	2.98	mmol/l	2.65-6.89
C15-005448	Blood	16 to calve in 7 day 16	Fibrinogen	6	g/l	3-7
C15-005449	Blood	17 to calve in 7 day 17	Magnesium (Colorimetric)	0.93	mmol/l	0.8-1.32
C15-005449	Blood	17 to calve in 7 day 17	Inorganic Phosphorus	1.88	mmol/l	1.4-2.5
C15-005449	Blood	17 to calve in 7 day	Copper (Serum)	8.75	μmol/l	9.4-24 Lo

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

Signed: Cosme Sánchez-Miguel

Submission Assigned To: Cosme Sánchez-Miguel
Research Officer

C15-005449	Blood	17 to calve in 7 day	GSH-PX Bovine (Units/ml PCV)	100	Units/ml	18.46-500
C15-005449	Blood	17 to calve in 7 day	GLDH	6	iu/l	0-25
C15-005449	Blood	17 to calve in 7 day	GGT	4	iu/l	18-55
					Lo	
C15-005449	Blood	17 to calve in 7 day	AST	63	iu/l	38-120
C15-005449	Blood	17 to calve in 7 day	Total Protein	79.8	g/l	57-83
C15-005449	Blood	17 to calve in 7 day	Albumin	36.1	g/l	23-37
C15-005449	Blood	17 to calve in 7 day	Globulin	43.7	g/l	31-51
C15-005449	Blood	17 to calve in 7 day	A/G Ratio	0.83		0.5-1.5
C15-005449	Blood	17 to calve in 7 day	Urea	3.42	mmol/l	2.65-6.89
C15-005449	Blood	17 to calve in 7 day	Fibrinogen	7	g/l	3-7
C15-005450	Blood	18 to calve in 7 day	Magnesium (Colorimetric)	0.96	mmol/l	0.8-1.32
C15-005450	Blood	18 to calve in 7 day	Inorganic Phosphorus	1.62	mmol/l	1.4-2.5
C15-005450	Blood	18 to calve in 7 day	Copper (Serum)	8.05	μmol/l	9.4-24
					Lo	
C15-005450	Blood	18 to calve in 7 day	GSH-PX Bovine (Units/ml PCV)	130	Units/ml	18.46-500
C15-005450	Blood	18 to calve in 7 day	GLDH	7	iu/l	0-25
C15-005450	Blood	18 to calve in 7 day	GGT	4	iu/l	18-55
					Lo	
C15-005450	Blood	18 to calve in 7 day	AST	87	iu/l	38-120
C15-005450	Blood	18 to calve in 7 day	Total Protein	70.0	g/l	57-83
C15-005450	Blood	18 to calve in 7 day	Albumin	34.6	g/l	23-37
C15-005450	Blood	18 to calve in 7 day	Globulin	35.4	g/l	31-51
C15-005450	Blood	18 to calve in 7 day	A/G Ratio	0.98		0.5-1.5
C15-005450	Blood	18 to calve in 7 day	Urea	3.87	mmol/l	2.65-6.89
C15-005450	Blood	18 to calve in 7 day	Fibrinogen	5	g/l	3-7
C15-005451	Blood	19 to calve in 7 day	Magnesium (Colorimetric)	0.93	mmol/l	0.8-1.32
C15-005451	Blood	19 to calve in 7 day	Inorganic Phosphorus	1.87	mmol/l	1.4-2.5
C15-005451	Blood	19 to calve in 7 day	Copper (Serum)	9.54	μmol/l	9.4-24
C15-005451	Blood	19 to calve in 7 day	GSH-PX Bovine (Units/ml PCV)	85	Units/ml	18.46-500
C15-005451	Blood	19 to calve in 7 day	GLDH	3	iu/l	0-25
C15-005451	Blood	19 to calve in 7 day	GGT	4	iu/l	18-55
					Lo	
C15-005451	Blood	19 to calve in 7 day	AST	96	iu/l	38-120
C15-005451	Blood	19 to calve in 7 day	Total Protein	72.7	g/l	57-83
C15-005451	Blood	19 to calve in 7 day	Albumin	33.2	g/l	23-37
C15-005451	Blood	19 to calve in 7 day	Globulin	39.5	g/l	31-51
C15-005451	Blood	19 to calve in 7 day	A/G Ratio	0.84		0.5-1.5
C15-005451	Blood	19 to calve in 7 day	Urea	3.46	mmol/l	2.65-6.89
C15-005451	Blood	19 to calve in 7 day	Fibrinogen	3	g/l	3-7

Findings: HI John,

please give me a call on Monday, I will be away tomorrow Friday.

Clinical Chemistry Reference Ranges also at:

www.agriculture.gov.ie/animalhealthwelfare/laboratoryservices/centralveterinaryresearchlaboratory/centralveterinarylaboratory-pathology/

Signed: Cosme Sánchez-Miguel

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