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NAME	**: Mr. SATWINDER SINGH**		
AGE/ GENDER	: 28 YRS/MALE	**PATIENT ID**	: 1721750
COLLECTED BY	:	**REG. NO./LAB NO.**	**: 012501110031**
REFERRED BY	: LOOMBA HOSPITAL (AMBALA CANTT)	**REGISTRATION DATE**	: 11/Jan/2025 02:33 PM
BARCODE NO.	: 01523759	**COLLECTION DATE**	: 11/Jan/2025 02:43PM
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HAEMATOLOGY

HAEMOGLOBIN - HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HB-HPLC)

Test Name	Value	Unit	Biological Reference interval
HAEMOGLOBIN VARIANTS			
HAEMOGLOBIN A0 (ADULT) *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	85.94	%	83.00 - 90.00
HAEMOGLOBIN F (FOETAL) *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	0.1	%	0.00 - 2.0
HAEMOGLOBIN A2 *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	2.81	%	1.50 - 3.70
PEAK 3 *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	1.51	%	< 10.0
OTHERS-NON SPECIFIC *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	ABSENT	%	ABSENT
HAEMOGLOBIN S *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	NOT DETECTED	%	< 0.02
HAEMOGLOBIN D (PUNJAB) *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	NOT DETECTED	%	< 0.02
HAEMOGLOBIN E *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	NOT DETECTED	%	< 0.02
HAEMOGLOBIN C *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	NOT DETECTED	%	< 0.02
UNKNOWN UNIDENTIFIED VARIANTS *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	NOT DETECTED	%	< 0.02
GLYCOSYLATED HAEMOGLOBIN (HbA1c): WHOLE BLOOD *by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)*	4.6	%	4.0 - 6.4
RED BLOOD CELLS (RBCS) COUNT AND INDICES			
HAEMOGLOBIN (HB) *by AUTOMATED HEMATOLOGY ANALYZER*	15.9	gm/dL	12.0 - 17.0
RED BLOOD CELL (RBC) COUNT *by AUTOMATED HEMATOLOGY ANALYZER*	**5.29^{H}**	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV) *by AUTOMATED HEMATOLOGY ANALYZER*	46.3	%	40.0 - 54.0
MEAN CORPUSCULAR VOLUME (MCV) *by AUTOMATED HEMATOLOGY ANALYZER*	87.4	fL	80.0 - 100.0
MEAN CORPUSCULAR HAEMOGLOBIN (MCH) *by AUTOMATED HEMATOLOGY ANALYZER*	30	pg	27.0 - 34.0
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC) *by AUTOMATED HEMATOLOGY ANALYZER*	34.3	g/dL	32.0 - 36.0
RED CELL DISTRIBUTION WIDTH (RDW-CV)	13.9	%	11.00 - 16.00

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Test Name	Value	Unit	Biological Reference interval
by AUTOMATED HEMATOLOGY ANALYZER			
RED CELL DISTRIBUTION WIDTH (RDW-SD) *by AUTOMATED HEMATOLOGY ANALYZER*	45.6	fL	35.0 - 56.0
OTHERS			
NAKED EYE SINGLE TUBE RED CELL OSMOTIC FRAGILITY TEST *by SINGLE RED CELL OSMOTIC FRAGILITY*	NEGATIVE (-ve)		NEGATIVE (-ve)
MENTZERS INDEX *by CALCULATED*	16.52	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
INTERPRETATION	THE ABOVE FINDINGS ARE SUGGESTIVE OF NORMAL HAEMOGLOBIN CHROMATOGRAPHIC PATTERN		

INTERPRETATION:

The Thalassemia syndromes, considered the most common genetic disorder worldwide, are a heterogenous group of mandelian disorders, all characterized by a lack of/or decreased synthesis of either the alpha-globin chains (alpha thalassemia) or the beta-globin chains (beta thalassemia) of haemoglobin.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC):

1.HAEMOGLOBIN VARIANT ANALYSIS, BLOOD- High Performance liquid chromatography (HPLC) is a fast & accurate method for determining the presence and for quatitation of various types of normal haemoglobin and common abnormal hb variants, including but not limited to Hb S, C, E, D and Beta –thalassemia.
2.The diagnosis of these abnormal haemoglobin should be confirmed by DNA analysis.
3.The method use has a limited role in the diagnosis of alpha thalassemia.
4.Slight elevation in haemoglobin A2 may also occur in hyperthyroidism or when there is deficiency of vitamin b12 or folate and this should be istinguished from inherited elevation of HbA2 in Beta- thalassemia trait.

NAKED EYE SINGLE TUBE RED CELL OSMOTIC FRAGILITY TEST (NESTROFT):

1.It is a screening test to distinguish beta thalassemia trait. Also called as Naked Eye Single Tube Red Cell Osmotic Fragility Test.
2.The test showed a sensitivity of 100%, specificity of 85.47%, a positive predictive value of 66% and a negative predictive value of 100%.
3.A high negative predictive value can reasonably rule out beta thalassemia trait cases. So, it should be adopted as a screening test for beta thalassemia trait, as it is not practical or feasible to employ HbA2 in every case of anemia in childhood.

MENTZERS INDEX:

1.The Mentzer index, helpful in differentiating iron deficiency anemia from beta thalassemia. If a CBC indicates microcytic anemia, the Mentzer index is said to be a method of distinguishing between them.
2.If the index is less than 13, thalassemia is said to be more likely. If the result is greater than 13, then iron-deficiency anemia is said to be more likely.
3.The principle involved is as follows: In iron deficiency, the marrow cannot produce as many RBCs and they are small (microcytic), so the RBC count and the MCV will both be low, and as a result, the index will be greater than 13. Conversely, in thalassemia, which is a disorder of globin synthesis, the number of RBC's produced is normal, but the cells are smaller and more fragile. Therefore, the RBC count is normal, but the MCV is low, so the index will be less than 13.

NOTE: In practice, the Mentzer index is not a reliable indicator and should not, by itself, be used to differentiate. In addition, it would be possible for a patient with a microcytic anemia to have both iron deficiency and thalassemia, in which case the index would only suggest iron deficiency.

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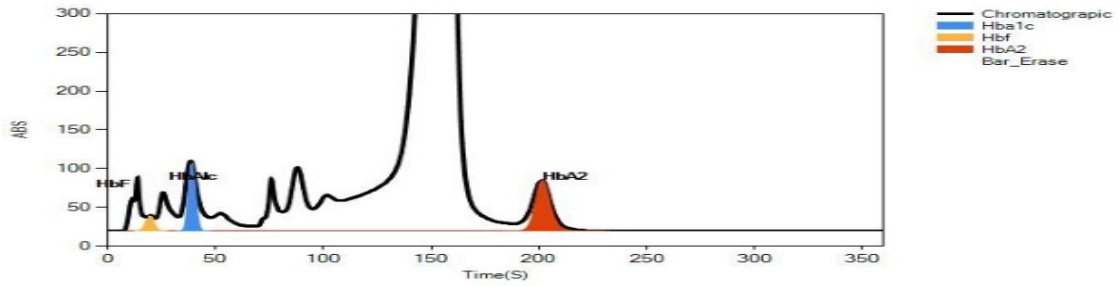
Test Name	Value	Unit	Biological Reference interval

HbA2 Reports

Total Area : **250489**

Sample Id : 01523759 Sample Processed Date: 12/01/202025 / 04:37

Peak Name	Retention Time(s)	Absorbance	Area	Result (Area %)
HbA1b	13.8	69.7	2145.3	0.86
HbF	20.4	20.7	1938.2	0.10
LA1c	26.5	49.4	3353.9	1.34
HbA1c	39.9	90.5	8639.3	4.62
P3	79.5	66.8	3784.2	1.51
P4	92.2	82.0	7063.9	2.82
HbA0	163.1	1251.6	215475.0	85.94
HbA2	211.9	65.2	8089.8	2.81



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CLINICAL PATHOLOGY

SEMEN ANALYSIS/SEMINOGRAM

Test Name	Value	Unit	Biological Reference interval
PHYSICAL EXAMINATION			
TIME OF SPECIMEN COLLECTION	11-01-2025	AM/PM	
DURATION OF ABSTINENCE	3 DAYS	DAYS	2 - 7
TYPE OF SAMPLE	FRESH		
LIQUIFACTION TIME AT 37*C	< 30 MINS	MINS	30 - 60
VOLUME	1.5	ML	
COLOUR	WHITISH OPAQUE		WHITISH OPAQUE
VISCOSITY	VISCOUS		VISCOUS
pH	**8^{H}**		5.0 - 7.5
AUTOMMATED SEMEN ANALYSIS, GOLD STANDARD, WHO APPROVED (SQA GOLD)			
TOTAL SPERM CONCENTRATION *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	86.5	Millions/mL	12 - 16
TOTAL MOTILITY (GRADE A + GRABE B + GRADE C) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	52	%	> = 42.0
RAPIDLY PROGRESSIVE MOTILITY (GRADE A) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	31	%	> = 30.0
SLOWLY PROGRESSIVE MOTILITY (GRADE B) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	13	%	>= 30
NON PROGRESSIVE MOTILITY (GRADE C) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	8	%	<= 1
IMMOTILE *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	48	%	
MORPHOLOGY NORMAL *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	9	%	> = 4.0
MOTILE SPERM CONCENTRATION *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	45.1	Millions/mL	> = 6.0
RAPIDLY PROGRESSIVE MOTILE SPERM CONCENTRATION *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	27	Millions/mL	> = 5.0
SLOWLY PROGRESSIVE MOTILE SPERM CONCENTRATION *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	11	Millions/mL	
FUNCTIONAL SPERM CONCENTRATION	7.9	Millions/mL	

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Test Name	Value	Unit	Biological Reference interval
by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM			
VELOCITY (AVERAGE PATH VELOCITY) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	44	Mic/sec	> = 5
SPERM MOTILE INDEX (SMI) *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	226		> = 80
TOTAL PER EJACULATION			
TOTAL SPERM NUMBER *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	129.8	Millions/ejc.	> = 39.0
TOTAL MOTILE SPERM *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	67.6	Millions/ejc.	> = 16.0
TOTAL PROGRESSIVE MOTILE SPERM *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	57	Millions/ejc.	> = 12.0
TOTAL FUNCTIONAL SPERM *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	11.9	Millions/ejc.	
TOTAL MORPHOLOGY NORMAL SPERM *by ELECTRO-OPTICS SIGNAL & COMPUTER ALOGRITHM*	11.7	Millions/ejc.	> = 2.0
MANUAL MICROSCOPY AND MORPHOLOGY			
VITALITY *by MICROSCOPY*	68	%	
RED BLOOD CELLS (RBCs) *by MICROSCOPY*	NOT DETECTED	/HPF	NOT DETECTED
PUS CELLS *by MICROSCOPY*	2-3	/HPF	0 - 5
AGGLUTINATES *by MICROSCOPY*	NOT DETECTED		NOT DETECTED
AMORPHOUS DEPOSITS/ROUND CELLS/DEBRIS *by MICROSCOPY*	NOT DETECTED		NOT DETECTED
BACTERIA *by MICROSCOPY*	NEGATIVE (-ve)		NEGATIVE (-ve)
HEAD DEFECTS *by MICROSCOPY*	36	%	
PIN HEADS *by MICROSCOPY*	9	%	
NECK AND MID-PIECE DEFECTS *by MICROSCOPY*	25	%	
TAIL DEFECTS *by MICROSCOPY*	18	%	

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Test Name	Value	Unit	Biological Reference interval
CYTOPLASMIC DROPLETS *by MICROSCOPY*	2	%	
ACROSOME/NUCLEUS DEFECTS *by MICROSCOPY*	1	%	
CHEMICAL EXAMINATION			
SEMEN FRUCTOSE (QUALITATIVE) ***by QUALITATIVE METHOD USING RESORCINOL***	**POSITIVE (+ve)**		**POSITIVE (+ve)**

INTERPRETATION:

1.Fructose is the energy source for sperm motility. A positive fructose is considered normal.
2.Azoospermia and fructose negative results may indicate an absence of seminal vesicles / vas deferens in the area of seminal vesicles / obstruction of seminal vesicles.

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Test Name	Value	Unit	Biological Reference interval

MICROBIOLOGY

CULTURE AEROBIC BACTERIA AND ANTIBIOTIC SENSITIVITY: SEMEN

CULTURE AND SUSCEPTIBILITY - SEMEN

DATE OF SAMPLE	11-01-2025
SPECIMEN SOURCE	SEMEN
INCUBATION PERIOD	48 HOURS
CULTURE *by AUTOMATED BROTH CULTURE*	STERILE
ORGANISM *by AUTOMATED BROTH CULTURE*	NO AEROBIC PYOGENIC ORGANISM GROWN AFTER 48 HOURS OF INCUBATION AT 37*C

AEROBIC SUSCEPTIBILITY - SEMEN

INTERPRETATION

SUSCEPTIBILITY:

1. A test interpreted as **SENSTITIVE** implies that infection due to isolate may be appropriately treated with the dosage of an antimicrobial agent recommended for that type of infection and infecting species, unless otherwise indicated.
2. A test interpreted as **INTERMEDIATE** implies that the" Infection due to the isolate may be appropriately treated in body sites where the drugs are physiologically concentrated or when a high dosage of drug can be used".
3. A test interpreted as **RESISTANT** implies that the "isolates are not inhibited by the usually achievable concentration of the agents with normal dosage, schedule and/or fall in the range where specific microbial resistance mechanism are likely (e.g. beta-lactamases), and clinical efficacy has not been reliable in treatment studies.

CAUTION:

Conditions which can cause a false Negative culture:

1. Patient is on antibiotics. Please repeat culture post therapy.
2. Anaerobic bacterial infection.
3. Fastidious aerobic bacteria which are not able to grow on routine culture media.
4. Besides all these factors, at least in 25-40 % of cases there is no direct correlation between in vivo clinical picture.
5. Renal tuberculosis to be confirmed by AFB studies

*** End Of Report ***

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