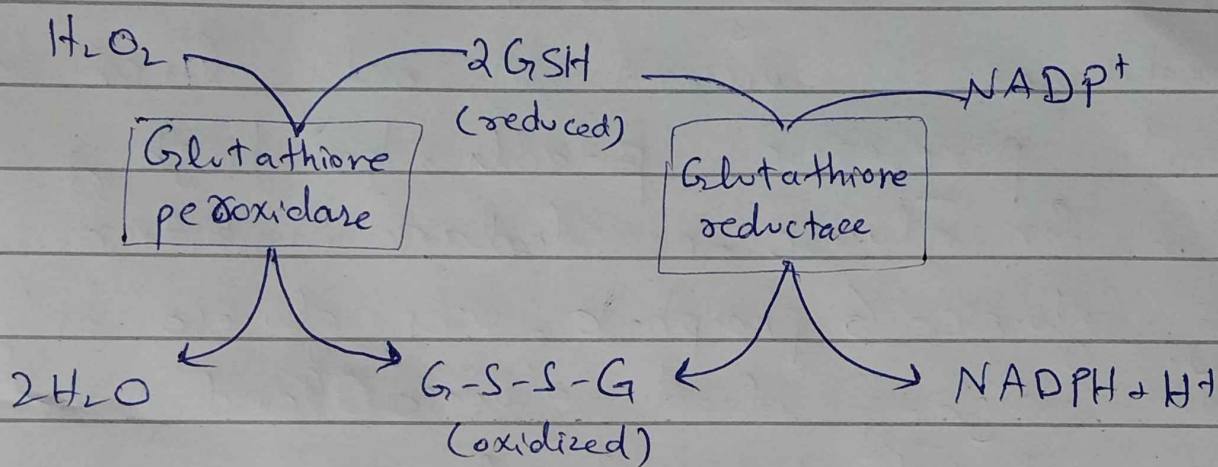


(1)

- H_2O_2 can damage unsaturated lipids, proteins and DNA which is prevented by following reaction in an RBC to maintain its membrane integrity



(2)

- Transketolase transfers a 2-C fragment from xylulose-5-Phosphate to either ribose-5-phosphate or erythrose-4-Phosphate. It utilizes thiamine pyrophosphate (TPP) as prosthetic group
- Transaldolase catalyzes transfers of a 3-C dihydroxyacetone moiety, from sedoheptulose-7-phosphate to glyceraldehyde-3-phosphate. It has an α, β barrel structure

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(3)

- Hexokinase is present in all tissues, has low K_m for glucose, feedback inhibition by glucose-6-phosphate, controls basal metabolism of glucose and has no induction by Insulin.
- Glucokinase is present in only liver and pancreatic β -cells, has high K_m for glucose, no feedback inhibition by glucose-6-phosphate, uses glucose only at high blood glucose level and is inducted by Insulin.

(4)

- Reason = Deficient or Non-functional Homogentisate oxidase enzyme
so build up of Homogentisic acid
- Complications = Alcaptonic bodies
Ochronosis
Arthritis
Urine Blackening

(5)

Enzyme Deficient: β -Glucosidase

Major Storage Compound: Glucocerebroside

Symptoms: Enlargement of liver and spleen, osteoporosis and mental retardation.

(6)

- Streptomycin \rightarrow misreading of mRNA
- Tetracycline \rightarrow inhibits binding of aminoacyl tRNA to ribosomal complex
- Purromycin \rightarrow enters A site and gets incorporated into growing peptide \rightarrow release
- Chloramphenicol \rightarrow competitive inhibitor of peptidyl transferase
- Erythromycin \rightarrow Inhibits translocation by binding 50S subunit of bacterial ribosome
- Diphtheria toxin \rightarrow Prevents translocation by inactivating elongation factor eEF₂

(7)

- Thyroid Hormone → Increase in basal metabolic rate
- Epinephrine - Nor-Epinephrine Hormones → Fight/Flight Response

(8)

- Separation/Denaturation/Melting = DNA Strands are separated (melted) by heating for 15s - 2 minutes at 95°C.
- Priming/Annealing = The primers are annealed by cooling to 50°C for 0.5 - 2 minutes. The primers hybridize with their complementary single stranded DNA produced in the first step

(9)

- Insulin, glucagon, antidiuretic hormone, oxytocin.
- cAMP acts as a second messenger for a majority of polypeptide hormones whose receptors are on cell surface membrane mediated by G-proteins.

(10)

- Endopeptidases (proteases) which attack the internal peptide bonds and release peptide fragments e.g. pepsin, trypsin.
- Exopeptidases which act on the peptide bonds of terminal amino acids. These are sub-divided into carboxypeptidases (act on C-terminal amino acid) and aminopeptidases (act on N-terminal amino acid).

(11)

→ GluT	1	RBC, Brain, Kidney, Colon, Retina, Placenta
GluT	2	Intestine, Liver and Pancreas
GluT	3	Neurons, Brain
GluT	4	Skeletal, Heart muscle, Adipose
SGluT		Intestine, Kidney

(12)

- Physiological Inhibitors = Thermogenin, thyroxine and long chain fatty acids.
- Synthetic Inhibitors = Oligomycin and Atractyloside

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(13)

- Splicing is post-transcriptional change in mRNA in which introns are removed as lariat and exons are ligated together.