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- CHEMICAL EDUCATION

FURTHER CLASSIFICATION OF CARBOHYDRATES

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ABSTRACT

On the basis of composition, carbohydrates have been classified into euglycans, subglycans and addglycans. Euglycans have been further classified into monoglycans and multiglycans. Multiglycans have been further classified into diglycans, oligoglycans and polyglycans. Subglycans have been classified into monoglycosides and multiglycosides. Addglycans have been classified into proteoglycans and lipoglycans. On the basis of its taste carbohydrates have been classified into saccharides and asaccharides. Saccharides have been further classified into eusaccharides and pseudosaccharides. On the basis of its complexities, carbohydrates have been classified into structural, functional and storage carbohydrates**.** This proposed classification of carbohydrates would be very useful even in futures.

Key words: Classification, Carbohydrates, Glycans, Saccharides.

INTRODUCTION

Glucose is a primary product of green plants, which forms different carbohydrates and non-carbohydrates during its metabolism. New carbohydrates have been added by the authors. The old pattern of classification is not capable to add all the carbohydrates along with glycosides. So, a new pattern of classification is proposed by the authors. The present study deals with the further classification of carbohydrates, based on its composition, taste and complexities.

METHODS

Carbohydrates have been classified on the basis of complexities, composition and taste. The words used in the flow charts have been collected through literature review and online search.

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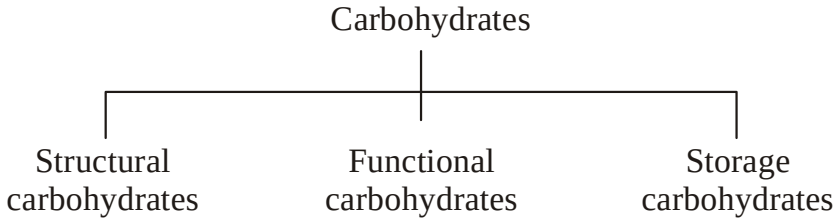
RESULTS AND DISCUSSION

Classification of carbohydrates on the basis of its complexities

On the basis of complexities carbohydrates have been classified into structural carbohydrates, functional carbohydrates and storage carbohydrates. Structural carbohydrates takes part in cellular structure formation, while functional carbohydrates helps in cellular function. Storage carbohydrates are starch and glycogen etc.



Classification of carbohydrates on the basis of compositions

On the basis of composition, carbohydrates have been classified into euglycans, subglycans and addglycans.

Euglycans

Euglycans are true and simple carbohydrates like glucose lactose and starch. It has been further classified into monoglycans and multiglycans.

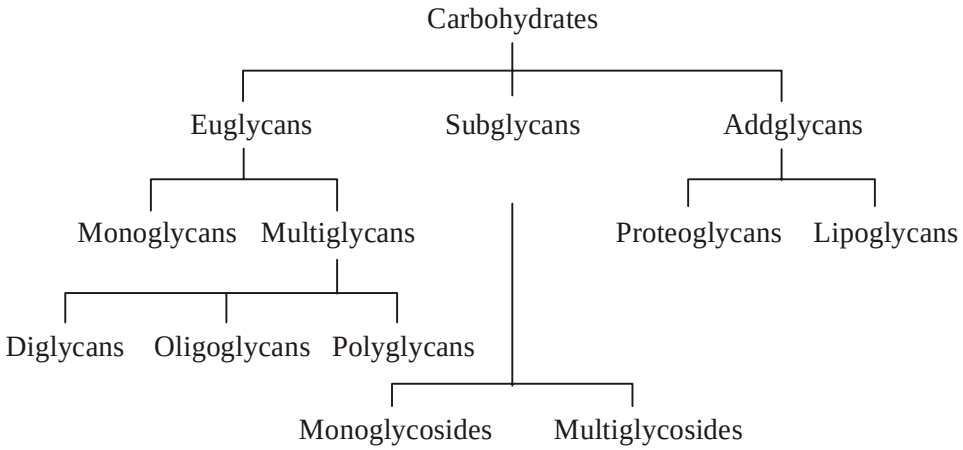
Multiglycans have been further classified into diglycans, oligoglycans and polyglycans. Monoglycans, diglycans, oligoglycans and polyglycans are monosaccharides, disaccharides, oligosaccharides and polysaccharides respectively.

Subglycans

Subglycans have been further classified into monoglycosides and multiglycosides. Subglycans are derived carbohydrates and its place has not been found in old pattern of classification. Monoglycosides are amino sugar, uronic acid, deoxyribose etc. Multiglycosides are polymers of glycosides e.g. chitin, alginic acid and hyaluronic acid etc. It is also important part of carbohydrates.

Addglycans

Addglycans have been further divided into proteoglycans and lipoglycans. Addglycans are those complex compound in which carbohydrates are bounded to non-carbohydrates like proteins and lipids called proteoglycans and lipoglycans respectively.



Classification of carbohydrates on the basis of taste

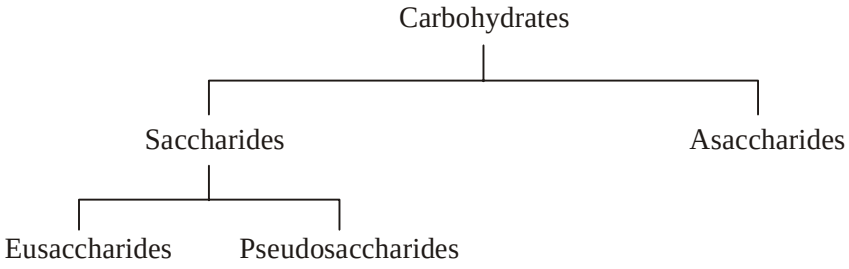
On the basis of taste carbohydrates have been classified into saccharides and asaccharides. Taste is found in saccharides but asaccharides are tasteless.

Saccharides

Saccharides have been further classified into eusaccharides and pseudosaccharides. Eusaccharides are sweet carbohydrates, while pseudosaccharides are sweet but non-carbohydrates.

Asaccharides

Asaccharides are those carbohydrates which are not sweet in taste e.g. starch.



CONCLUSION

In this way this pattern of classification of carbohydrates would be very useful for research purposes and it has academic importance.

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