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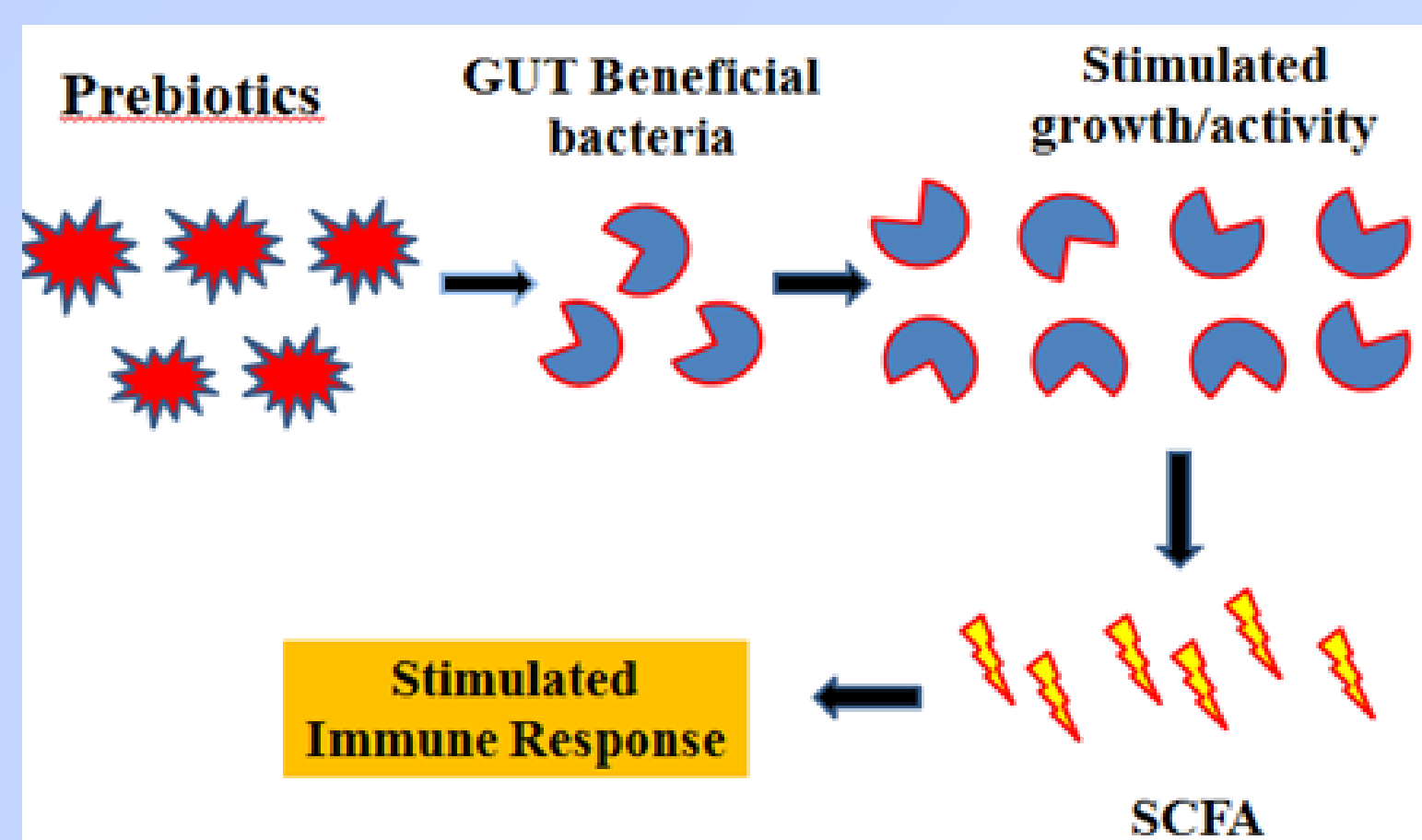
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Background

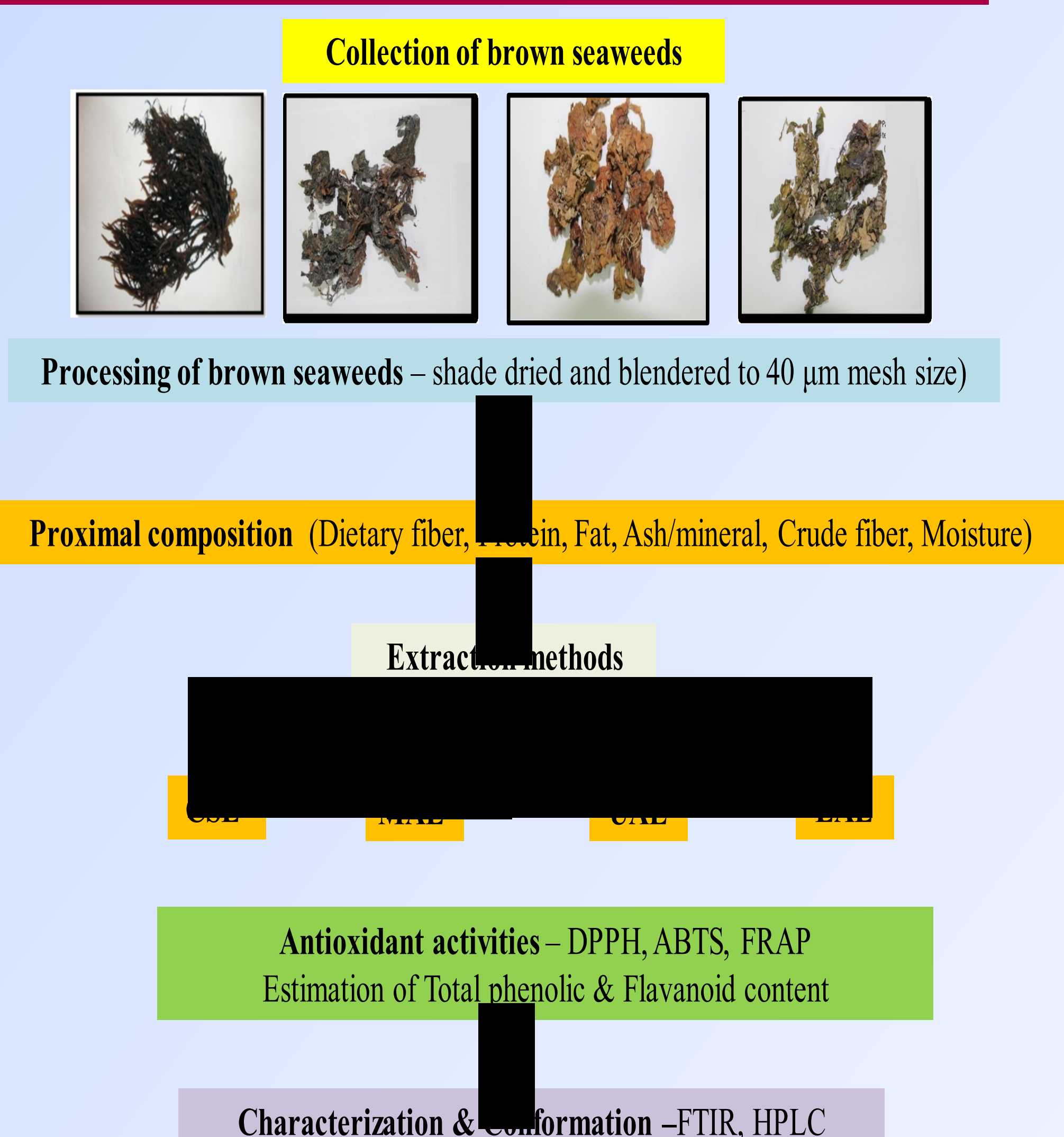
- Scientist nowadays stepped targeting gut microbiota mediated immune system development for the treatment of several diseases like diabetes, cancer, obesity et.
- Bioactive compounds are found beneficial for enhancing the activity of gut microbes.
- Seaweeds, an unexploited resource of nature are rich in bioactive compounds like polysaccharides, called to be dietary fibers.



Objectives

- To estimate the proximal composition of the collected brown seaweeds *S. wightii*, *S. asperum*, *C. sinouosa*, and *P. tetrastromatica*
- To evaluate the extraction efficiency of the brown seaweed polysaccharides (BSP) by different methods such as conventional solvent extraction (CSE), microwave aided extraction (MAE), ultrasonication aided extraction (UAE) and enzyme aided extraction (EAE)
- To analyse the antioxidant activities of the brown seaweed extracts of different extraction methods
- To characterize and to confirm the presence of polysaccharides through FTIR and HPLC analysis

Methodology



Results

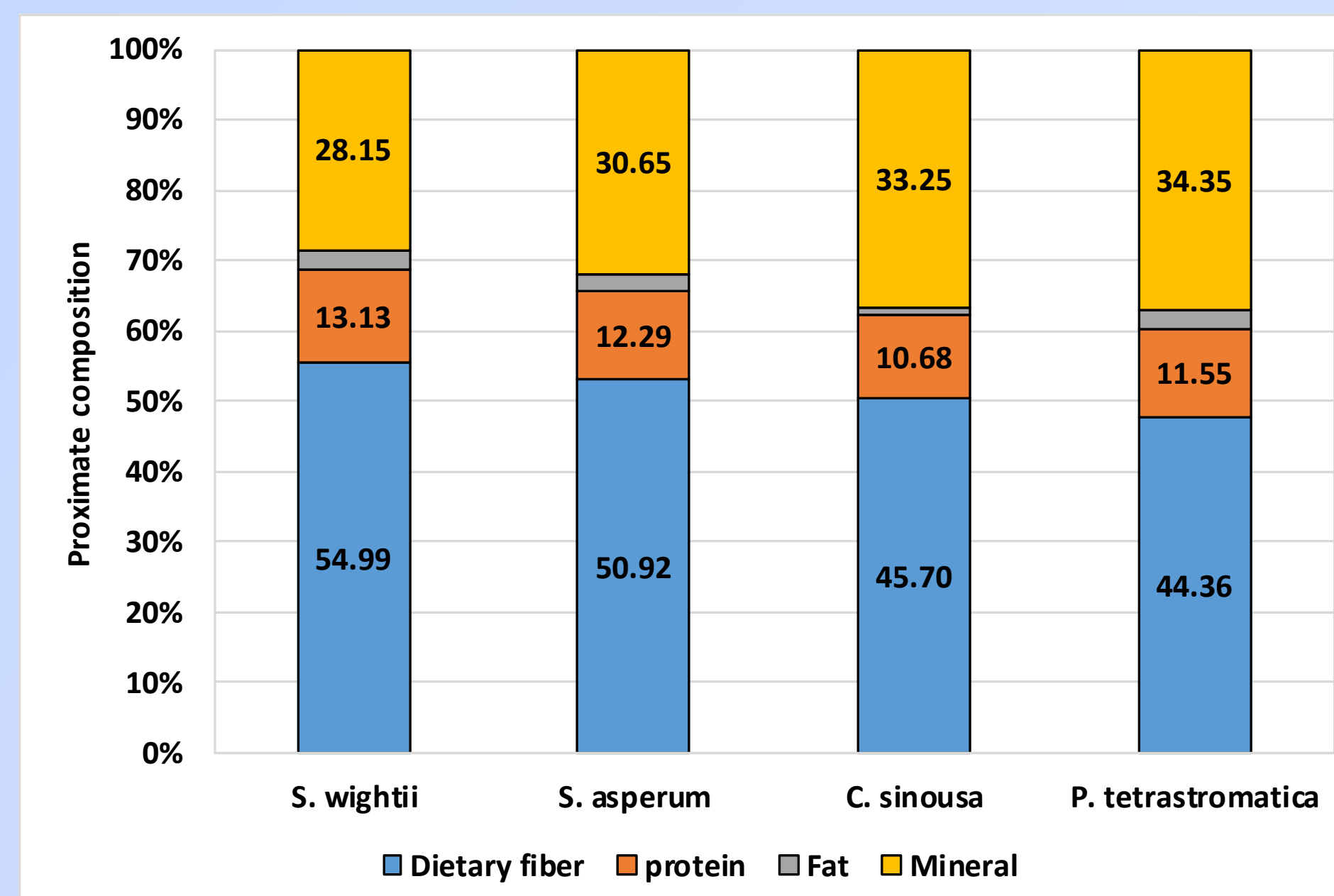


Fig. 1. Proximal composition of the selected Indian brown seaweeds

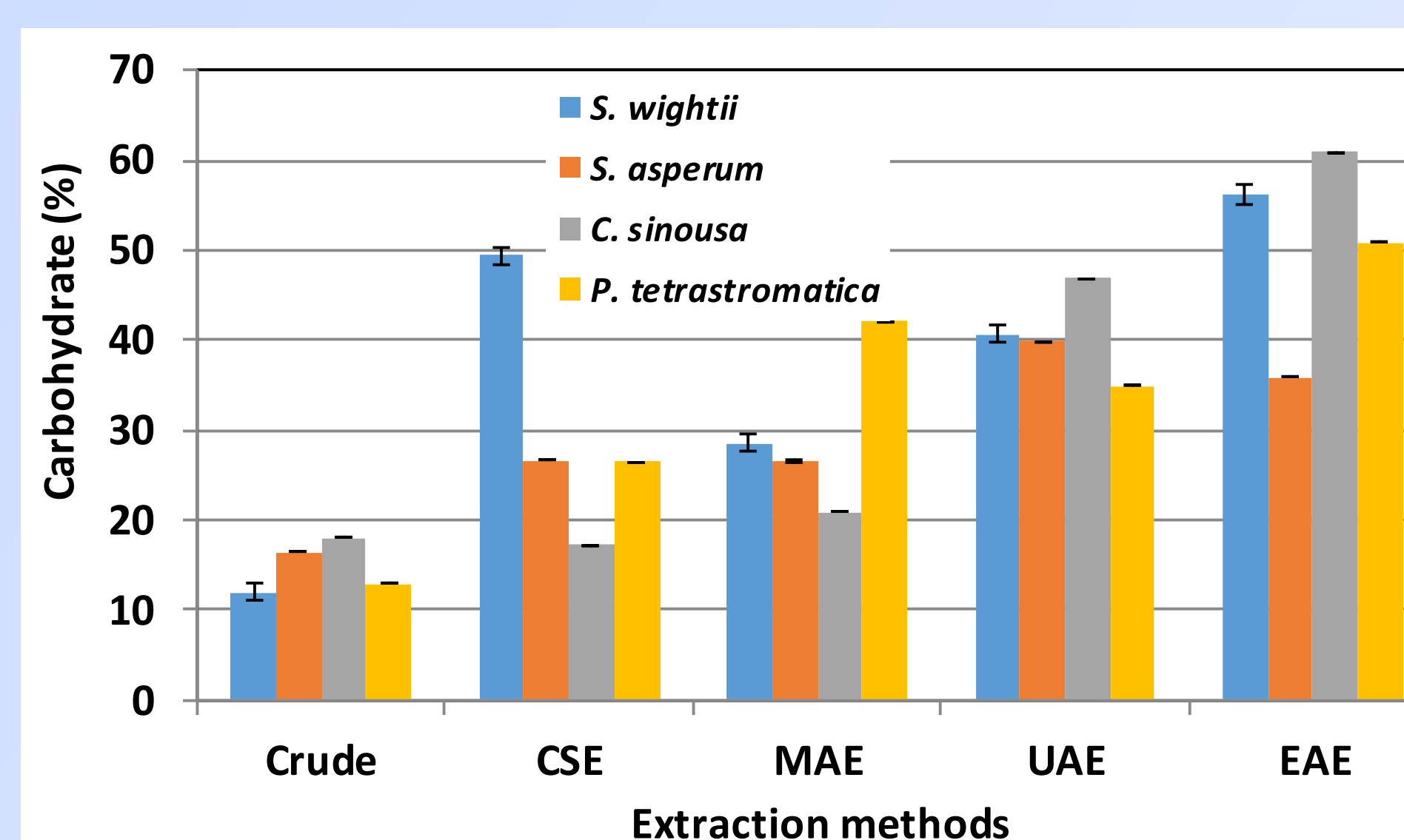


Fig. 2. Total carbohydrate (%) of the extracts of selected Indian brown seaweeds

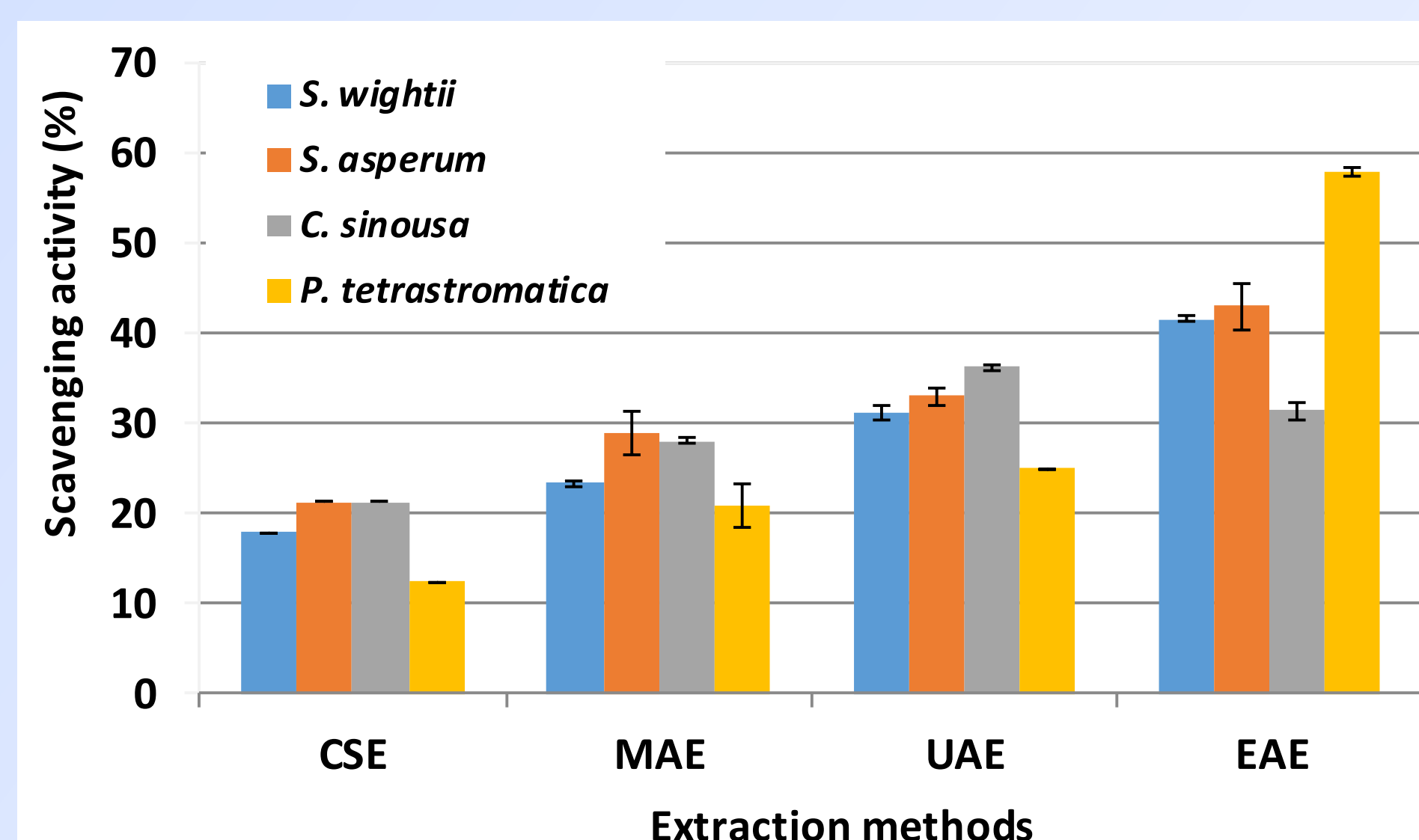


Fig. 3. DPPH radical scavenging activity of the extracts of selected Indian brown seaweeds

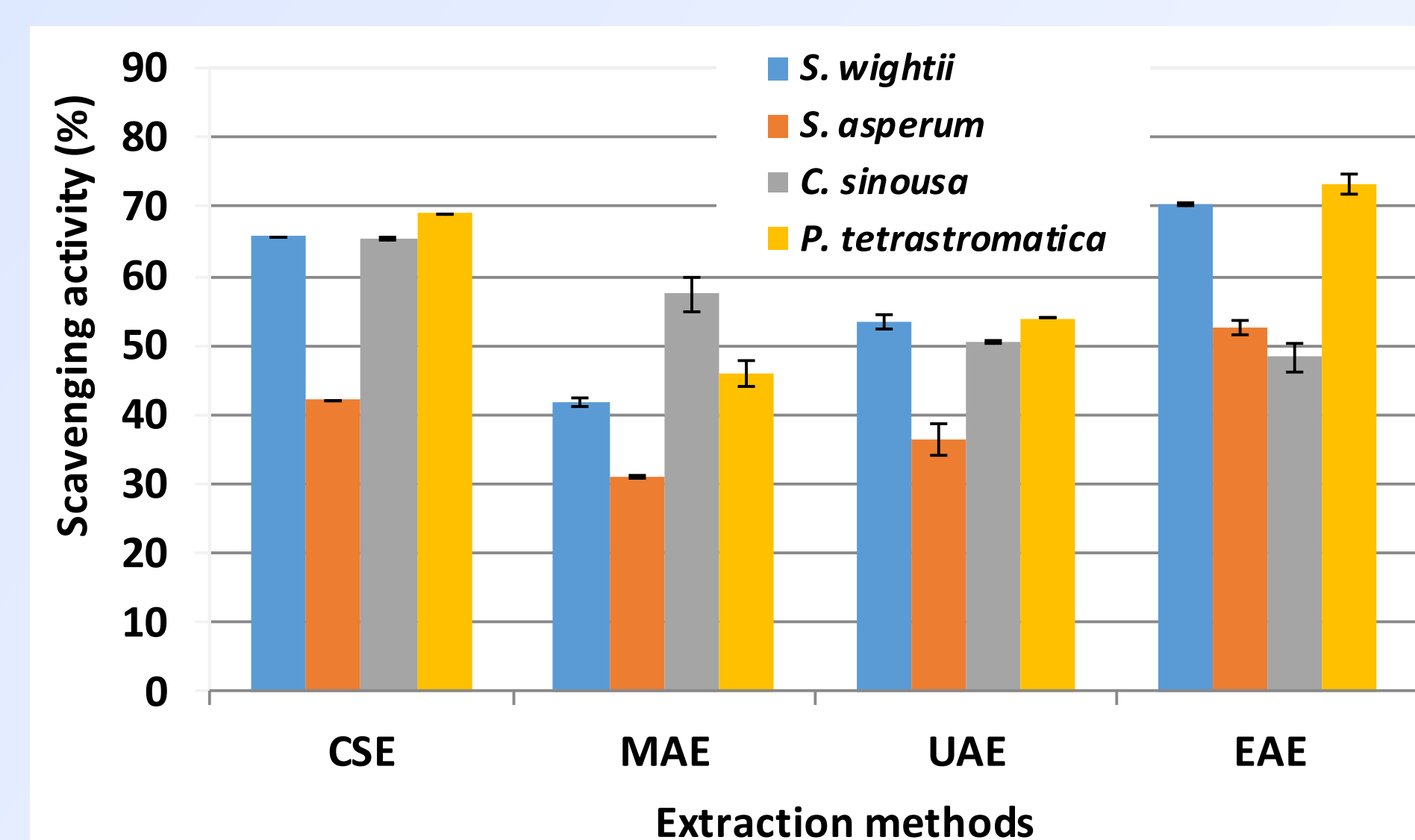


Fig. 4. ABTS radical scavenging activity of the extracts of selected Indian brown seaweeds

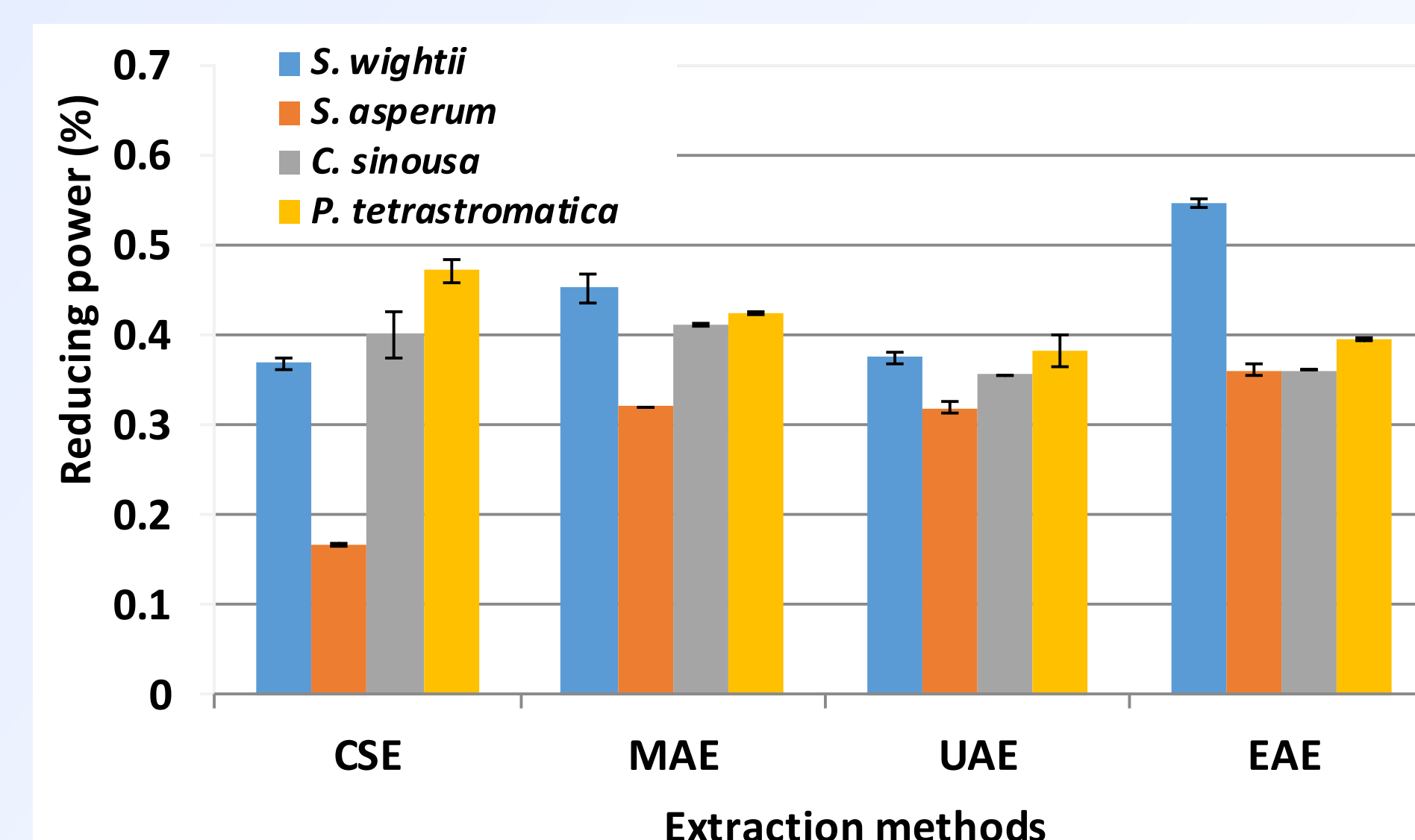


Fig. 5. Ferric reducing power activity of the extracts of selected Indian brown seaweeds

Results (Continued)

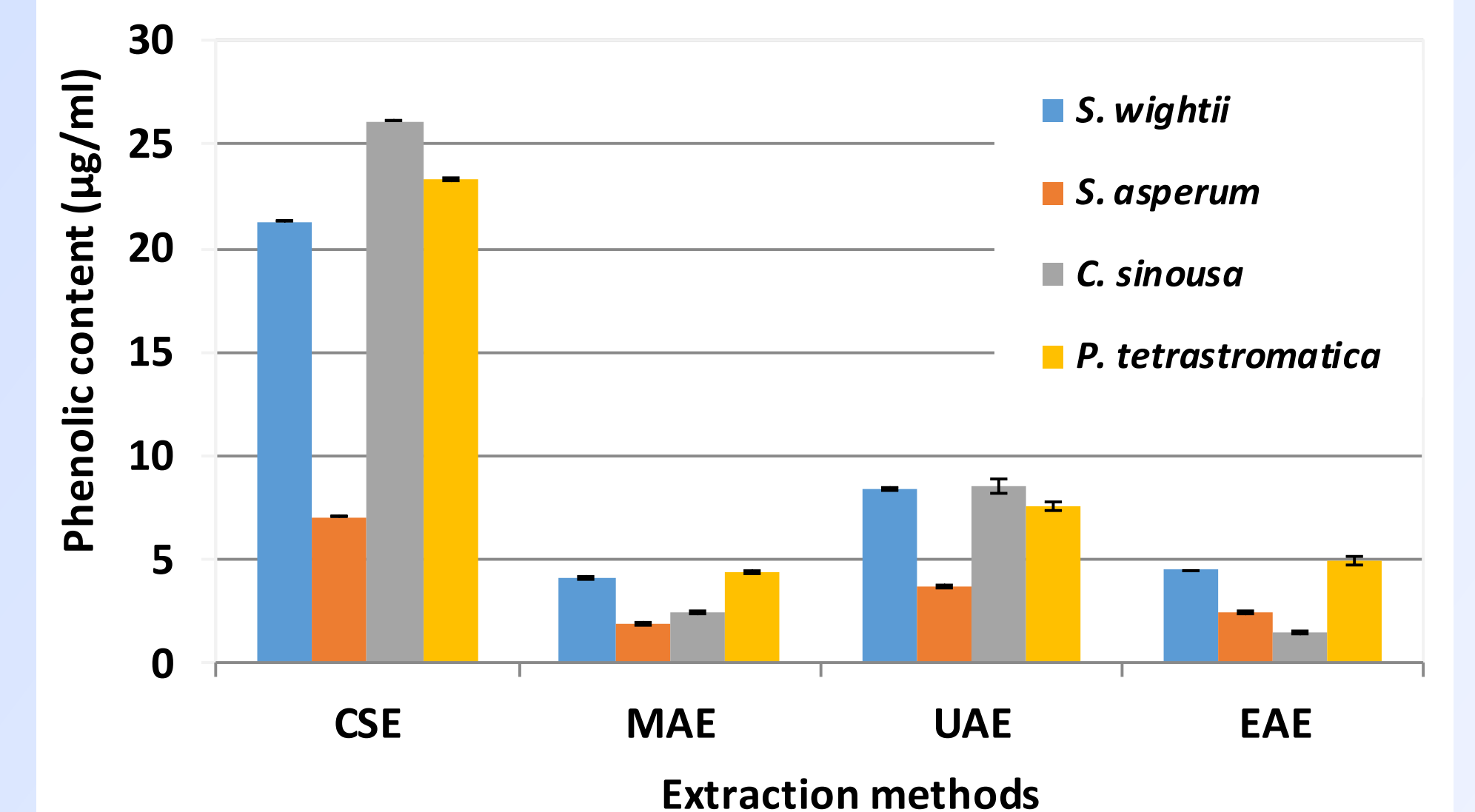


Fig. 6. Phenolic content (µg/ml) of the extracts of selected Indian brown seaweeds

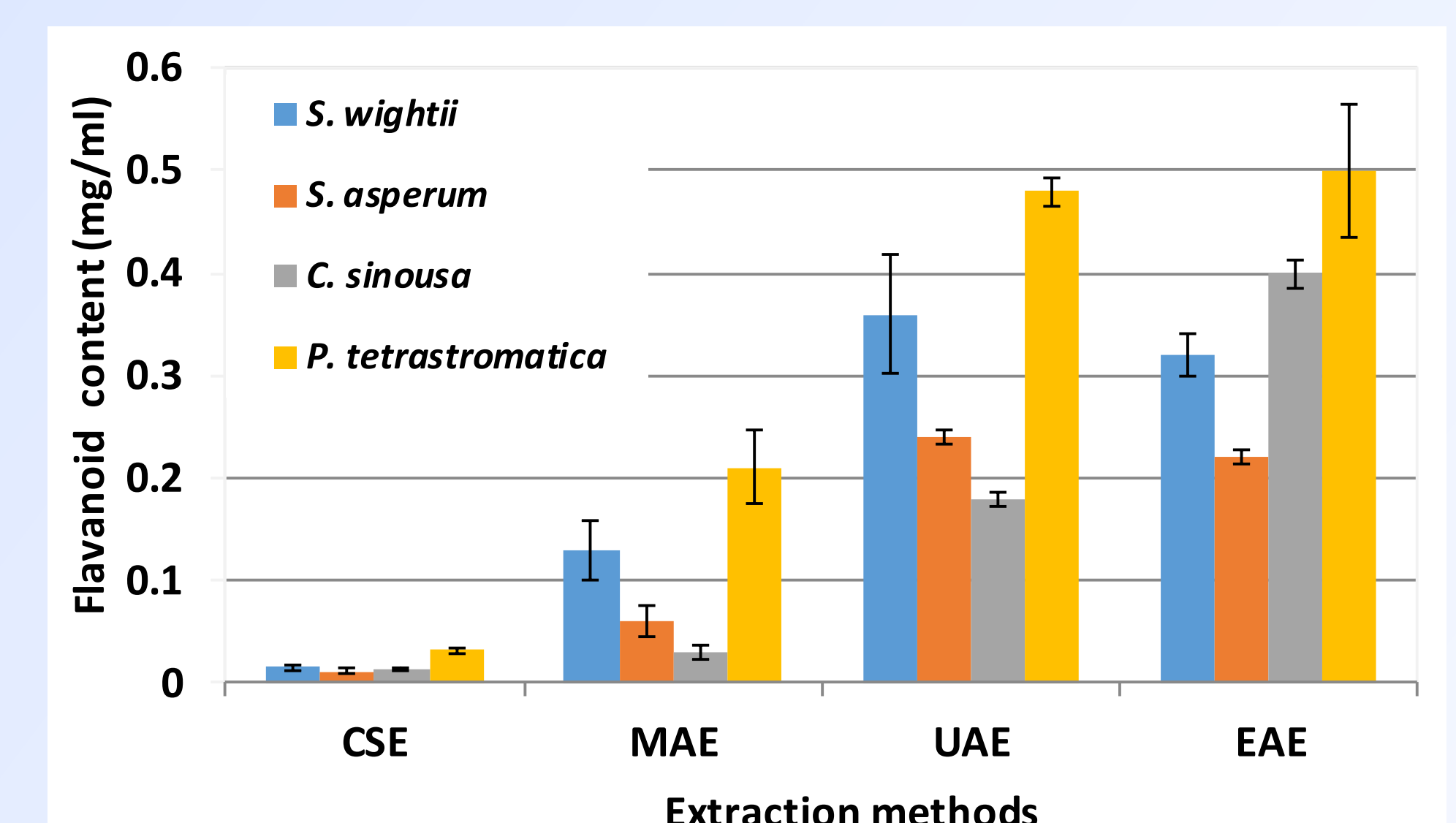


Fig. 7. Flavanoid content (mg/ml) of the extracts of selected Indian brown seaweeds

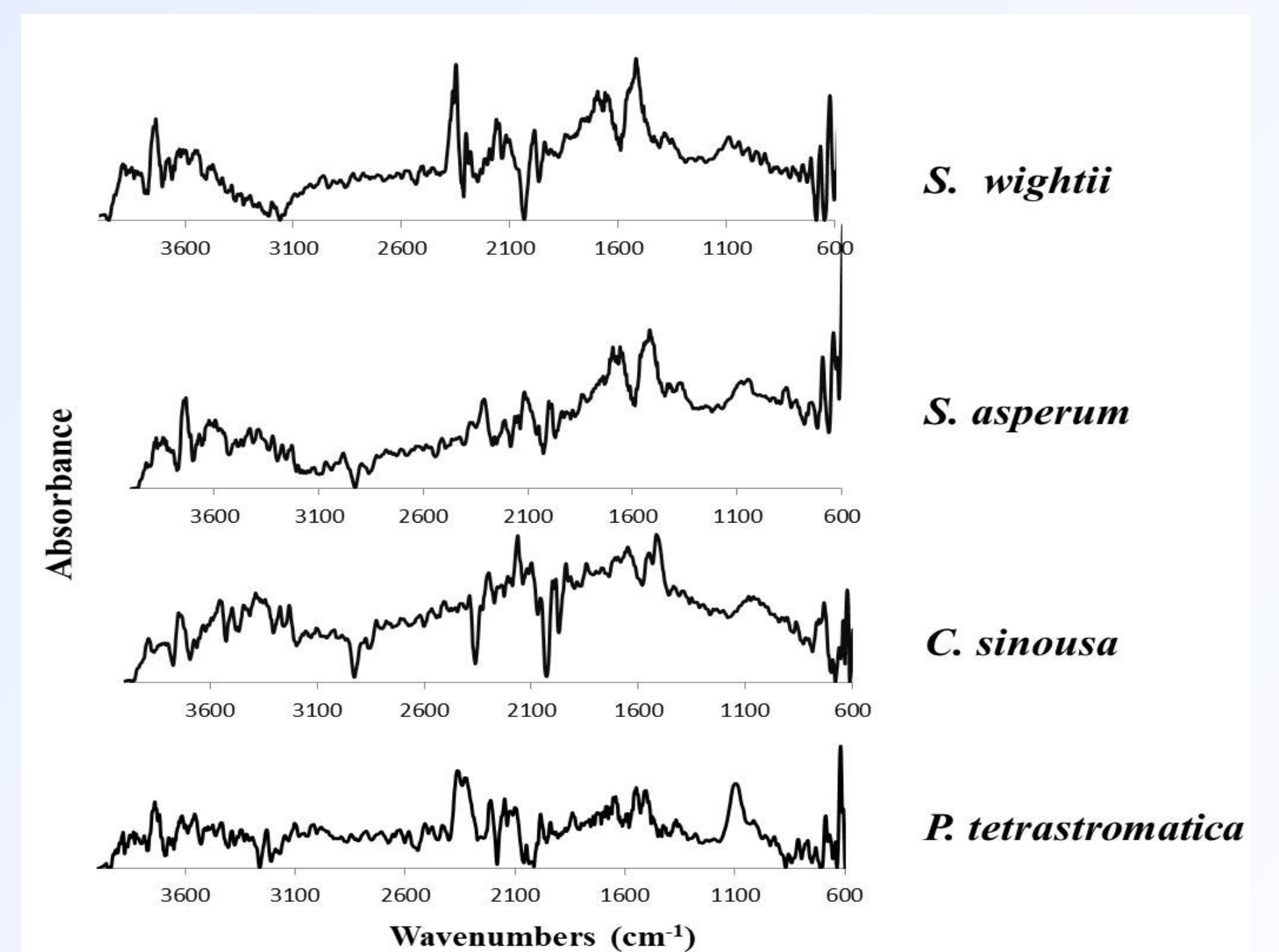


Fig. 8. FTIR spectrum of the extracts of selected Indian brown seaweeds

Conclusion

- EAE was found to exhibit high carbohydrate (%) up to 50-70% while comparing to the other methods attempted.
- The total dietary fiber content was found maximum in *S. wightii* that could be later used for prebiotic studies.
- P. tetrastromatica* in all extraction methods found to exhibit high antioxidant properties that can later find its application in therapeutical field of research.

References

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Acknowledgement

- National Institute of Technology Rourkela, India
- DST - Gol for the financial grant under Women Scientist Category (WOS - B) [File No: SR/WOS-B/282/2016]