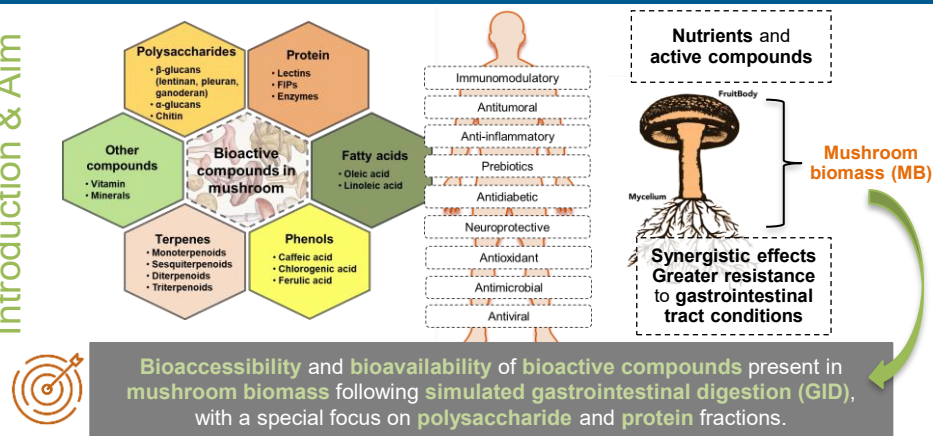


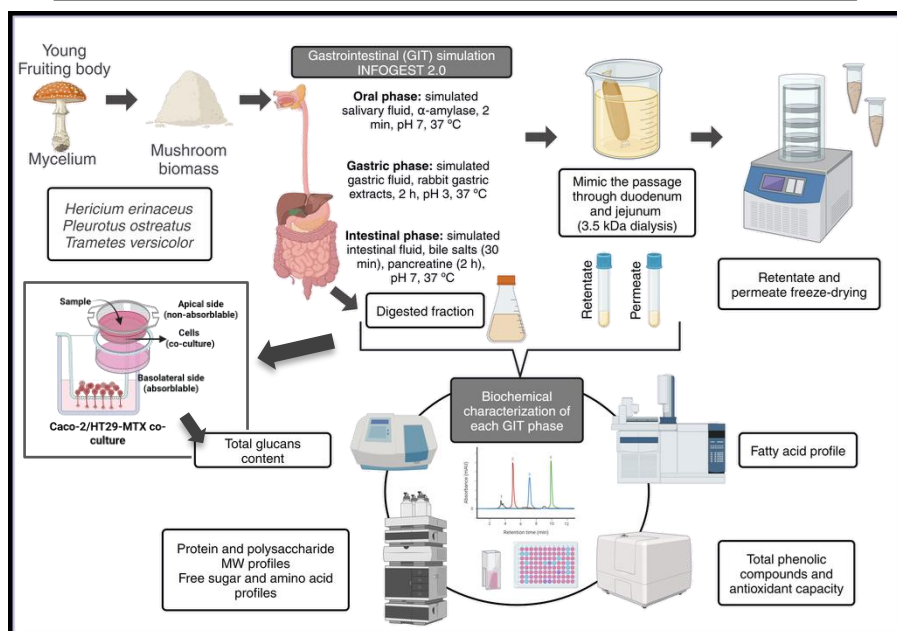
Bioaccessibility and Bioavailability of Bioactive Compounds from Mushroom Biomass Following *in vitro* Gastrointestinal Digestion

Helena Araújo-Rodrigues^{a,b,*}, Ana Sofia Salsinha^a, Manuela Machado^a, João B. Relvas^{b,c}, Freni K. Tavarira^a, Manuela Pintado^a
^a CBQF, ESB-UCP, Portugal. ^b i3S-UP, Portugal. ^c IBMC-UP, Portugal.

Introduction & Aim



Methodology

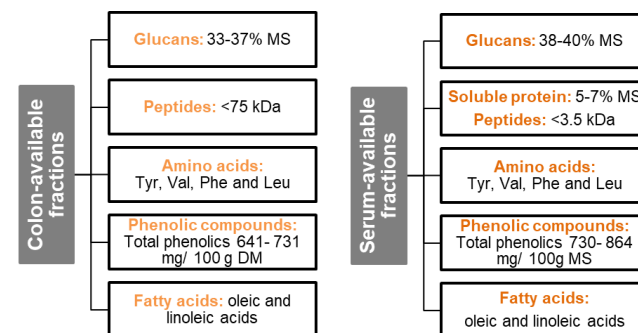


Results & Discussion

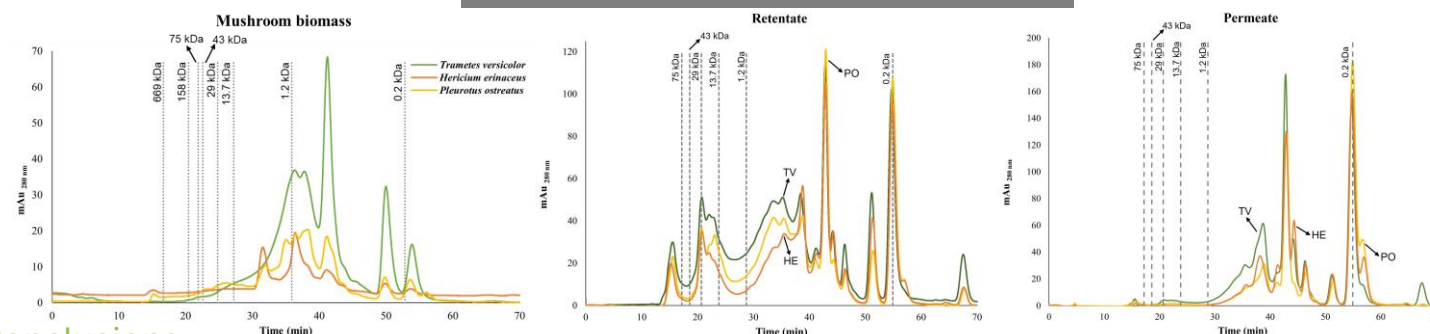
Species	Total glucans*	(1→3)(1→6)-β-glucans	α-glucans and other β-glucans*
Mushroom biomass (MB)			
TV	76.15±5.06 ^a	4.67±1.28 ^{a,A}	71.49±7.26 ^{a,A}
HE	79.87±0.57 ^a	2.89±0.55 ^{a,A}	76.98±4.33 ^{a,A}
PO	80.45±5.05 ^a	2.96±0.52 ^{a,A}	77.49±2.22 ^{a,A}
Permeate fraction (serum-available)			
TV	38.18±1.77 ^a	N.D.	38.80±1.16 ^a
HE	40.26±1.24 ^a	N.D.	39.98±0.65 ^a
PO	39.55±0.82 ^a	N.D.	40.08±0.91 ^a
Retentate fraction (colon-available)			
TV	33.12±0.26 ^b	5.56±0.39 ^a	27.56±0.13 ^b
HE	37.74±0.51 ^a	4.57±0.81 ^{a,b}	33.18±1.32 ^a
PO	37.25±1.53 ^a	3.41±0.87 ^b	33.83±0.66 ^a

Different lowercase letters (a, b, and c) in the same column, corresponding to the same GIT phase, indicate significant differences ($p < 0.05$) between species. Total glucans, α-glucans and other β-glucans include free glucose (Glc) and possible Glc derived from the hydrolysis of sucrose.

- (1→4)-α-glucans and (1→4)-β-glucans were the most prevalent groups, with results validated by permeability assays using Caco-2/HT29-MTX co-cultures



Protein and peptide molecular weight (MW) distribution:



Conclusions

These findings demonstrate that MB represents a valuable source of bioactive compounds after GID. Both colon-available and serum-available fractions showed potential for human health, indicating prebiotic and systemic activities, respectively. This study expands perspectives in the nutraceutical field and highlights opportunities for future research into mushroom-based functional foods.